



**Heidelberg Papers
in South Asian
and Comparative Politics**

**In Pursuit of a Grand Strategy:
An Explanation of Pakistan's Evolving Nuclear
Policy**

by

Mohammed Badrul Alam

Working Paper No. 43

December 2008

South Asia Institute
Department of Political Science
Heidelberg University



**HEIDELBERG PAPERS IN SOUTH ASIAN AND
COMPARATIVE POLITICS**

ISSN: 1617-5069

About HPSACP

This occasional paper series is run by the Department of Political Science of the South Asia Institute at the University of Heidelberg. The main objective of the series is to publicise ongoing research on South Asian politics in the form of research papers, made accessible to the international community, policy makers and the general public. HPSACP is published only on the Internet. The papers are available in the electronic pdf-format and are designed to be downloaded at no cost to the user.

The series draws on the research projects being conducted at the South Asia Institute in Heidelberg, senior seminars by visiting scholars and the world-wide network of South Asia scholarship. The opinions expressed in the series are those of the authors, and do not represent the views of the University of Heidelberg or the Editorial Staff.

Potential authors should consult the style sheet and list of already published papers at the end of this article before making a submission.

Editor	Subrata K. Mitra
Deputy Editors	Clemens Spiess Malte Pehl Jivanta Schöttli Siegfried O. Wolf Anja Kluge
Managing Editor	Florian Britsch
Editorial Assistant	Sergio Mukherjee
Editorial Advisory Board	Katharine Adeney Mohammed Badrul Alam Barnita Bagchi Harihar Bhattacharyya Mike Enskat Alexander Fischer Karsten Frey Partha S. Ghosh Julia Hegewald Evelin Hust Karl-Heinz Krämer Apurba Kundu Peter Lehr Kenneth McPherson Marie-Thérèse O'Toole Christian Wagner Wolfgang-Peter Zingel

In Pursuit of a Grand Strategy: An Explanation of Pakistan's Evolving Nuclear Policy¹

MOHAMMED BADRUL ALAM²

WITHIN RISK PARADIGM: IS PAKISTAN A RISK?

Whether to risk- a taste for it or an aversion to it- is a meaningful way to explain decision making since it links the strategic and the psychological conceptions of choice.³ It portrays leaders as calculating goal-seekers while allowing them to have different personal decision making styles. One can call Khrushchev risk-acceptant or risk-seeking and Brezhnev risk-averse without implying that either one was more rational than the other. In the same vein, one can argue that governing elite of Pakistan are risk takers perhaps to the point of brinkmanship. According to Utility theory suggested by de Finetti (1952) and developed by Arrow (1964), Pratt (1964), Goldgeier/Tetlock (2001), Berejikian (2002), Herrmann/Fischerkeller (1995), Hymans (2006), Mercer (2005), Hashmi/Lee (2004), etc, the risk averse person will prefer not to gamble too hard and accept the best outcome at face value while risk taker will try to push the envelope too far to the point of brinkmanship for deriving maximum advantage or leverage. Risk acceptance was attributed to Britain and France in their intervention in Suez (Richardson, 1992) and to Eisenhower in his deception about the U-2 over-flight (McDermott, 1998); while a

¹ I am particularly grateful to Prof. Subrata K. Mitra and the staff at Heidelberg University's South Asia Institute (Department of Political Science) for their feedback and encouragement. I thank the South Asia Institute, the State of Baden-Württemberg and the Indo-German Cultural Exchange Programme for supporting my stay in Heidelberg. An earlier version of the paper was presented at the National Institute of Defense and Strategic Studies, University of Pune, India, October 8-10, 2006.

² Dr. Mohammed Badrul Alam is Professor of Political Science, Jamia Millia Islamia University, New Delhi, India. He can be contacted at mbalam786@gmail.com.

³ O'Neil, Barry; 'Risk Aversion in International Relations Theory', *International Studies Quarterly*, Vol.45, No.4, March 2001, p.617-640.

cautious decision was the United States staying out of the Suez crisis (McDermott, 1998). This association of risk acceptance with riskier choice appears in Bueno de Mesquita's revised expected utility theory of war (1985) and its development by Morrow (1987). The idea is that a risk-averse state is one that chooses policies that reduce others' incentives to attack it. Jervis (1992) presents a prospect theory interpretation of crisis instability and suggests that because decisions are being made among losses in territory, reputation or domestic support, a leader intends to order a pre-emptive strike in cases in which the standard expected utility model would predict the actor to cut his losses to the minimum. Under this model, it is possible to argue that under extreme provocation and in an asymmetrical strategic environment vis-a-vis India, Pakistan's ruling elite, may adopt a policy of preemption as it may determine that it (Pakistan) has nothing more to lose by not going in for the first use of nuclear weapons.

CONTEXTUALISING THE CONCEPT OF DETERRENCE

Concept of deterrence assumes significance in military strategic discourse when one or the other state in the same regional neighborhood acquires nuclear weapons. Within deterrence literature, deterrence by denial, according to Glen Snyder, is premised on the failure of deterrence and the preparedness by the other party to this eventuality.⁴ The other version of the deterrence by denial is by denying the adversary the specific military advantage it might want to respond through an overwhelming force of its own. Michael Howard has defined deterrence as a policy that seeks to persuade an adversary, through the actual threat of military retaliation, that the costs of using military force to resolve political conflict will outweigh the benefits derived from it.⁵ Deterrence theory assumes that there is a certain measure of transparency of interests and capability inherent in a state's action and in its response in a given strategic situation that are of supreme national importance.

In contrast, the theory of deterrence by punishment seeks to prevent aggression by threat of punitive retaliation. US strategic policy in the 1950s with its emphasis on massive retaliation and assured destruction are examples of deterrence by punishment.⁶

In the context of South Asia, Pakistan's nuclear doctrine relies in part on both of these components: deterrence by denial as well as deterrence by punishment. What makes Pakistan's strategic policy bit ambiguous is neither of these concepts been articulated or explored fully to its operational limits vis-a-vis India's nuclear strategy.

⁴ Snyder, Glenn; *Deterrence and Defense*; Princeton, Princeton University Press, 1961.

⁵ Howard, Michael; 'Reassurance and Deterrence: Western Doctrine in the 1980s', *Foreign Affairs*, Vol. 61, No. 1, 1982/83, p.315; also, see, Rajain, Arpit. *Nuclear Deterrence in Southern Asia*, London: Sage Publishers, 2005, p.63.

⁶ Dulles, John Foster; 'Challenge and Response in US Policy', *Foreign Affairs*, Vol. 36, No. 1, 1968, p. 62-64. also, see, McNamara, Robert S. *The Essence of Security: Reflections in Office*, London: Hodder and Stoughton, 1968, p. 52.

INDIA'S NUCLEAR DOCTRINE AND COMPARE/CONTRAST WITH PAKISTAN

In 1974, India conducted a nuclear test that it termed a 'peaceful nuclear explosion'. However, in 1998, India conducted a full scale nuclear test and subsequently claimed to attain nuclear capability which was followed soon after by its neighbor, Pakistan, also opting for the same nuclear route. A year later, the draft on nuclear doctrine was presented in August 1999 to the Indian Prime Minister and the Cabinet and was subsequently released for public debate by the National Security Advisory Board.

The nuclear doctrine of India was perhaps the first of its kind among the known nuclear weapon states of the world, and India prepared the expansive nuclear doctrine document before obtaining capability mentioned in it. This draft, with minor alternations, effectively become India's nuclear doctrine on January 4, 2003 when the Cabinet Committee on Security Affairs (CSA) reviewed the operationalisation of India's nuclear doctrine. The following are some of the highlights of India's and Pakistan's nuclear doctrine on a comparative note.⁷

- India's strategic perspective for its nuclear doctrine encompasses wider latitude than South Asia in keeping with its strategic potential. Pakistan's perspective as presently evident seems to be India-specific.
- India proclaims "no-first-use" as a matter of principle. Pakistan is averse to it and disinclined to give any such guarantees, feeling that a bland 'no-first use' policy invalidates its deterrence advantage against India.
- India's nuclear weapons system will be "TRIAD" (land based ballistic missiles, sea based assets and air borne platforms). Pakistan's current capacity in this regard is limited to land based and aircraft delivery systems.
- India and Pakistan's nuclear doctrines emphasize a 'credible minimum deterrent.' However, Pakistan's capabilities in this direction may be questionable.
- India has revised its nuclear doctrine in 2003 by including any chemical, biological and nuclear attack on its territory to be responded through

⁷ Kapila, Subhash; 'India and Pakistan Nuclear Doctrine: A Comparative Analysis', Article No. 260, New Delhi: Institute of Peace and Conflict Studies, September 15, 1999. also, available at <http://www.ipcs.org/newKashmirLevel2.jsp?action=showView&kValue=573&subCatID=null&mod=null>, see, also, 'Limited War Under the Nuclear Shadow in South Asia', Article No. 1623, New Delhi: Institute of Peace and Conflict Studies, 29 January 2005, available at http://www.ipcs.org/Nuclear_articles2.jsp?action=showView&kValue=1636&issue=1015&status=article&mod=a; also, see, Tellis, Ashley J; *Stability in South Asia*, Santa Monica, CA: Rand Corporation, 1997, p.77.

massive nuclear retaliation. Pakistan has not made any such formulations so far.

- India's nuclear arsenal will be under civil political control at all times. Pakistani's nuclear arsenal will be under de-facto control of the Army Chief.
- India will not resort to use or threat of use of nuclear weapons against non-nuclear weapons state or those not aligned with nuclear weapon powers. Pakistan has not made any such explicit pledge in its nuclear policy.
- 'Kargil'(1999) and 'Operation Parakram'(2001-02) crises demonstrated that Mutually Assured Destruction deterrence is operating in South Asia, and that both sides have fairly recessed redlines for launching a nuclear strike on the other side. But it remains unclear how much of their restraint is not a fallout of direct deterrence, rather a lack of political will or external intervention.
- India and Pakistan seem to be eager to engage in dangerous brinkmanship. Elite leadership of both countries are acutely aware of the utility of nuclear weapons as a political tool rather than their military implications. Provocative statements are being made, often for consumption of domestic or third-party audiences, which has the potential of sending mixed signals to the adversary.
- On the positive side, recent crises have shown three potentially stabilising trends between India and Pakistan: a growing sense of restraint in each country's crisis management behavior, growing transparency and openness in their strategies, and growing US involvement in crisis resolution.
- The incentives to persist with unconventional and low intensity conflict in the form of state-supported terrorism, state-supported insurgency and cross-border terrorism are likely to continue at the lower end of the conflict spectrum as large scale conventional wars remain risky. This may result in conventional deterrence stability even though the stability might be construed as 'ugly' and less than perfect peace.

EVOLUTION OF PAKISTAN'S NUCLEAR PROGRAM AND Z.A.BHUTTO

The key decision whether Pakistan should embark on a 'coherent nuclear program' was discussed for the first time in 1963, though its deterrence value was emphasized by Zulfikar Ali Bhutto publicly for the first time in 1965.⁸ To quote him, "All wars of our age have become total wars and it will have to be assumed that a war waged against Pakistan is capable of becoming a total war...and our plan

⁸ Refer Bhutto's statement in the National Assembly of Pakistan, see, *The National Assembly of Pakistan Debates*, 3(1-13), May 30, 1974, third session of 1974, pp.304-5.

should, therefore, include the nuclear deterrent."⁹ After China's nuclear tests in 1964, Pakistan was apprehensive that India would go nuclear. Bhutto, who was then a member in Ayub Khan's cabinet stated, "If India developed an atomic bomb, we too will develop one 'even if we have to eat grass or leaves or to remain hungry' because there is no conventional alternative to the atomic bomb."¹⁰ Two aspects of his statement are noteworthy-first, its linkage to India, second, his emphasis on atomic bomb as the ultimate weapon.

The secession of East Pakistan in 1971 and the subsequent 1974 tests by India led to a serious rethinking among Pakistan's nuclear security elite which ultimately paved the way for paradigm shift in South Asian security enclave.

PAKISTAN'S NUCLEAR COMMAND

With Pakistan opting for the nuclear weaponisation in the summer of 1998, it also established the Nuclear Command Authority (NCA) in February 2000 with three components: an Employment Control Committee, the Development Control Committee and the Strategic Plans Division. Pakistan also set up a nuclear regulatory authority to bring proper coordination in its nuclear program. NCA is responsible for policy formulation, employment and development control over all strategic nuclear forces and strategic organizations. Besides the President, the NCA includes foreign affairs, defense and interior ministers, chiefs of all military services and heads of strategic organizations. At a review session in November 27, 2000, the NCA reviewed the strategic and security environment facing Pakistan and took important decisions on nuclear policy matters that included, amongst others, strategic threat perception, restructuring of the strategic organizations and export control mechanisms.¹¹

PAKISTAN'S THINKING ON NO FIRST USE (NFU)

Pakistan has thus far shown little interest in the idea of NFU. Perhaps the closest Pakistan has officially come to accepting the language of no first use was in the summer of 2002 when India and Pakistan confronted each other in the wake of the Kaluchak massacre in Jammu and Kashmir. In response to India's threats to retaliate conventionally to the massacre, Pakistan stated that it would respond forcefully in turn, hinting that it was prepared to use nuclear weapons as a first choice. Shortly thereafter Islamabad publicly clarified, apparently under US pressure, that responding to an Indian attack did not mean nuclear use, presumably first use, against India.

⁹ Bhutto, Z.A; *Myth of Realities*, Karachi: Oxford University Press, 1969, p.153.

¹⁰ Cited in Cheema, Pervez Iqbal; "Nuclear Development in Pakistan: Future Directions", in P.R.Chari et al. *Nuclear Non-Proliferation in India and Pakistan*, Manohar; Delhi, 1996, p.105, also, see, Smruti S. Pattnaik; "Pakistan's Nuclear Strategy", *Strategic Analysis*, New Delhi, January-March 2003, Vol. 27, No. 1, pp. 94-114.

¹¹ See, www.stratfor.com, December 7, 2000; also, see, "Pakistan sets up N-arms Command", *The Times of India*, New Delhi, November 28, 2000; also, "Musharraf to head Pak Nuclear Command", *The Statesman*, Kolkata, February 4, 2000.

Among non-officials in Pakistan, those who oppose weaponization as well as those who support a minimum deterrent would probably support NFU, the former as an interim confidence-building measure in the transition to nuclear disarmament and the latter in order to keep the nuclear arsenal minimal and to signal moderation and restraint. Most prominently, Pervez Hoodbhoy has suggested that India and Pakistan should, as part of a bilateral nuclear treaty, agree to a no first use policy. Hoodbhoy argues that NFU would actually benefit Pakistan. NFU would be an investment in stability and survival. In case of nuclear war, Pakistan would have much more to lose than India since New Delhi can inflict much greater nuclear damage (and presumably absorb much greater loss).¹²

Pakistani skepticism or opposition to NFU seems to arise from the following concerns. In contrast to India, Pakistan's thinking on a no first use/first use policy is almost completely military-strategic and country specific (India). First of all, as in India and elsewhere in the world, there are those in Pakistan who doubt the efficacy and practicality of an NFU. Now, the question arises, can Pakistan rely on India's leadership to abide by a no first use commitment? Also, are there any way of verifying in absolute sense that an adversary (India) is committed to no first use?

Secondly, even if NFU were credible, acceptance of it would mean permanent Pakistani strategic inferiority and wideing the window of vulnerability. Given Pakistan's inferiority in conventional forces vis-a-vis India, the threat of first use is vital to its (Pakistan's) deterrence against India, while the actual use of nuclear weapons first may be vital to Pakistan's defense and its survival if and when deterrence fails.

Thirdly, there is a line of more offensive-minded Pakistani thinking that vehemently opposes an NFU. As per this line of reasoning, first use of nuclear weapons is intrinsic to Pakistan's exploitation of the asymmetrical conventional situation in South Asia. Protected under the umbrella of nuclear weapons, Pakistan is free to choose sub-conventional conflict with India. For example, in Kashmir fearing Pakistan's first use, India cannot cross the Line of Control in Kashmir valley or the international boundary further south. These strategists regard Pakistan's support of cross-border terrorism in Kashmir since the late 1980s, the Kargil war in 1999, and the crisis of May-June 2002 as validating the correctness of their hypothesis. In spite of Pakistani provocations, as these thinkers surmise, India chose not to retaliate across the Line of Control or cross the international boundary.

PAKISTAN'S FIRST STRIKE OPTION

In order to maintain 'strategic balance' Pakistan taking note of India's overwhelming superiority in conventional arms and manpower may be tempted to go in for rapid escalation with a first strike option. Pakistan is very likely to exercise this option to counter India should the latter pose a serious and credible

¹² Pugwash Meeting No.279, Kanti Bajpai; 'No First Use of Nuclear Weapons', available at www.pugwash.org/reports/nw/bajpai.htm.

threat to Pakistan's territorial integrity leading to its dismemberment and further fragmentation.¹³ Pakistan's President Pervez Musharraf while proclaiming to be in full control of his nation's strategic assets did not hesitate to threaten India to use nuclear weapons in the event of latter violating the "Line of Control or the international border."¹⁴ In this context, it is worth mentioning the comments made by General Khalid Kidwai, Head of the Strategic Plan Division of the Pakistan's Army.

"Nuclear weapons are aimed solely at India. In case, deterrence fails, they will be used, if,

- a. India attacks Pakistan and conquer a large part of its territory(space threshold)
- b. India destroys a large part either of its land or air forces(military threshold)
- c. India proceeds to the economic strangling of Pakistan(economic threshold)

India pushes Pakistan into political destabilization or creates a large internal subversion in Pakistan (domestic destabilization)"¹⁵

Pakistan, however, is acutely aware of profound asymmetry in military balance in South Asia. Even Pakistan resorting to a limited war with salami slicing tactics have the potential of backfire. In the words of General Jehangir Karamat, a former Chief of Army of Pakistan, "Pakistan accepts the imbalance inherent in the equation with India and will not seek to match capabilities. Pakistan, will, therefore, modernize and upgrade its military power in carefully selected areas so that its deterrent and defense capability are not degraded and it never faces a scenario of overwhelming strategic superiority from India. This deterrence is the best guarantee of stability because an unacceptable imbalance can have serious implications."¹⁶ According to Zafar Iqbal Cheema, Pakistan's deterrence can be further augmented by its decision to assemble rapidly a small nuclear force, to diversify weapons by using designs that rely on both uranium and plutonium, to develop wide ranging missile programs, and to take steps to miniaturise nuclear

¹³ 'India's Nuclear Command to be in place', *The Times of India*, New Delhi, India, May 23, 2002.

¹⁴ 'Pakistan's Nuclear Gamble: A Deadly Ploy', Institute of Peace and Conflict Studies, January 17, 2003, New Delhi, available at www.ipcs.org.

¹⁵ Lieutenant General Sardar Lodhi, F.S; (Retd; Pakistan Army). 'Pakistan's Nuclear Doctrine', *Pakistan Defense Journal*, 1999. See, also, Brigadier Ismat, Saeed; (Retd; Pakistan Army), 'Strategy for Total Defense: A Conceptual Nuclear Doctrine', *Pakistan Defense Journal*, March 2000, also, See, Zafar Iqbal Cheema; 'Pakistan's Nuclear Use Doctrine and Command and Control' in Peter R. Lavoy, Scott D. Sagan, and James J. Wirtz. *Planning the Unthinkable: How New Powers Will Use Nuclear, Biological, And Chemical Weapons*, London: Cornell University Press, 2000.

¹⁶ General Jehangir Karamat; 'South Asian Stability- A Pakistan Perspective', Pugwash Meeting No.277, Pugwash Group on South Asian Security, Geneva, Switzerland, November 1-3, 2002.

warheads.¹⁷ To supplement this line of thinking, Zafar Nawaz Jaspal emphasizes more on capability and less on the number of warheads. According to him, “In the present strategic scenario, Pakistan possesses enough strategic weaponry.... to provide it with a minimum nuclear deterrence. The basis of this perception is that in nuclear deterrence, parity between opponents is not based on numerical equality of the number of nuclear delivery systems, or of the number of warheads or in the yield of megatons available to each opponent. Parity requires assured destruction capability.”¹⁸

Pakistan’s interest in first use may in part be supported by a calculation that there are first uses of nuclear weapons against India that would not necessarily invite nuclear retaliation. Stephen P. Cohen, an internationally renowned security analyst, suggests that the Pakistani army has conceived of an escalation ladder.¹⁹ Four of these possible scenarios involve the threat of first use or actual first use:

- Private and public warnings to India not to move its forces threateningly
- A demonstration explosion on Pakistani territory to deter India from a conventional attack
- The use of a “few” nuclear weapons on Pakistani territory against intruding Indian forces
- Nuclear strikes against “critical” Indian military targets, preferably in areas with low population and without much by way of infrastructure.

Of these four, according to Cohen, the first two could well avoid Indian retaliation altogether since they would be carried out inside Pakistan and would not target Indian assets. The second two, Pakistani planners might calculate, would be more provocative but might still not cause India to unleash a full scale retaliatory strike.

In this context, Shireen Mazari argues that, “the first generation of nuclear weapons that Pakistan would deploy would have large CEP (circular error probability)-that is, would not be too accurate, therefore, at least initially Pakistan would have to evolve a counter-value strategy: That is, targeting, Indian economic, leadership and population centers rather than hardened military targets.”²⁰

¹⁷ Cheema, Zafar Iqbal; ‘Pakistan’s Nuclear Use Doctrine and Command and Control’, in Peter R.Lavoy, Scot D.Sagan and James J.Wirtz (eds), *Planning the Unthinkable: How New Powers will Use Nuclear, Biological, Chemical Weapons*. London: Cornell University Press, 2000.

¹⁸ Jaspal, Zafar Nawaz; ‘Reassessing Pakistan’s Nuclear Strategy’, available at <http://www.defencejournal.com/2001/july/reaassening.htm>.

¹⁹ Cohen, Stephen P; *The Pakistan Army*, Karachi: Oxford University Press, 1998, pp.177-79.

²⁰ ‘Formulating a Rational Strategic Doctrine’, 1999, a paper available on the website of the Pakistan institute of Air Defence Studies, <http://www.piads.com.pk/users/piads/mazari3html>.

Mirza Aslam Beg, on the issue of Pakistan's nuclear option, says "the strategy of deterrence, through flexible response is applicable, based on minimum number of weapons. What comprises minimal nuclear deterrence, is a national issue, a function of the political and military judgment, related to adversary's capability."²¹

On the assured nature of Pakistan's nuclear capability, there are two divergent views. Lt.Gen Asad Durrani states, "neither of us relishes the prospect of ever using them, especially when the other side could match the response. India could consider taking out our nuclear arsenal, to deny us its use- in practice, it is an extremely risky proposition. Even on odd weapon that survived the so-called 'first strike', could cause irreparable damage."²² On the other hand, Ayesha Siddiq-Agha argues that "the idea is to ensure that in case of hostilities, Islamabad can manage to deliver two to three nuclear weapons to the adversary's territory. For the time being, this would be achieved with land-based missiles."²³ In the same vein, Ejaz Haidar considers "Pakistan is in a better position to challenge India through low intensity conflict. This meant that India could now be denied the luxury of expanding the conflict and capitalizing on the conventional symmetries."²⁴

VIABILITY OF LIMITED WAR

Some analysts have raised specter of limited war in the context of India and Pakistan going nuclear due to miscalculation and misperception. Even limited war, in conventional sense, between India and Pakistan can rapidly escalate in to nuclear conflict. Traditionally, a limited war is likely to have the following key features.

1. It is likely to be limited in a geographical sense, although in terms of numbers of personnel involved, types of weapons used and duration of conflict, it might be unlimited in scope and actual use.
2. It is also likely to be limited in terms of its objectives within a strategic space using calibrated use of force, i.e., between initiating an armed conflict and an all-out war.
3. It may be limited from the perspectives of the initiator of the conflict, though this may not necessarily be the case with the defender.

²¹ 'Deterrence, Defence and Development', 2001, available at <http://www.piads.com.pk/users/piads/beg2.html>.

²² 'Doctrinal Doublespeak', Paper presented at Pugwash Meeting no.280, *Avoiding an India-Pakistan Nuclear Confrontation*, Lahore, Pakistan, March 11-12, 2003, available at: <http://www.pugwash.org/reports/rc/sa/march2003/pakistan2003-durrani.htm>.

²³ Siddiq-Agha, Ayesha. 'Nuclear Navies', *Bulletin of Atomic Scientists*, Vol.56, No.5, 2000.

²⁴ Haidar, Ejaz. 'Stable Deterrence and Flawed Pakistani Nuclear Strategy', *The Friday Times*, February 2, 2002.

However, four factors can turn any conventional conflict, however, 'limited' in nature, in to acquiring a nuclear dimension.²⁵

- a. The politico-military objectives which India considers limited, might be deemed unlimited and unacceptable by Pakistan. Islamabad plans to use nuclear weapons in the event of a deep military offensive by India. How 'deep' would be deep enough for India to obtain its objective, and how 'deep' would be too much for Pakistan to absorb, is vague and unclear and will always remain so. Issue of extent of loss of territory, image, legitimacy, are important.
- b. Pakistan's military has shown a greater inclination towards a possible use of nuclear weapon. In Pakistan, nuclear command and control are exclusively in the hands of the military. Faced with significant conventional asymmetry and seeming evidence of a conventional attack by India, Pakistan's decision makers may be tempted to threaten the first use of nuclear weapons.
- c. In the case of India and Pakistan, inadequate command and control structures, deficient early warning arrangements and perceptions about a doubtful capacity to launch a retaliatory "second strike" send mixed signals which enhance the risk of a nuclear exchange.
- d. A possible reappraisal of India's operational doctrine can further encourage Pakistan to take recourse to atomic weapons even in conventional warfare.

In this context, it is worth noting, analyst Bharat Karnad's 'Sialkot Grab' published in the inaugural issue of *Center for Land Warfare Studies (CLAWS), Army 2020*. Karnad visualizes "India cutting off a thirty mile deep swathe of territory all along the border, threatening Pakistan's center of gravity located in the urban centers at around that depth. His assessment is that this would not entail a nuclear war since it would not threaten Pakistan's survival. Since Indian mechanized forces would be within fallout distance of urban concentrations and Pakistani forces, Pakistan would also be deprived of nuclear targets. Indian deterrence would preclude city busting as an option."²⁶ Karnad's thesis is that success in a nuclear confrontation is predicated on confronting the adversary with impossibly tough choices he cannot risk taking. There are practical problems with the 'Sialkot Grab' scheme of fighting a limited war. The area encompassed in the thirty mile deep stretch would be quite inhospitable like the US finds areas outside its 'green zones' in Iraq. Since it is densely populated, it could lead to several Fallujas. Collateral damage resulting from conventional war would also be considerable, thereby providing the rationale for Pakistan to up the ante. Contrary

²⁵ See, Albright, David; 'Securing Pakistan's Nuclear Weapons Complex', October 2001, www.isis-online/publications/terrorism/stanleypaper.html. Also, see, Landau Network. <http://www.mi.infn.it/~landnet> and cotta@mi.infn.it, see, Sumit Ganguly and Kent Biringer; 'Nuclear Crisis-Stability in South Asia', in Lowell Dittmer, eds, *South Asia's Nuclear Security Dilemma: India, Pakistan, and China*, New York, M.E.Sharpe, 2005, p.32, also see, Rajain Arpit, *ibid*, No.2, p.90.

²⁶ Ahmad, Firdaus; 'Pakistan's Possible Nuclear Game Plan', Institute of Peace and Conflict Studies, New Delhi, Article No.1683, March 28, 2005, available at: www.ipcs.org.

to Karnad's thinking, the Indian flirtation with Pakistan's self-defined nuclear threshold is likely to push the conflict up in the escalatory ladder.²⁷

ISSUE OF NUCLEAR COMMAND AND CONTROL AND HOTLINE

On the crucial issue of nuclear command and control in Pakistan nuclear establishment, the key component is who actually is in charge. According to Lt.Gen (Retd) Sardar F.S.Lodi, the following basic guidelines have to met in this regard.²⁸

- The final orders to use nuclear weapons must come from the highest executive authority in the country
- The decision must be based on a deteriorating military situation after the enemy's conventional attack is likely to break through or has already breached the main defence line.
- In case of a pre-emptive strike, it must be ensured that the enemy was preparing to launch a nuclear attack, which could cripple Pakistan's nuclear ability to strike back.

Some of Lodi's other recommendations are: (a) 'Our standard of communication from the Chief Executive right down to the missile launch pad and the air base concerned must be perfect and not be susceptible to interruption at all times.(b) Intelligence gathering agencies must be able to provide accurate, up-to-date and timely information about enemy's additional troop deployments and likely intentions. (c) Our final decision to employ the nuclear option must be based entirely on the security and integrity of the country, when other conventional means of defence have proved inadequate.(d) Our close friends and allies abroad must be kept abreast of the latest situation on the ground and eventually the urgent requirement to employ nuclear weapons.(e) It must be kept in mind that the nuclear option would be a weapon of last resort which may eventually produce no winners or losers and must therefore be employed with the greatest of care and caution after discussing all the pros and cons of the situation, its impact in the region and beyond and its international ramifications.'²⁹

Another aspect related to Pakistan's nuclear doctrine is the issue of 'Hot Line' that has restarted among the leaders at the highest level in both Islamabad and New Delhi following a 20-year gap in 1997 is in disuse now. Although some movement has been made in this regard during the June 19-20, 2004 meeting at the foreign secretaries level, yet no firm time table been set as to when the Hot Lines might be activated and become operational. According to Pervaiz Hoodbhoy, Professor of Physics at the Quaid-e-Azam University in Islamabad, Pakistan,

²⁷ See, Ibid, No.24.

²⁸ Lodi, Lt.Gen.(Retd) Sardar F.S.; 'Pakistan's Nuclear Doctrine', available at <http://www.defencejournal.com/apr99/pak-nuclear-doctrine.htm>.

²⁹ See, Ibid, No.26.

"Should a nuclear war occur, it may well be that the order is not given by the Chief Executive or the Prime Minister or whoever. That decision may be taken by a Brigadier, who will decide whether you and I live or die. Any missiles fired by India or Pakistan would take four to eight minutes to hit its target. This means both countries are prepared to launch a nuclear strike on the basis of a warning. In a few hundred seconds, the credibility of the warning must be gauged. Is it the blip on the radar screen really a missile? If so, is it, likely to be carrying a nuclear warhead. An alert must then be flashed to the strategic command center. And, if necessary, a launch order transmitted to the missile site."³⁰

It is hoped that in the near future, a decision to activate Hot Line at the highest level be taken as has been done already at the area commander level along the entire stretch of India-Pakistan border.

POSSIBILITY OF THREATS OR DIVERSION OF FISSILE MATERIALS

Like in any nuclear weapon state, multiple vulnerabilities exist in a nuclear weapons complex.³¹ In the case of Pakistan, it is possible that groups or individuals may violate security rules for a variety of reasons, including profit making, settling a vendetta, or religious or ideological motives. Rogue elements may try to gain control over sensitive items for their own use or to transfer these items to another state or to other non-state actors for financial or ideological reasons. A special concern is that Pakistan, as its history suggests, may suffer another military coup at some point of time. A new leadership, in that case, can be expected to place a high priority on seizing the country's nuclear assets.

The threat of theft or diversion of fissile material or nuclear weapons falls into three general areas:

- **Outsider Threat**--The possibility that armed individuals or groups from outside a facility gain access and steal nuclear weapons, weapons components or fissile material.
- **Insider Threat**--The possibility that individuals who work inside the facility will remove fissile material, nuclear weapons, or weapons components without proper authorization.
- **Insider/Outsider Threat**--The possibility that insiders and outsiders conspire together in connivance to obtain fissile materials, weapons, or weapon components.

If Pakistan suffers extreme instability or civil war, additional threats to its strategic nuclear assets are also possible. This may happen, as Muthiah Allagappa

³⁰ Quoted by M.V.Ramana and C.Rammanohar Reddy(ed.); *Prisoners of the Nuclear Dream*, London, Orient Longman, 2003, p.21.

³¹ David Albright, Ibid.15.

comments, due to military's inherent struggle to attain legitimacy and in "military's inability to construct an acceptable political framework for the management of the state, including the acquisition and exercise of state power"³² and in facilitating the emergence of a viable civil society.:

- **Loss of Central Control of Storage Facilities**--Clear lines of communication code and control over weapons, weapons components, and fissile material may be broken or lost entirely.
- **Coup**--In the most extreme case, a coup takes place and the new regime attempts to gain control of the entire nuclear complex. A *The New York Times* report suggested US policy makers envisioning alternatives for Pakistan after Musharraf. Under this scenario, the Vice-Chief of the Army, Ahsan Saleem Hyat, take over from General Musharraf as head of the military and former banker Mohammedmian Soomro installed as president, with General Hyat wielding most of the power.³³ In this context, Sydney J. Freedberg writes, "He is just the latest leader to stand precariously atop Pakistan's three ever-shifting tectonic plates - generals, politicians and mullahs. Sooner, not later, he will lose his footing. To understand what might happen next, it's important to understand the three major power centres at work in Pakistan."³⁴ It is also possible that foreign government(s) may intervene to prevent hostile entity from seizing the strategic nuclear assets.

In the current situation, Pakistan must also increasingly worry that experts from the nuclear complex could steal sensitive information or assist nuclear weapons programs of other countries or terrorist groups. The information could include highly classified nuclear weapons data, exact storage locations of weapons or fissile material, access control arrangements, or other sensitive, operational details about these weapons.

ISSUE OF DISASTER MANAGEMENT

There is no reference in Pakistan's nuclear doctrine as to the appropriate disaster control system should a potential accident does occur. Pakistan, at the present time, does not have anything even close to the capabilities of managing a nuclear disaster, should it occur either from a nuclear first strike or from a retaliatory strike by the adversary.

In a chilling report published by Britain based *NEW SCIENTISTS* in 2002, it was reported that a massive loss of men and materials would occur should a nuclear exchange take place between India and Pakistan. As per this report, "At

³² Alagappa, Muthiah; 'Investigating and Explaining Change', in Muthiah Alagappa (ed.) *Coercion and Governance: The Declining Political Role of the Military in Asia*, Stanford: Stanford University Press, 2001, p.51.

³³ Mazzetti, Mark; 'One Bullet Away from What?'. *The New York Times*, March 11, 2007.

³⁴ Freedberg, Sydney J; "After Musharraf", *National Journal*, December 16, 2006, Vol.38, Issue 50-52, pg.38.

least 2.9 million people would be killed and another 1.4 million severely injured. This report is based on 10 Hiroshima type bombs, 5 in India (Bangalore, Mumbai, Kolkata, New Delhi, Chennai) and 5 in Pakistan (Karachi, Lahore, Faisalabad, Islamabad, Rawalpindi) India side with an estimated 1.5 million dead and 900,000 injured. And, from Pakistan side; 1.2 million dead and 600, 000 injured. If the bomb explodes on the ground instead of in the air, resulting radioactive dust could kill more people. Due to prevailing winds from west to east, India would incur more casualties than Pakistan. This is just ten bombs, which is 1/10th of estimated number of nuclear bombs both countries are believed to have possessed."³⁵

Another report provided even a scarier picture. "Nuclear exchange could kill up to 12 million people at one stroke plus injury up to 7 million. Even a so-called ' limited war' would have cataclysmic effect overhauling hospitals across Asia and requiring vast foreign assistance to battle radioactive contamination, famine and disease. More deaths would occur later caused by urban firestones, ignited by the heat of a nuclear exchange, deaths from longer term radiation, or the disease and starvation expected to spread."³⁶

In this regard, India's Home (Interior) Ministry is currently raising eight battalions to tackle natural disasters and combat nuclear, biological and chemical warfare. In all likelihood, Pakistan is expected to follow India's path in having a National Emergency Response Force battalions so as to be deployed in strategic locations under the supervision of the Director-General of Civil Defense should such consequence management contingencies arise.

PAKISTAN'S CURRENT MISSILE CAPABILITY AND INDIA'S COLD START STRATEGY

According to *Jane Intelligence Review*, Pakistan has nearly completed development of a solid fuel missile that could strike key Indian cities from deep within Pakistan territory through *Ghauri*-series of liquid propelled missiles in an offensive operation and *Shaheen*-series weapons as defensive measures.

On May 24, 2002, (and very recently on July 26, 2007), Pakistan also tested Intermediate Range Ballistic Missile *Hatf V (Ghauri)* missiles that has a range of 1,500 kilometers (1,000 miles) that can hit most populous cities of Northern, Central and Western India. The father of the Pakistan bomb, Dr. A. Q. Khan, in a declaration has asserted that *Ghauri* missiles could "wipe out thrice, all the big cities of India."³⁷ On June 4, 2004, Pakistan also successfully test-fired *Hatf-V* and *Ghauri-1*. In addition to it, Pakistan is now equipped with ballistic missiles like: *Abdali-1*, *Hatf-I*, *Ghaznavi* (SRBM), *Shaheen* series of MRBM(750-2500 km) and *Ghauri* series of MRBMs and IRBMs ranging between 1,300 to 3,500 km. India, on the other hand, on June 13, 2004, has successfully test fired *Brahmos*, the

³⁵ www.sify.net, May 25, 2002. Also, see, *New Scientist*, England, May 24, 2002.

³⁶ "The Day After in India,Pak:12 million dead", *Indian Express*, New Delhi, India, May 28, 2002.

³⁷ See, www.rediff.com, October 5, 2001, also, see, *The Times of India*, New Delhi, November 10, 2003, also, See, *The Times of India*, New Delhi, April 13, 2007.

supersonic cruise missiles that can travel at Mach 2.823 and which has been configured to be launched from either land, ship, sub-marine and aircraft using liquid ramjet technology. Furthermore, India has test fired *Agni-III* longest-range missile successfully on April 12, 2007, which can hit objects from a range of 3000 miles and thus the entire territorial space of Pakistan (in addition to those of China's mega metropolis of Beijing and Shanghai) can be within India's missile range. *Agni-III*'s successful test is likely to put additional pressure on Pakistan's nuclear establishment as the former can claim to have attained minimum credible deterrence and which can form crucial component of India's nuclear doctrine. In coming years, India is also opting for nuclear armed submarines, armed with nuclear-tipped ballistic missiles, for assured and effective second-strike capabilities and nuclear-tipped land-attack cruise missiles (LACMs) to provide India a definitive strategic edge. In addition, India's Armed forces have formulated joint war doctrine to ensure that individual combat capabilities of Army, Navy and Air Force can come together in the event of war. It remains to be seen whether and when Pakistan will match India's cruise missile and related capabilities so as not to provide its rival a strategic edge.

Similarly, India's new *Cold Start* Strategy that became operational with major military exercise *VAJRA SHAKTI* in May 2005 has been of real concern to Pakistan's nuclear establishment. Under the *Cold Start* Strategy, India could retaliate with nuclear weapons if its armed forces were subjected to nuclear, chemical or biological strikes and this could have profound strategic impact on Pakistan's nuclear doctrine. Although *Cold Start* Strategy was in place under the North Atlantic alliance, a similar replication in the South Asian context might have serious implications thus further endangering the strategic environment of the region.

TOWARDS A STRATEGIC RESTRAINT REGIME

Perhaps, what is needed is a level of transparency and credible approach. To Pakistan's credit, at the October 1998 talks at the foreign minister level, Pakistan proposed a framework for what was called a strategic restraint regime.³⁸ The framework included:

- a non-aggression pact;
- the prevention of a nuclear weapons and ballistic missile race;
- risk reduction mechanisms such as nuclear risk reduction centers;
- avoidance of nuclear conflict;
- formalizing moratoria on nuclear testing;

³⁸ Farah Zahra, 'Pakistan's Road to a Minimum Nuclear Deterrent', *Arms Control Today*, Washington, DC, July/August 1999, also, available at http://www.armscontrol.org/act/1999_07-08/fzja99.asp?print.

- non-induction of anti-ballistic missile systems and submarine-launched ballistic missiles; and
- formal nuclear doctrines of minimum deterrent capability.

Pakistan also proposed mutual and balanced reduction of forces in the conventional field. India matched these proposals by offering a framework consisting of:

- no-first-use pledges;
- agreement on preventing nuclear war, including through accidental or unauthorized use of nuclear weapons;
- extension of agreements prohibiting attack against nuclear installations;
- advance notification of ballistic missile tests; and
- verification of nuclear related data exchange.

In this context, Michael Kreppon, South Asia strategist at the Washington DC based Henry Stimson Center has outlined a viable ten key commandments to reduce the risks of nuclear escalation:³⁹

- Don't change or alter the territorial status quo in sensitive areas by use of force
- Avoid nuclear brinkmanship on both sides
- Avoid dangerous and threatening military practice
- Put in place special reassurance measures for ballistic missiles and other nuclear forces
- Implement properly mutual and international treaty obligations, risk-reduction, and confidence-building measures
- Agree on verification arrangements, including intrusive and comprehensive monitoring
- Establish reliable lines of communication, between political leaders and between military leaders

³⁹ For more details on Ten Commandments, see, Michael Kreppon, 'The Stability-Instability Paradox, Misperception, And Escalation Control In South Asia,' *The Henry L. Stimson Center*, May 2003, p. 8.

- Establish conventional and reliable command and control arrangements as well as intelligence-gathering capabilities to know what the other side is up to, especially in a crisis
- Keep working hard on these arrangements. Improve them. Don't take anything for granted
- Hope for plan dumb luck or divine intervention

Along this line, Hassan Askari Rizvi and Rajesh M.Basrur⁴⁰ have suggested eight measures, which in their viewpoint could substantially enhance the safety and security of nuclear facilities in India and Pakistan:

1. Track down the groups and the individuals engaged in violent activities and terrorism
2. Extensive surveillance of the borders and coastlines to contain the movement of goods and people
3. More use of modern technology to enhance the physical protection of nuclear weapons, material and installations
4. Thorough scrutiny of the personnel handling the nuclear programmes of the two countries
5. Acquisition of latest technologies for the transportation of fissile and radioactive materials
6. Highly trained manpower may be employed for the protection of nuclear facilities
7. Extensive coordination network amongst all the set-ups dealing with the nuclear infrastructure and in addition, there should be an independent body to ensure an oversight and accountability
8. Finally, a disaster management body may be established to handle a security alarm systems, and the actual nuclear-terrorist incidents and emergencies

⁴⁰ Hassan Askari Rizvi and Rajesh M. Basrur, *Nuclear Terrorism And South Asia*, Occasional Paper No. 25, Albuquerque, NM: Sandia National Laboratories, February 2003, pp.79.

CONCLUSION

In the shadow of Pakistan's nuclear doctrine lies the perennial issue of Kashmir which is the bone of contention between India and Pakistan since 1947. Since volatility over Kashmir may yet provide a flash point, that possibility may induce both countries to come to a negotiating table and to opt for nuclear deterrence and quick implementation of 'enforceable and verifiable' confidence building measures which may include simultaneous signing of CTBT and other international safeguards and ushering in of citizens diplomacy. The statement made by Gen. Pervez Musharraf on December 18, 2003 to be flexible on Kashmir issue and be ready to bend on his UN Kashmir baggage by keeping aside UN Security Council Resolution is a welcome sign and should be explored further. Elaborating his vision for the resolution of the long tangled Kashmir problem, Musharraf outlined a four-step approach. It involves recognition of the centrality of Kashmir for the settlement of all disputes between India and Pakistan, commencement of a dialogue on that basis, elimination of solutions not acceptable to India, Pakistan and people of Kashmir, and initiating the process for finding a solution acceptable to all parties.⁴¹

Along with it, the following confidence-building measures at the non-military level could be pursued in right earnest.

- Unofficial dialogue through Track-II should be encouraged by the two governments to assist official-level talks between India and Pakistan
- Commerce and trade such as having a Free Trade Agreement, Granting Most Favored Nations status, Open Visa Regime, Evolving a common currency, etc
- Along with Lahore-Amritsar route, bus service between Srinagar and Muzafarabad linking both Indian and Pakistan sides of the Line of Control across the Kashmir valley that began in April 2005 to continue for the foreseeable future.

Similarly, on Siachen glacier along the Kashmir front, the world's highest battlefield, CBM talks could be initiated geared toward demilitarization and firm commitment made by both India and Pakistan to stop aggressive maneuvers, avoid lateral movement of troops on the glacier and declare Siachen as a mountain of peace. In this context, a positive development has taken place on April 6, 2007, when the Indian Defence Secretary and his Pakistan counterpart met in Rawalpindi as part of the fourth round of Composite Dialogue process. Under this ongoing dialogue, Pakistan has softened its stance from total opposition to authentication of troops. It has offered India a package deal under which it (Pakistan) has agreed to the Indian demand but has asked India for a time bound withdrawal of its troops to the pre-conflict positions as a quid-pro-quo.⁴²

⁴¹ See, *Indian Express*, New Delhi, December 19, 2003; also, see, *The Hindu*, Chennai, December 19, 2003.

⁴² See, www.rediff.com, April 6, 2007.

Second, India's ex-foreign minister, Mr.K.Natwar Singh's proposal to evolve and study the feasibility of a common nuclear doctrine between India, Pakistan and China in order to bring peace and stability to the region could be explored further. Third, CBMs and related negotiations including the feasibility of common pipeline between Iran, Pakistan and India for enhanced energy cooperation (that was agreed upon by Prime minister Dr.Manmohan Singh and President Pervez Musharraf in New Delhi on April 16-18, 2005, and again during September 15-16, 2006 in Havana, Cuba at the Non-Alignment Movement summit), could be pursued more aggressively. Another measure that could be tried was a concerted effort on the part of the permanent members of the UN Security Council to act as honest facilitators "to help in ushering a common, strategic dialogue and language on arms control in South Asia"⁴³ and foster open communications among the parties concerned. But then, the concept of nuclear deterrence for two South Asian rival countries with deep rooted historical animosities and regional ambitions might be an uphill task unlike the case of the United States and former Soviet Union during the Cold War years when both the countries stayed broadly within the perimeter of deterrence. With the shaping of nuclear doctrines of Pakistan and India in place, it was hoped a peace constituency could hopefully take firm hold in South Asia in making sure the proactive peace process currently underway between India and Pakistan was irreversible.

Six elements are critical to sustain this process of dialogue.⁴⁴ One, preservation of agreements and CBMs (military and non-military) instituted so far between India and Pakistan. Two, promoting resolution of disputes so that peace process gains momentum into a conflict resolution mode. Three, a problem-solving proactive approach be applied by both sides. Four, principle of reciprocity and goodwill to guide the dialogue process. Five, political contacts sufficiently at high level to the highest level are needed to discuss issues critically and keep the engagement process moving. Six, there is a need to evolve a convergent vision for a future of peace and cooperation in the entire South Asian region. What is more important in this regard is the perception of risk which appear to be only limited regional perceptions of the shared bilateral risks of nuclear war and avoidance of possible catastrophe.⁴⁵ In the short to intermediate term, viable solution(s) has to be evolved for solving the various, bilateral intractable issues so as to have saleability and acceptability by all stakeholders. There is also a compelling need to recalibrate other national strategic priorities - national defense, Kashmir, convert 'trust deficit' into 'trust surplus', etc.⁴⁶ The issue is complicated further by the profound asymmetry between Pakistan's obsession with India in its security thinking and India's focus on a range of security imperatives of which Pakistan is but one.

⁴³ Statement by Ambassador Akram, Munir; Pakistan in the Conference on Disarmament, August 19, 1999, available at <http://www3.itu.int/pakistan/CD-Indian%20Nuclear%20Doctrine-19%20August%201999.htm>.

⁴⁴ See, Maleeha Lodhi, 'Nuclear Cloud over South Asia', *The Times of India*, New Delhi, May 1, 2006.

⁴⁵ See, Shaun Gregory, 'A Formidable Challenge: Nuclear Command and Control in South Asia', *Disarmament Diplomacy*, The Acronym Institute, Issue No.54, February 2001.

⁴⁶ See, Shaikat Aziz's statement, 'Result-oriented Talks must', *The Tribune*, April 4, 2007, www.tribuneindia.com.

BIBLIOGRAPHY

- Alam, Mohammed B, ed. *Constructing Nuclear Strategic Discourse: The South Asian Scene*, New Delhi: India Research Press, 2007.
- _____, ed. *Essays on Nuclear Proliferation*, New Delhi; Vikas Publishing House, 1995.
- _____, *India's Nuclear Policy*, New Delhi: Mittal Publications, 1988
- Albright, David; 'Securing Pakistan's Nuclear Weapons Complex,' October 2001, <http://www.isis-online/publications>.
- Arrow, K; 'The Role of Securities in the Optimal Allocation of Risk-bearing', *Review of Economic Studies*, Vol.31, 1964, p.91-96.
- Behera, Ajay and Joseph C. Mathew; eds; *Pakistan in a Changing Strategic Context*, New Delhi: Knowledge World, 2004.
- Berejikian, Jeffrey, 'A Cognitive Theory of Deterrence,' *Journal of Peace Research*, Vol.39, March 2002.
- Bhutto, Z.A; *The Myth of Independence*, Karachi: Oxford University Press, 1969
- Bodansky, Yossef, 'Pakistan's Nuclear Brinkmanship,' *Freeman Centre for Strategic Studies*, Israel, Available at <http://www.freeman.org>.
- Boettcher II, William A; *Presidential Risk Behaviour in Foreign Policy*, New York: Palgrave Macmillan, 2005.
- Brodie, Bernard; *The Absolute Weapon: Atomic Power and World Order*, New York: Harcourt Brace, 1946.
- Carter, Ashton, et al; *Managing Nuclear Operations*, Washington, DC: The Brookings Institution Press, 1987.
- Cohen, Stephen; *The Pakistan Army*, London: Oxford University Press, 1998
- Datt, Savita; *To Chagai and Beyond: Nuclear Developments in Pakistan*, New Delhi: IK International, 2003.
- Dunn, Lewis; *Controlling the Bomb*, New Haven: Yale University Press, 1982
- De Finetti, B; *Giornale degli Economist e Annali di Economia, Sulla Preferibilita*, Vol.11, 1952.
- Goldgeier, J and Tetlock, P; 'Psychology and International Relations Theory', *Annual Review of Political Science*, Vol.4, 2001, pp.67-92.
- Hagerty, Devin T; *The Consequences of Nuclear Proliferation*, Cambridge: MIT Press, 1998.
- Haqqani, Hussain; *Pakistan: Between Mosque and Military*, Lahore: Vanguard Books, 2005.

- Hashmi, Sohail and Lee Steven (eds.); *Ethics and Weapons of Mass Destruction: Religious and Secular Perspectives*, Cambridge: Cambridge University Press, 2004.
- Hermann, R.K and Fischerkeller, M.P; 'Beyond the Enemy Image and Spiral Model: Cognitive-Strategic Research after the Cold War,' *International Organization*, Vol.49, No.3, 1955, pp.415-50.
- Hymans, Jacques; *The Psychology of Nuclear Proliferation: Identity, Emotions, and Foreign Policy*, New York: NY, Cambridge University Press, 2006.
- Jervis, Robert; 'The Political Implications of Loss Aversion', *Political Psychology*, Vol.13, 1992, p.187-204.
- Jones, Rodney W; 'Pakistan's Nuclear Posture: Quest for Assured Nuclear Deterrence – A Conjecture,' *Spotlight on Regional Affairs*, Islamabad: Institute of Regional Studies, Vol.19, No.1, January 2000.
- Kanwal, Gurmeet; 'Pakistan's Nuclear Threshold and India's Options', *Air Power Journal*, Vol.1, No.1, Monsoon 2004.
- Karnad, Bharat; *Nuclear Weapons and Indian Security: The Realist Foundations of Strategy*, New Delhi: MacMillan India, 2005.
- Kayathwal, Mukesh Kumar; *Security and Foreign Policy in South Asia*, Jaipur: Pointer Publishers, 1999.
- Khilnani, R.K; *Nuclearisation in South Asia*, New Delhi: Commonwealth Publishers, 2000.
- Kumaraswamy, P.R; ed. *Security Beyond Survival*, New Delhi: Sage Publications, 2004.
- McDermott, R; *Risk-taking in International Politics*, Ann Arbor: University of Michigan Press, 1998.
- Mercer, J; 'Prospect Theory and Political Science,' *Annual Review of Political Science*, Vol.8, 2005, pp.1-21.
- Morgan, Patrick; *Deterrence: A Conceptual Analysis*, Beverly Hills, California, Sage Publications, 1983.
- Morrow, J; 'On the Theoretical Basis of a Measure of National Risk Attitudes', *International Studies Quarterly*, Vol.31, 1987, p.423-443.
- Pattanaik, Smruti; 'Pakistan's Nuclear Strategy,' *Strategic Analysis*, Vol. 27, No.1, January-March 2003.
- Perkovich, George; *India's Nuclear Bomb*, Berkeley: University of California Press, 2000.

- Pratt, J; 'Risk Aversion in the Small and in the Large', *Econometrica*, Vol.32, 1964, p.122-136.
- Rajagopalan, Rajesh; *Second Strike: Arguments About Nuclear War in South Asia*, New Delhi: Penguin, 2005.
- Richardson, R; 'Avoiding and Incurring Losses: Decision Making in the Suez Crisis', *International Journal*, Vol.47, 1992, p.427-460.
- Rudentsky, Artem; 'Understanding Nuclear Pakistan: Global, Regional and Domestic Dimensions,' *World Affairs*, Vol.9, No.3, Autumn 2005.
- Russett, Bruce; *The Prisoners of Insecurity: Nuclear Deterrence, the Arms Race, and Arms Control*, San Francisco: W.H.Freeman and Co, 1983.
- Schelling, Thomas; *The Strategy of Conflict*, New York: Oxford University Press, 1963.
- Sethi, Manpreet; 'Pakistan's Nuclear Doctrine and Strategy,' *Air Power Journal*, Vol.2, No.3, Monsoon 2007 (July-September).
- Shahi, Agha; 'Command and Control of Nuclear Weapons in South Asia,' *Strategic Issues*, March 2000.
- Sinha, P.B and R.R.Subramanian; *Nuclear Pakistan: Atomic Threat to South Asia*, New Delhi: Vision Books, 1980.
- Snyder, Glenn; *Deterrence and Defense*, Princeton; Princeton University Press, 1961.
- Sridharan,E, ed; *India-Pak Undeterred Deterrence Theory and the Conflict*, New Delhi: Routledge, 2006.
- Sundarji, General K; 'Nuclear Deterrence Doctrine for India', *Trishul*, Vol.5, No.2, December 1992.
- Tellis, Ashley; *India's Emerging Nuclear Posture*, Santa Monica, California: Rand Corporation, 2001.
- Weissman, Steve and Herbert Krosney; *The Islamic Bomb*, New York: Times Books, 1981.