

# **Nuclear Learning in South Asia: The Levels of Analysis**

Rabia Akhtar and Debak Das

**2015**

**Regional Centre for Strategic Studies  
Colombo, Sri Lanka**

**Section I**  
**Literature Review**

## Theoretical Interpretations of Nuclear Learning

South Asia, often referred to as a ‘nuclear flashpoint’, is approaching 16 years of overt nuclearisation. India and Pakistan share a troubled and unsettled past since their independence in 1947, with the Kashmir conflict at its core, constantly threatening crisis and deterrence stability<sup>1</sup> in the region. Both states faced their first nuclear crisis in 1999 in Kargil, within a year of their overt nuclearisation and in 2001–2 the nuclear standoff between the two countries raised alarming prospects of another limited war under the nuclear umbrella. The international community has been quick to provide third-party mediation during the crises to alleviate tensions between the two states but establishment of independent bilateral mechanisms for any future crisis prevention and management still remains the biggest challenge in this hostile neighbourhood. It is in this perspective that an evaluation of South Asian nuclear learning over the past 15 years of nuclearisation needs to be conducted to understand what factors will contribute to establish long-lasting strategic stability in the region. But before we examine *how* and *what* India and Pakistan have learned since their nuclearisation in 1998, it is instructive to understand *why* countries like India and Pakistan acquired nuclear weapons in the first place.

The taboo surrounding the non-use of nuclear weapons has deep roots in Western political and strategic cultural traditions since their horrific first and only use in 1945 (Tannenwald 2005: 2007) and it is only pertinent to ask: did South Asian atomic aspirants learn nothing from history? Some key observations of the post-war nuclear order were instructive in influencing nuclear aspirants in South Asia and a systemic understanding of their motivations provides explanations for their nuclear behaviour at the sub-systemic level (Kapur 1988; Lake 1997; Paul 1998; Waltz 1979).

- 1) The US, the then Soviet Union, the UK, France and China were the only five established and legitimate members of the nuclear club while the rest of the world constituted the non-nuclear club by default.
- 2) These five powers (P-5) closed entry into the nuclear club by discouraging further horizontal nuclear proliferation through establishing the non-proliferation regime only after benefiting from proliferation and acquiring nuclear weapons themselves.
- 3) The nuclear non-proliferation regime, specifically the Nuclear Non-Proliferation Treaty (NPT) was discriminatory since it acknowledged the P-5 but did not recognise new nuclear nations and thus attempted to ‘freeze power relations in international politics indefinitely’ (Paul 1998: 10).
- 4) In the course of the Cold War between the US and the then Soviet Union, no direct military confrontation took place once mutual nuclear deterrence was established between the two. As perhaps the greatest anomaly of modern history, no all-out war between major powers has erupted in the past 67 years. Thus, the balance of terror created by nuclear weapons has been responsible for the *nuclear peace* that has ensued over the years (Snyder 1965; Waltz 1995).<sup>2</sup>
- 5) Nuclear weapons provided the P-5 special powers and privileges to have a decisive say in global affairs, which were not available to non-nuclear states. Consequently, new nuclear states learned that nuclear weapons were also a currency of power and prestige.

South Asian nuclear aspirants rationalised their pursuit of nuclear weapons given these inconsistencies at the systemic level.

The literature on nuclear proliferation is theoretically rich and diverse in its explanations for motivations and restraint exhibited by states in the international system. But no single theory holds the explanatory power to explain the rationale for nuclear proliferation or the successes of non-proliferation where it applies. This section attempts to survey the existing IR and foreign policy interpretations to understand the concept of nuclear learning by surveying existing literature on theories of nuclear proliferation. In its most simplistic reading, the literature on motivations and consequences of nuclear proliferation is divided into two camps: the nuclear optimists, and the nuclear pessimists. Neo-Realists, led by Kenneth Waltz, are the leading proponents of nuclear optimism, and organisational theorists like Scott Sagan lead the arguments for nuclear pessimism.

<sup>1</sup> We operationalise crisis and deterrence stability as two pillars of strategic stability. *Crisis stability* will prevail if both countries have bilateral institutionalised mechanisms to *prevent* crisis from taking place. *Deterrence stability* will prevail when both sides ensure credibility of their deterrence and refrain from developing technologies that have the potential to neutralise their opponent’s deterrence capability.

<sup>2</sup> The only two departures that challenge this norm are the Sino-Soviet conflict of 1969, and the Kargil War in 1999.

The optimists believe that the structure of the international system is inherently anarchic which provides states opportunities to rely on themselves on the basis of self-help and thus create security structures to secure themselves against external threats. The Realist school of thought finds explanations for systemic stability in rational deterrence theory (Kauffman 1954; Schelling 1963; Snyder 1961). Acquisition of second-strike capability by both sides is enough to create deterrence through credible mutually assured destruction (MAD) thus leading to stability in relations with diminishing prospects of war between the two states. This naturally leads to the desire by states to acquire nuclear weapons so that the cost of fighting a prolonged conventional war can be avoided. Therefore, the spread of nuclear weapons enhances and ensures the stability of the international system (Karl 1996; Lavoy 1994; Mearshimer 1993; Waltz 1981; Weltman 1980). The nuclear optimists believe that new nuclear states are more careful about their security structures than the established nuclear powers because they cannot afford to be complacent about their security structures. Wherever nuclear weapons exist, large-scale interstate wars have ceased to exist, thus adding to regional and international stability (Mesquita and Riker 1982). The nuclear optimists believe that new nuclear states will build small nuclear arsenals since the purpose is deterrence and the cost of huge arsenals does not justify existent threats. Furthermore, small arsenals can be kept safe and are not vulnerable to threats. One of the most ardent critics of the Waltzian optimism, Sagan (1994) grounds his critiques in organisational theory and suggests that the spread of nuclear weapons is destabilising for international security especially with the rise in the number of new nuclear states. His main analysis is drawn from the mechanisms adopted by the US military to prevent nuclear accidents and the difficulties in maintaining such a security regime even in the most advanced and technologically sound infrastructures that exists today. Thus, the pessimists believe that nuclear security establishments in new nuclear states will not be able to acquire such a level of sophistication in command and control practices and are prone to nuclear accidents or inadvertent use of nuclear weapons. This makes them dangerous actors with weak security structures detrimental for the stability of the international system (Feaver 1992; Jervis 1976; Miller 1993).

Many scholars have criticised the rational deterrence theory in an attempt to move away from rationalist explanations of proliferation. One major criticism of the rational deterrence theory comes from study of those states that are part of the anarchic international system yet have voluntarily given up the option of developing nuclear weapons. Rational deterrence theory fails to account for the restraint exhibited by these states that had strong incentives to develop nuclear weapons but instead chose to join the nuclear non-proliferation regime. In this regard, Realist explanations do not reflect on sources of nuclear restraint. There are many considerations for a state informing its decision to acquire nuclear weapons. Some of these constraints include: domestic public opinion for or against nuclear weapons, the cost of nuclear development, and various international constraints like their alliance structures or membership in international organisations (Reiss 1988). Thus, broader domestic and foreign policy contexts need to be incorporated in any analysis of nuclear proliferation and incentives and disincentives for states to develop nuclear weapons.

The pessimists believe that nuclear proliferation enhances the fears of accidental nuclear war or inadvertent use of nuclear weapons. For the pessimists, nuclear peace between the US and the Soviet Union cannot be transposed for new nuclear nations. The geostrategic character of the Cold War was unique and the bipolar system of alliances and geographical distance between the two added to the stability of the international system during the Cold War. The nuclear pessimists challenge the stability between the Sino-Indian relations and Indo-Pak relations after the establishment of nuclear deterrence in the region based on geographical proximity and the nature of protracted conflicts in the region. The most important contribution in this regard is their criticism of the crisis-stability argument, the dangers of accidental war, unintended use of nuclear weapons, and the issues of command and control for new nuclear states (Dunn 1982, 1991; Kaiser 1989; Sagan 1994).

Efforts to curb nuclear proliferation through the NPT in 1970 achieved a major breakthrough and today NPT has become a near-universal treaty with the exception of Israel, India, and Pakistan as original NPT hold-out states, and North Korea as the only NPT state till date to have withdrawn from treaty membership in 2003. Despite the successes of the non-proliferation regime, non-nuclear club members continued to observe that nuclear weapons remained an essential component of the big powers' (P-5: USA, Russia, China, UK and France) national security strategies. India and Pakistan conducted nuclear tests in 1998 and became nuclear-armed states (though still officially outside the nuclear club), while Israel maintains an untested ambiguous nuclear status. For India, Pakistan, Israel and North Korea, nuclear optimism and pessimism provide an explanation for their behaviour and learning patterns. If states are unitary actors in the international system and they maximise their power in order to compete in that system which is inherently anarchic then the pursuit of acquisition of nuclear weapons is a rational response to the pressures that emanate from such a competition. India and Pakistan learned this as their first lesson, which motivated them to acquire nuclear weapons.

Recent scholarship on Indian and Pakistani nuclear motivations, nuclear postures and doctrines and strategic stability is divided on examining the South Asian case as purely optimistic or pessimistic. Nuclear weapons are considered to be a source of strategic stability in the region by both states especially given that they have survived crisis situations in which overt nuclear signalling took place by both sides (Basrur 2008; Hagerty 1998; Tellis 2001). Decision makers in both countries view the nature of established mutual deterrence as a major source of stability in the region (Ganguly 2008). Both countries have adopted the doctrine of credible minimum deterrence, which relies on use of 'minimum' numbers of nuclear weapons to retaliate with the promise of 'assured destruction' by Pakistan and 'massive retaliation' by India after surviving the first strike (Cheema 2000; Narang 2009). Both states maintain flexible approaches to nuclear deterrence and weapons deployment, which can be adjusted to future requirements given their threat perceptions, which remains a dynamic concept (Khan 2012; Salik 2009).

The impact of Indo-Pak nuclear weapons on crises and deterrence stability in the region has been viewed as both optimistic and pessimistic. South Asian nuclear optimists view nuclear weapons as a source of stability between the two countries based on 'fear' of mutual destruction given their close geographical proximity. But for pessimists, nuclear weapons have encouraged risk-taking behaviour in both countries whereby they continue to develop offensive conventional capabilities and increasing their nuclear arsenals beyond minimum deterrence requirements (Ganguly and Kapur 2010; Kapur 2008). The stability-instability paradox is operational in South Asia and has led pessimist observers to suggest that deterrence is likely to break down in any future conflict between India and Pakistan (Krepon 2003; Snyder 1965). While mutual deterrence adds to strategic stability in the region, possession of nuclear weapons also encourages both countries to engage in risk-taking behaviour and explore possibilities of limited war under the nuclear umbrella, which in turn produces instability (Chari 2001; Raghavan 2001).

In his 1987 article on nuclear learning, Joseph Nye asked an important question in the context of US–Soviet security regimes, 'Will stable nuclear deterrence last forever?' and he feared that, 'human fallibility suggests that it will not' (Nye 1987: 371). This question is still pertinent today in the India–Pakistan context, but the answer does not necessarily need to be pessimistic. The answer will depend on what nuclear learning has been acquired by both countries to determine whether durable deterrence structures can emerge in South Asia. While both countries are aware of each other's conventional war fighting capabilities, the exact nature of their nuclear weapons capability, ballistic and cruise missile inventories, nuclear postures, strategic doctrines of nuclear use coupled with the ambiguity enshrined in the inherent concept of deterrence makes nuclear learning all the more challenging for both countries.

Nuclear learning does not automatically translate into nuclear wisdom, therefore, this paper adopts Jack Levy's value-free definition of learning as: 'change of beliefs, the degree of confidence in one's beliefs, or skills as a result of the observation and interpretation of experience' (Levy 1994: 311). According to Nye, 'the difference in political and military cultures means divergent prior beliefs tend to lead each country to learn different lessons from new information' (Nye 1987: 382). In the case of India and Pakistan, each with its own political and military peculiarities, it is critical to examine whether common lessons are learnt despite prior beliefs.

Research on South Asian nuclear learning is an ongoing process. At a joint experts meeting, Indian, Pakistani and American scholars evaluated Indo-Pak nuclear learning in four areas: 'nuclear decision-making, nuclear doctrine, command and control and nuclear deterrence' (Davis 2009), and concluded that both countries have learnt different lessons in these areas due to incomplete information and lack of shared risk assessments. An appraisal about their learning revealed a pessimistic reading at various levels by the joint working group. (1) There is a difference in nuclear decision-making elite in both countries, which results in different perceptions about their own and each other's nuclear capabilities. (2) This difference in perception shapes their individual strategic outlook and determines requirements of their deterrence. (3) Though both believe that mutual nuclear deterrence is operational, its contribution to strategic stability in the region is threatened by their continuous attempts to achieve parity through development of a nuclear triad and introduction of offensive and defensive weapons systems (tactical nuclear weapons or TNWs, and anti-ballistic missile systems). (4) While both sides have institutionalised their command and control system, reliance on the US for crisis management is likely to continue.

The nature of learning, whether it is individual or institutional, produces different cultures of interaction that are important in understanding the nature of any relationship. The language of learning in different states is dissimilar. This leads to inherent differences in the perceptions of concepts like *nuclear deterrence* and *strategic stability* that are relics of the Cold War. Waltz (2002) argues that any nuclear relationship is inherently the same since nuclear weapons have an independent logic of their own which govern any nuclear relationship, irrespective of the disposition of the government in power. He, thus, asserts that any differences in the states involved, or the histories of the conflict, or the differences in the distance of the parties involved, are immaterial to any analysis pertaining to nuclear weapons. This research will argue that the nuclear relationship between India and Pakistan is incompatible with that of the US and the Soviet Union during the Cold War and will attempt to explore alternatives to such

reductive reasoning. In terms of geopolitics, the peculiar identities of the two states, the nature of the conflict between the parties involved and the rationality applied are unique to the South Asian case. Therefore, while there is a theoretical possibility of learning from the US–Soviet experiences, the unique nature of the South Asian nuclear relationship precludes such an analogy from being drawn.

The next chapter in this section will survey the literature on four South Asian crises with nuclear overtones: India's Operation Brasstacks 1986–7; the Kashmir Crisis 1990; Kargil 1999; the 2001–2 standoff; and a review of the 2008 Mumbai attack to understand the dynamics that separate the South Asian case from that of the Cold War and propose why *unlearning* needs to take place before any new lessons from the past 15 years can be learnt.

## **India and Pakistan under the Shadow of Crises**

In the years leading up to nuclearisation, both India and Pakistan were embroiled in two major crises with nuclear undertones based on their mutual existential deterrence at the time, the Brasstacks (1986–7), and the Compound (Kashmir) crisis (1990). India and Pakistan are now in their sixteenth year of overt nuclearisation. During this period, they have faced each other in two major crises both having serious potential of spiralling from conventional to nuclear levels in a quick shift of events: Kargil (1999), and the 2001–2 standoff. The only reason these crises did not cross conventional and nuclear thresholds was due to the presence of established mutual nuclear deterrence, bilateral diplomacy, and effective third-party interventions. The fifth crisis ensued from terrorist attacks in Mumbai in 2008 but it did not result in conventional military mobilisation by either side, and, thus, is in a distinct category. These five crises have been rigorously analysed by Indian, Pakistani and American scholars in the broader context of mutual hostility between the two countries rooted in the protracted conflict in Kashmir. What did India and Pakistan learn from the two crises pre-nuclearisation? Did overt nuclearisation in 1998 encourage both states to explore limited war strategies under the nuclear umbrella? What lessons, if any, were learned from the two crises pre-nuclearisation and the two post-nuclearisation? In order to explore what nuclear learning took place, it is instructive to briefly visit the scholarship on these five crises and see if a pattern can be generated.

### **Operation Brasstacks (1986–7)**

India and Pakistan have fought three wars since their independence from the British colonial rule: 1948, 1965, and 1971. The years leading up to the Brasstacks crisis witnessed a politically charged environment between the two countries where memories of the 1971 war (which had resulted in the dismemberment of Pakistan leading to the creation of Bangladesh) were still fresh on both sides of the border. India had concerns about Pakistan's nuclear ambitions and its alleged support for the former's Sikh community, which was demanding an independent state of Khalistan in Indian Punjab. Pakistan on the other hand accused India of similar meddling on its side of the border, allegedly backing a separatist movement in the southern province of Sindh and a planned attempt to destroy its nuclear facilities. Realising the potential consequences of such a misadventure, both countries orally agreed to a non-attack pact on each other's nuclear facilities in 1985, but it was not signed into a formal agreement until December 1988. Amidst this environment of deep mutual mistrust, India planned its largest military exercise in Rajasthan, 60–80 km away from the India–Pakistan border.

There is consensus amongst scholars that the Brasstacks exercise was the brainchild of the then Indian Army Chief, Gen Krishnaswami Sundarji who wanted to test the readiness and robustness of the Indian Armed Forces in an east-west axis through large-scale exercises. However, whether the Indian military and political establishment were fully aware of the strategic and political consequences of these exercises, is disputed in literature (Bajpai et al. 1995; Ganguly and Hagerty 2005; Chari, Cheema and Cohen 2007). According to some Indian military planners interviewed by Chari et al. (2007: 46), Brasstacks was 'designed to counter the support Pakistan had given the Sikh separatist movement in Indian Punjab' and by war gaming Indian operational advantages across Pakistan's border the initial intention was to 'lure Pakistan into a first move via deception and misdirection and then unleash a massive attack in response'. On Pakistan's side, some strategists interviewed by Chari et al. (2007) ascertained three strategic motives behind these exercises:

- (1) adventurists in the Indian army hoped some incident along the border would create an opportunity to use the assembled forces for an attack on Pakistan;
- (2) India was acting at the behest of the Soviet Union, then engaged in a conflict in Afghanistan; and
- (3) at a minimum, India wanted to cut Sindh off from Punjab.

However, some Pakistani civilian and military officials believed that Indian objectives were far simpler, aiming to 'intimidate Pakistan by its sheer scale and to test new concepts of enhanced mobilization by the mechanisation of infantry' (Chari et al. 2007: 48).

The Indian military exercises in Rajasthan coincided with Pakistan's annual military exercises in the Bahawalpur–Marot region by the Army Reserve South (ARS) also across the India–Pakistan border in Rajasthan and the Ravi–Chenab corridor by the Army Reserve North (ARN) in late November–December 1986. Although Pakistan did attempt to ascertain the exact nature and scope of Indian military exercises through the hotline that had been set up between the Directors General of Military Operations (DGMOs) of India and Pakistan, not much information from

their Indian counterpart was shared (Chari et al. 2007: 48–9). According to Chari et al. (2007: 50), ‘in the Brasstacks case, both sides considered information shared through the hotline to be unreliable’, thus making the need to communicate during the crisis ‘the first casualty’. As the Brasstacks exercise entered its fourth and final phase, Pakistan military positioned its forces in a manner which would allow it to ‘strike at two targets simultaneously: one in Kashmir and the other in the Punjab, where it could cut off Amritsar and Ferozpur and thus deny India access to Kashmir’. Furthermore, this could isolate Indian troops ‘in strategic areas and a show of the force on the border could generate confidence for the supporters of Khalistan’ (Chari et al. 2007: 54). The crisis evolved when India took counter defensive measures against Pakistan’s defensive moves by ‘moving its troops into forward defensive positions along the border, reinforcing them through a massive air-lift, but all the while seeking a highly publicized modus vivendi with Pakistan’ (Chari et al. 2007: 55).

There has been much debate on the ‘nuclear dimension’ of the Brasstacks crisis which itself was not an overtly nuclear crisis. The de-escalation of the crisis unfolded rapidly and the first phase of withdrawal of forces on both sides of the border was completed by February 1987. In a widely quoted episode, Indian journalist Kuldip Nayar was given an interview by A Q Khan, a Pakistani nuclear scientist and a key figure in Pakistan’s nuclear establishment on 28 January 1987 asserting that ‘Pakistan has enriched uranium to test a nuclear weapon with laboratory simulations’ (Ganguly and Hagerty 2005: 76). However, this interview was published in March by the *Observer*, a month after the hostilities between the two countries had ended and the crisis averted due to successful bilateral diplomatic manoeuvres. According to some Indian decision makers interviewed by Chari et al. (2007: 67), this interview was a misplaced attempt of nuclear signalling by Pakistan because it failed to impact the outcome of the crisis and even when it was received ‘it was not taken seriously because of the source of this nuclear signalling and the means by which it was conveyed’. In a conversation with Chari et al. Gen K. Sundarji remarked that, ‘this was India’s last chance to defeat Pakistan by conventional arms before the latter acquired a nuclear deterrent that would make all-out war impossibly dangerous for both sides’ (Chari et al. 2007: 67). It is widely believed that though the Brasstacks crisis did not have a nuclear dimension, it did, however, provide motivation for both countries to accelerate the development of their nuclear weapons programmes for credible nuclear signalling in the future (Ganguly and Hagerty, 2005).

Bajpai et al. (1995) in their study of the Brasstacks crisis proposed leadership lessons for crisis behaviour, which are still valuable today. The authors stress the importance of establishing ‘direct political-level contact with the other side; use of symbolic actions to prevent war hysteria; establishment of crisis management institutions in both countries; utilizing multiple sources of intelligence; and exploitation of peace dividends to normalise relations’ (Bajpai et al.: 111–2). Chari et al. (2007) recommend similar lessons in their analysis of the Brasstacks crisis. The authors emphasise the importance of ‘open lines of communication during the crisis’ between adversaries, establishment of confidence building measures (CBMs) such as hotlines between DGMOs and their political counterparts across the border, and the establishment of crisis management centres in both countries (Chari et al.: 78–9). Unfortunately, three years after Brasstacks, India and Pakistan managed to get embroiled in another crisis in 1990 over Kashmir, with nuclear overtones, suggesting that perhaps the lessons from Brasstacks were not learned and if learned, forgotten much too soon.

### **The Kashmir Crisis (1990)**

It has been 23 years since the 1990 crisis between India and Pakistan yet the jury is still out about the nature and the nuclear dimension of the crisis. In order to understand the complex dynamics of the 1990 crisis, almost all the studies on the subject have situated their explanations of the crisis in broader strategic, regional and domestic contexts that were developing at the end of the Cold War.

South Asia as a region underwent drastic transformation with the retreat of the Soviet forces from Afghanistan. Coupled with a suddenly unipolar world, both had consequences for India and Pakistan’s relationship with the two superpowers. At the international level for Pakistan, its relationship with the US took a turn for the worse with the latter’s increased interest and scrutiny of Pakistan’s nuclear activities. For India, the demise of the Soviet Union meant loss of an old strategic alliance and a review of its estrangement with the US, the new sole superpower. At the domestic level, both India and Pakistan were experiencing relatively new inexperienced governments. Pakistan had undergone a democratic transition in 1988 after the death of Gen. Zia-ul Haq, the President of Pakistan, which brought the government of Benazir Bhutto in power. Being relatively inexperienced, Bhutto was advised by a seasoned Ghulam Ishaq Khan, the new president of Pakistan (Zia’s protégé) and Gen Mirza Aslam Beg, Chief of the Army Staff, who ensured a successful democratic transition (these three are frequently referred in literature as ‘the troika’). In India, the Congress Party lost its majority and a major economic disaster was in the making when Prime Minister V. P. Singh’s National Front Government came to power in 1989. Benazir Bhutto’s Peoples Party also



failed to win a majority of parliamentary seats, and both governments stood vulnerable to strong oppositions (Chari, Cheema and Cohen 2003; Ganguly and Hagerty 2005).

At the bilateral level, both India and Pakistan were still recovering from the Brasstacks crisis (1986–7) and efforts to repair the relationship were underway. As a major CBM following the crisis, both countries signed an agreement prohibiting attack on each other's nuclear installations and facilities based on an annual exchange of lists of such facilities. The agreement was signed on 31 December 1989 although it became effective on 1 January 1991. While this CBM held promise of a stable environment under new governments on both sides of the border, their respective hard-line stances on the issue of Kashmir remained a constant.

Kashmir as a physical region is a disputed territory between India, Pakistan and China. However, within the Indo-Pak context it holds different meanings for both India and Pakistan where the 'symbolic Kashmir' and the 'strategic Kashmir' are two different concepts. According to Chari et al. (2003) the symbolic Kashmir is a 'place where larger national and sub-national identities are ranged against each other. The conflict in this Kashmir is as much a clash between identities, imagination, and history, as it is a conflict over territory, resources and people' (Chari et al 2003: 35). For Pakistan's military, strategic Kashmir provides it strategic depth that it otherwise lacks against India, and for India's military, strategic Kashmir provides a cover to a large part of its territory. Its heartland would be exposed to attacks by Pakistan and China if it were to give up control of the Valley of Kashmir and the surrounding mountains.

Pakistan recognises Kashmir as a bitter legacy of the 1947 Partition, considers Indian control over Ladakh, Jammu and the Valley of Kashmir as illegal, and demands Kashmir's right of self-determination in accordance with UN Security Council Resolutions (UNSCR) 47 of 21 April 1948, 51 of 3 June 1948, 80 of 14 March 1950, and the United Nations Commission for India and Pakistan (UNCIP) resolutions of 13 August 1948 and 5 January 1949, accepted by both states at that time. The UN resolutions called for ceasefire and demilitarisation of the Jammu and Kashmir (J&K) State by both India and Pakistan followed by a plebiscite to ascertain the desire of the people of Kashmir (for independence or accession to one country or the other) conducted by the UN. That Pakistan did not demilitarise Kashmir region, a prerequisite for free and fair plebiscite, and failed to keep its end of the bargain, is highlighted by India as the reason this process did not move forward (Wirsing 1994). Thus, the Kashmir conflict has been concretised with conflicting claims over the territory and twice fought over, in 1948 and 1965.

Beginning in early 1990, a series of troop movements, deployments and red alerts on both sides of the border raised alarm in the international community of imminent war between India and Pakistan. The events leading to the 1990 crisis between India and Pakistan are a direct result of their obstinacy over Kashmir. Various scholars have presented several causes for the onset of the 1990 crisis. According to Chari et al. (2003), the origins of the Kashmir crisis can be traced back to 1983 when Farooq Abdullah won the state assembly elections and became the chief minister of Kashmir, dominating Indira Gandhi's Congress in the Valley of Kashmir (a Muslim-majority area) and reducing the latter's area of influence to the Hindu-dominated Jammu region. Abdullah declined Indira Gandhi's offer of an electoral alliance and attempted to 'unify India's opposition parties on the sensitive issue of centre-state relations' (Chari et al. 2003: 45). He was removed by Indira Gandhi's Government, which 'ignited a cycle of political degeneracy that would increasingly alienate young Muslims from Indian democracy' (Chari et al 2003:45). Abdullah was replaced by his brother-in-law G M Shah; Jagmohan Malhotra was appointed as governor of Jammu and Kashmir and Indian paramilitary forces were sent to keep peace in the Valley. After two years, Farooq Abdullah made a comeback after the dismissal of G M Shah's regime by the governor in 1986, demanding new state assembly elections. Rajiv Gandhi offered Abdullah power sharing, which the latter accepted, and, thus, in the 1987 elections, the former's Congress and latter's National Conference alliance won power against the Muslim United Front. However, Abdullah's credibility was seriously challenged, first, by his forming an alliance with the Congress, and the rigging of the elections, which 'completely alienated young Kashmiris whose experience with Indian democracy had gone sour twice in less than three years', leaving some of them 'no choice but to join the extremists' (Chari et al. 2003: 46).

By mid-1988, the law-and-order situation in the Valley deteriorated and by early 1989 violence had reached unprecedented proportions. The new government in India led by Prime Minister V. P. Singh in November 1989 inherited a disaster in Kashmir. After having been reappointed the governor of Kashmir by the new government, Jagmohan dissolved the state assembly of Jammu and Kashmir on 19 February 1990 without the approval of the Home Ministry in New Delhi, in a bid to secure his position as governor and 'clamped indefinite curfew on Srinagar, causing tremendous hardship and further alienating the Kashmiri population' (Chari et al. 2003: 52). The authors believe that Jagmohan's 'brutal approach helped build greater support for separatism' (Chari et al. 2003: 52), and 'Kashmiri freedom fighters' increased their militant efforts for '*Azadi*'.

The armed insurgency in the Valley of Kashmir challenged Indian control over its territory. According to Kapur (Ganguly and Kapur 2010), this provided Pakistan an opportunity to challenge the Kashmiri status quo. Kapur

writes that 'the Afghan war offered a model that Pakistan could use to exploit the insurgency and defeat a stronger, occupying power in Kashmir', and redirected the mujahideen freed from the Afghan war for 'jihad in Kashmir' (Ganguly and Kapur 2010: 39). Kapur (2010: 39) also comments on the possession of nuclear capability by Pakistan as a factor enabling 'Pakistan to challenge territorial boundaries in Kashmir without fearing catastrophic Indian retaliation', and he sees the 1990 crisis as an 'Indian attempt to intimidate Pakistan and coerce it into ceasing its support for the Kashmir insurgency' (Kapur 2010: 40). According to Ganguly and Hagerty (2005), 'New Delhi accused Pakistan of waging a sub-conventional war against India by financing, arming, and training Kashmiri Muslim "terrorists"', a charge dismissed by Pakistan which maintained that its support for 'Kashmiri freedom fighters' was 'only diplomatic and moral' in nature (Ganguly and Hagerty 2005: 87). The authors resonate consensus by scholars of the subject that 'the deepest roots of the insurgency could be found in India's domestic affairs; Pakistani support for the militants was typically viewed as an important, but secondary factor' (Ganguly and Hagerty 2005: 87). According to Chari et al. (2007), some scholars 'attribute the ferment to the disenchantment of young Kashmiris and increasing receptiveness to radical views when they found their rising educational and social aspirations thwarted and their path to economic and political empowerment blocked or manipulated' (Chari et al. 2007: 89).

A series of events involving troop movements, deployments and red alerts on both sides of the border starting early 1990 raised concerns among the international community that war was imminent between India and Pakistan. Some authors write that force deployments by India and Pakistan suggested that neither side wanted to escalate the crisis and fight a war in 1990, thus questioning the 'seriousness' of the crisis. According to Kapur, "in Kashmir, Punjab and Rajasthan, India and Pakistan together possessed a total of four armoured divisions. Only one Indian division, at the firing range in Rajasthan, was outside of its peace-time station, and no Indian or Pakistani units moved toward the international border during the crisis" (Ganguly and Kapur 2010: 44).

According to Chari et al. (2003), the American attachés observing force deployments on both sides of the border found 'little unusual military activity', and one noted that 'Pakistani strike corps were not on the move and that the Pakistani air force's forward operating bases were not opened', even though they were on high alert (Chari et al. 2003: 91).

The 'seriousness' of the crisis is also doubtful given that there was increased high-level diplomatic activity between India and Pakistan and at no time during the crisis did the political or the military lines of communication ever break down between the two countries. The final meeting took place between Pakistan's foreign minister, Yaqub Khan and his Indian counterpart, I. K. Gujral in New York on 25 April 1990 resulting in easing of military tensions. This meeting was followed by a high-level delegation from the US led by Deputy National Security Advisor Robert Gates to further ease tensions between the two countries and assess the situation. New Delhi proposed a military and non-military CBM package to Pakistan which included: '(1) information sharing (2) increased communication between local commanders (3) joint border patrolling (4) prevention of airspace violations and (5) exchange of delegations to reaffirm these arrangements' (Chari, Cheema and Cohen 2007: 95). In addition, diplomatic CBMs were also proposed by the two countries, which helped resolve the crisis.

The nuclear dimension of the crisis is contentious according to some authors. Americans viewed this crisis differently than Indians and Pakistanis. Chari et al. (2003) write that, 'while many American observers saw the nuclearisation of South Asia as the *beginning* of the 1990 crisis, for India and Pakistan it represented a fork in the road for some a turning away from war itself as a way of settling the Kashmir dispute' (Chari et al. 2003: 116). It is not confirmed, given the evidence studied by various scholars of the crisis, whether nuclear signalling was part of the strategy by either side even though both countries had nuclear capability at that time and if need be, could assemble a bomb in a short period of time (Perkovich 1999). According to Ganguly and Hagerty (2005), it was 'existential deterrence' that was responsible for de-escalation of the 1990 crisis. In his 1995 article, Hagerty explained the role played by existential deterrence when it exists between opaque proliferants, like India and Pakistan. He observes that, 'under conditions of opacity, the role of existential deterrence is even more pronounced. Since each side in an opaque nuclear arms competition had only limited information about the other side's nuclear forces, any deterrence derived from nuclear capabilities will logically be existential' (Hagerty 1995: 88). In the absence of existential deterrence, the crisis might have escalated to conventional level and Indian military might have retaliated like it did in 1965 against Pakistan's Operation Gibraltar (Subrahmanyam in Kanti et al. 1993: 184).

The 1990 crisis between India and Pakistan carried important lessons. While the acknowledgement of each side's nuclear capability might have allowed the crisis to dissipate and not escalate to conventional war-fighting, it did destabilise the security environment in South Asia. According to Kapur, 'Pakistan's willingness to provide the insurgency with extensive material support resulted to a great extent from emboldening effects of its burgeoning nuclear capacity, which Pakistani leaders believed reduced the likelihood of large-scale Indian retaliation' (Ganguly and Kapur 2010: 45), and while the crisis was averted, 'the standoff shows that nuclear weapons destabilized the

subcontinent almost as soon as India and Pakistan began to acquire them' (Ganguly and Kapur 2010: 45.). Chari et al. (2003) conclude that:

the crisis indubitably accelerated the region's movement towards the deployment of operational nuclear weapons and the systems that could deliver them within a fairly short time-frame viz. aircraft and missiles that had been modified to carry such weapons and missiles that were solely deployed for this purpose (Chari et al. 2003: 135).

By the end of the decade, both India and Pakistan were no longer opaque proliferants. In 1998, both countries conducted nuclear tests and declared themselves nuclear weapons states.

### **The Kargil Conflict (1999)**

Exactly one year after their nuclear tests, in 1999 India and Pakistan fought their fourth war in Kargil district of Ladakh in Jammu and Kashmir. The political and strategic context in which the Kargil conflict took place was noticeably different from that of the previous crises in the region mainly for two reasons. First, South Asia had experienced 'overt' nuclearisation with the nuclear tests conducted by India and Pakistan in 1998, which worried the international community about the fragility of peace between the two countries. Second, mutual realisation by India and Pakistan to continue the bilateral peace process as responsible nuclear states resulted in signing of the Lahore Declaration in February 1999. The memorandum of understanding between the two countries to work together to achieve lasting peace thus embodied the new reality of a nuclearised South Asia. The hopes for lasting peace, however, were short-lived and Kargil damaged the bilateral peace process for years to follow.

The Kargil operation was planned by the Pakistan Army using troops of the Northern Light Infantry (NLI) under the Force Commander Northern Area (FCNA). The objective was to infiltrate the Line of Control and occupy forward posts in the Kargil region, which were vacated by the Indian Army during wintertime due to extreme weather conditions when patrolling becomes impossible. Occupation of these forward posts was to provide an opportunity for the NLI to interdict National Highway 1A, the vital strategic supply route, and cut off Kargil-Ladakh sectors. The roots of the Kargil conflict, in the Pakistani narrative, can be traced to Operation Meghdoot launched in 1984 by the Indian Army to capture 'the undemarcated and unoccupied' 75-km-long Siachen Glacier, which pre-empted the Pakistan Army's chance of occupying Siachen (Malik 2006; Musharraf 2006; Khan, Lavoy and Clary in Lavoy 2009; and Gauhar 1999 and Nasir 2004 as cited in Lavoy 2009).

In addition to the general thesis of 'restoring honour' in the wake of the loss of Siachen, Ganguly and Hagerty (2005) specify four factors that contributed in setting the stage for Kargil: (1) rise of Kashmiri insurgency due to increased Indian use of 'repression and co-optation, to bring about a degree of order if not law' in J&K; (2) Pakistan's desire to highlight the 'Kashmiri cause' which was losing its 'international salience'; (3) given the mutually established nuclear deterrence, assumption on the part of the Indian decision makers about 'the possibility of Pakistani military malfeasance' being 'extremely low'; and (4) signing of the Lahore Declaration in February 1999 contributing to 'Indian complacency about Pakistani intentions' leading to 'lapse of military alertness along remote areas of the Indo-Pakistani border' (Ganguly and Hagerty 2005: 153).

Why did Pakistan plan Kargil? The Kargil Review Committee Report (KRCR), published by the Government of India (GoI) in 2000, provided a comprehensive analysis of the Kargil war, Pakistani objectives and Indian responses. According to the report, the Kargil incursion was planned by Pakistan based on certain assumptions which included their calculation of:

a normal winter; a weak and vacillating Indian reaction; a strong element of surprise that would enable them to consolidate their gains along the 'heights of Kargil'; their own redoubtable capacity to obfuscate and a willingness on the part of traditional patrons to play along; early internationalization of the situation, compelling foreign intervention from fear of a possible nuclear escalation (KRCR 2000: 20).

Khan, Lavoy, and Clary (Lavoy 2009) also iterate in their study the above-mentioned assumptions made by the Kargil planners.

1) Once the NLI fortified their positions in the occupied posts, 'the Indian army, involved in counterinsurgency in the Kashmir Valley, would be unable to undertake the massive operation necessary to dislodge Pakistani troops in such a difficult terrain, and therefore their counterattacks would be limited, which would end in stalemate, leaving the Pakistani military in a position of advantage' (Lavoy 2009: 86).

2) Given the winter weather pattern, the Kargil planners assumed that ‘infiltration would not be discovered at least until the end of May or early June’, providing time for the Pakistan Army to ‘reinforce its new positions or Kashmiri militants in the valley would be in a position to jeopardize Indian plans’ (Lavoy 2009: 87).

3) It was also assumed by Kargil planners that the risk of all-out war between the two countries was minimal given that deterrence was operational post-1998 and that the international community would ‘pressure India against turning a limited high-altitude adjustment of the LOC into a full fledged war’ (Lavoy 2009: 87).

At the beginning of the conflict, Indian Intelligence believed Kashmiri militants or mujahideen to have been the infiltrators in Kargil. There is not enough evidence to suggest whether it was a planned deception strategy by Pakistan to let the Indians believe the mujahideen story, or it was just ‘expedient to permit the Indian mischaracterization to persist’ (Fair in Lavoy, 2009: 232; Mazari 2003). Gen Pervez Musharraf, Pakistan Army Chief of Staff (COAS) during Kargil and its chief planner, argues insistently that it was the Kashmiri freedom fighters and not the NLI that infiltrated the LOC and occupied Kargil (Musharraf 2006). According to Musharraf, FCNA planned a ‘defensive’ manoeuvre in the Northern Areas of Pakistan to deny Indians any ingress across the LOC and the NLI were to ‘occupy the forward positions’, but the troops were instructed, ‘not to cross the watershed along the LOC’ (Musharraf 2006: 90). Musharraf writes that ‘freedom fighters’ had occupied posts in Mushko, Dras, Kaksar, Batalik and Shyok areas and Pakistani field commanders ‘were fully engaged in supporting them in the face of growing momentum of the Indian operations’ (Musharraf 2006: 91).

Gen. V P Malik, Indian COAS during Kargil also published his account of the Kargil war in 2006. According to Malik, the Pakistan Army had a stealth and deception strategy whereby Kargil was a closely-guarded secret among a select group of army commanders who planned using regular army troops ‘in the garb of the jihadis’ (Malik 2006: 92). Malik believes that this deception strategy was successful till early June 1999 for three reasons:

- a) there was no intelligence report on the Pakistani Army’s involvement before the war, b) all intelligence agencies continued to back their earlier reports focusing essentially on jihadi terrorist camps and concentrations in Pakistan-Occupied Kashmir and c) the Pakistani electronic deception plan for conveying this disinformation was effective (Malik 2006: 96).

On 26 May 1999 Indian Intelligence agency Research and Analysis Wing (RAW) intercepted an overseas call between Pakistan Army Chief Gen Musharraf (visiting Beijing at the time) and his Chief of General Staff, Mohammad Aziz Khan which revealed that ‘the whole operation in Kargil was no jihadi operation but a military aggression, planned and executed by the Pakistan Army’ (Malik 2006: 100).

None of the assumptions worked out in favour of the Pakistan Army. While Kargil did manage to ‘surprise’ the Indians and highlight Kashmir as a nuclear flashpoint, it failed to accomplish the strategic and tactical objectives in the wake of a rapid and overwhelming Indian military response after the complete intelligence of the intrusion was received. The Indian Army, Navy and Air Force operated in unison to thwart the attempts of the Pakistan Army at the tactical and strategic levels. As the fighting in Kargil intensified, Pakistan Prime Minister Nawaz Sharif requested US President Clinton for American intervention to stop the Indian counterattack, but American response was clear: ‘the solution required a Pakistani withdrawal behind the LOC, nothing else would do’ (Reidel in Lavoy, 2009: 135). Direct American engagement with both India and Pakistan during the two intense months of the Kargil conflict (end-May till mid-July 1999) resulted in Pakistan’s agreement to a complete unilateral withdrawal of its forces from Kargil.

Both India and Pakistan learned multiple lessons from Kargil. According to Ganguly and Hagerty (2005), ‘mutual possession of nuclear weapons was the critical determinant in controlling both vertical and horizontal escalation’, and though nuclear weapons did not deter low-intensity conflict between the two, ‘their existence did ensure that the status quo state chose not to expand the ambit of conflict for fear of generating uncontrollable escalation’ (Ganguly and Hagerty 2005: 162). Bruce Reidel provides an extensive account of the Clinton–Sharif meeting on 4 July 1999 and mentions an account of US Intelligence about July discovery of preparation of nuclear missiles by the Pakistani side, but several Indians and Pakistanis have questioned its credibility. According to Pakistan, ‘the Americans produced no credible evidence that Islamabad was preparing or moving nuclear warheads’, and that ‘such misinformation...seems to have been used to coerce Sharif, who was already apprehensive and unsure about the army’s intention especially after the removal of one army chief’ (Chari, Cheema and Cohen 2007: 139–41).

According to Gen V P Malik, ‘during the Kargil war, India’s response on the nuclear issue was measured, low key and dismissive of reckless statements and threats by some jingoistic elements’ (Malik 2006: 278). He continues to be optimistic in his assessment about ‘nuclear non-use’ in South Asia and writes that, ‘it is very unlikely that the Pakistan Army, which controls the nuclear weapons today, and cannot by any stretch of imagination be considered “irrational”, will resort to nuclear weapons unless Pakistan’s vital interests are threatened and its very existence is at stake’ (Malik 2006: 279). Kargil did, however, set in motion what proliferation pessimists call ‘the stability-

instability paradox', which suggests that 'a stable strategic nuclear balance makes escalation from a low level of conflict to the nuclear level highly unlikely, and thus paradoxically permits offensive military operations at a low level' (Lavoy 2009: 32). Kargil demonstrated that, 'the stability of a bilateral nuclear deterrent relationship can be eroded by the instability induced by the greater viability of conventional war' (Chari, Cheema and Cohen 2007: 148). Since Kargil, both India and Pakistan have developed their nuclear doctrines under comprehensive command and control arrangements and revised their military strategies to fight limited conflicts under the nuclear umbrella.

### **The 2001–2 Standoff: The Twin Peaks Crisis**

The 2001–2 crisis was a military confrontation between India and Pakistan where both militaries, fully deployed in a high state of readiness faced each other along the international border for 10 months (December 2001–October 2002). Events leading to the massive Indian mobilisation on the Indo-Pak border have their genesis in the Kashmir conflict. The Kashmiri insurgency aggravated after the Kargil crisis with three precipitating events leading to the 2001–2 border crisis: the hijacking of the Indian Airlines aircraft IC-814 and its landing in Afghanistan on 24 December 1999 by Harkat-ul Mujahedeen; suicide bomb attack on the J&K legislative assembly on 11 October 2001 by Jaish-e-Muhammad; and the attack on the Indian Parliament in New Delhi on 13 December 2001 by the Lashkar-e-Taiba (LeT) and Jaish-e-Mohammed (JeM) (Ganguly and Kapur 2010). All three organisations that claimed the responsibility for conducting these attacks were Pakistan-based terrorist outfits.

The attack on the Indian Parliament resulted in India launching Operation Parakram and mobilising half a million soldiers along the international border. India alleged that Pakistan was sponsoring terrorism and that Pakistan's Inter-Services Intelligence Directorate (ISID) was supporting these terrorist outfits to conduct operations inside India. In addition to general mobilisation of its armed forces, India demanded that Pakistan:

ban the Jaish-e-Mohammed and the Lashkar-e-Taiba, the two groups implicated in the attacks on the Jammu and Kashmir state legislature and the national parliament, respectively; extradite the twenty individuals whom India accused of having carried out terrorist attacks on its soil; and put an end to the infiltration into Kashmir (Ganguly and Kraig 2005: 298).

Pakistan condemned the attack on the Indian Parliament, rejected Indian allegations, and suggested joint investigation of the incident to determine the true identity of the terrorists. Pakistan's request was rejected by India and Pakistan responded in kind to Indian deployment with general mobilisation along the Indo-Pak border. India proceeded with recalling its envoy from Pakistan and suspended bus, train and Pakistani overflights into India.

Pakistan's President Gen Pervez Musharraf (who was COAS during the Kargil crisis), made an attempt to deescalate the crisis in January 2002. In a televised speech on 12 January 2002, Musharraf promised to crack down on terrorists and prevent the use of Pakistani soil for any terrorist activity, yet he categorically stressed that Pakistan's support for Kashmir's cause was an integral part of Pakistan's national ideology. Before his speech on 12 January 2002, Musharraf had ordered a crackdown on local militant outfits which led to the arrests of Hafiz Mohammad Saeed, head of LeT and Maulana Masood Azhar, head of JeM and banning of the two outfits, though he declined handing over any Pakistan-based terrorists to India for prosecution.

The timing of the 2001–2 border crisis between India and Pakistan coincided with the US war on terrorism in Afghanistan after the 11 September 2001 (9/11) attacks on the Twin Towers and the Pentagon. Pakistan was America's front-line ally in fighting the war on terror, providing military support to pursue the leader of the Taliban, Mullah Omar and Osama bin Laden, the architect of 9/11. When India approached the US alleging Pakistan's complacency in the terrorist attack on its national parliament, the US was in no position to coerce Pakistan into complying with Indian demands. US Secretary of State Colin Powell praised Musharraf's steps in firmly dealing with the local terrorist outfits, froze the assets of the LeT, urged India to exercise restraint, and advised Pakistan to limit its countermobilisation (Chari, Cheema and Cohen 2007: 168–9). The period starting immediately after the attack on the Indian Parliament in December 2001 till January 2002 has been termed by Nayak and Krepon (2006) as the first peak of the 'twin peak' crisis.

The second peak of the crisis was in May–June 2002 when, after a relatively uneventful period of three months, militants staged a suicide attack on an Indian Army camp in Kaluchak in J&K, killing 33 people, mostly women and children of army personnel. The nature of the attack was gruesome and it suggested as if Pakistan was unwilling or unable to control militant activity from its borders inside India. After this attack, the Indians planned to 'drive three strike corps from Rajasthan to Pakistan, engaging and destroying Pakistani forces and seizing the territory in the Thar Desert' (Ganguly and Kapur 2007: 55). In a countermove, Pakistan planned to move those army units that were engaged on its western border with Afghanistan involved in a manhunt for 9/11 terrorists to its eastern border with India. Both leaders also made belligerent speeches with Vajpayee calling for a 'decisive fight' and Musharraf

accusing the Indian government of 'perpetrating terrorist acts against its country's own minorities' (Ganguly and Hagerty 2005: 177).

There are two prominent explanations of how the crisis came to an end. One account applauds American diplomacy and US management of the crisis for reducing the tensions between the two countries through constantly pressurising India into exercising restraint and Pakistan into taking decisive actions in curbing cross-border terrorism (Chari, Cheema and Cohen 2007; Nayak and Krepon 2006). Ganguly and Kraig (2005), however, believe that US dependence on Pakistan to fight its war on terror in Afghanistan deprived India of the international condemnation against Pakistan that it had hoped for and it also failed to buckle Pakistan 'under the pressure of India's concerted conventional mobilization and coercive rhetoric' (Ganguly and Kraig: 307).

The second account credits nuclear deterrence due to the possession of nuclear weapons by both countries as the main reason for the de-escalation of the crisis. Both countries engaged in 'provocative' missile testing during the crisis, India during the first peak and Pakistan during the second peak of the crisis. According to Chari, Cheema and Cohen (2007), 'these tests, in the middle of the crisis situations, however, highlight the influence of the nuclear/defence scientists and the military in India and Pakistan, who constitute powerful vested interests propelling their missile programs' (Chari et al. 2007: 173). Ganguly and Hagerty (2005) believe that 'Indian threats to escalate the conflict militarily were not credible', and that Pakistan's possession of nuclear weapons 'persuaded India to keep its response to that invasion limited to the area of infiltration' (Ganguly and Hagerty 2005: 181). Kapur (Ganguly and Kapur 2010) maintains that the reasons for India's failure to attack Pakistan beyond Pakistan's possession of nuclear weapons were, 'the loss of the element of surprise; concern with the costs of a large-scale Indo-Pakistani conflict, including the possibility of nuclear escalation; and a desire to avoid angering the United States by attacking America's key ally in the Afghan war' (Ganguly and Kapur 2010: 58).

The 2001–2 crisis ended in October 2002 when both countries demobilised their militaries and returned to their peacetime deployments but it was not until 2004 that a substantive Composite Dialogue resulted in comprehensive confidence and security building measures, a process that continued till 2008. In addition to conventional CBMs, both countries agreed to expert-level meetings on nuclear CBMs, which resulted in an agreement on advance notification of ballistic missile testing brought into effect in 2005 (Padder 2012).

### **2008 Mumbai Attacks**

The composite dialogue and peace process that started in 2004 between the two countries was also a casualty, as were 166 casualties (including 25 foreign nationals) ensuing from a series of coordinated terrorist attacks in Mumbai during 26–9 November 2008. Ten armed terrorists carrying automatic weapons, hand grenades and satellite phones entered the Mumbai waterfront on a boat from Karachi, Pakistan, split into five groups and carried out attacks on several soft targets in Mumbai, taking hostages from various locations on 26 November 2008. It is now well documented (Reidel 2013; Nayak and Krepon 2012; Rabasa et al. 2009; Basrur et al. 2009) that the terrorists were trained in Pakistan by the militant outfit, LeT, and the only terrorist captured alive out of the 10 by the Indian forces, Ajmal Kasab, confessed to having been a member of the LeT and was executed by India on 21 November 2012, four years after the attacks. Though the Government of Pakistan (GoP) strongly condemned the Mumbai attacks, it initially denied Indian allegations of Pakistan's involvement in the attacks or of terrorists belonging to Pakistan. After having received the relevant evidence from the GoI and following it up with an investigation of its own, the GoP publicly admitted in 2009 that the terrorists were, in fact, from Pakistan, trained and armed by the LeT.

The locations targeted by the terrorists included financial and commercial landmarks in Mumbai aimed at damaging India's economic resurgence, bringing global jihad to the forefront in the international media, and provoking another fateful crisis between India and Pakistan. One of the founding members of LeT in Pakistan, Zaki-ur-Rehman Lakhvi, was the mastermind of the Mumbai attacks according to Kasab's written plea document. Based on his disclosures, Pakistan and the US were able to apprehend various LeT operatives including David Headley, a US citizen apprehended in Chicago who had played a crucial role in gathering and supplying intelligence to the LeT planners and attackers before and after the Mumbai attacks. According to Headley's guilty plea agreement and confession, the attack was planned with active involvement of some ISID officials who at various stages helped train the attackers even though he 'allegedly' maintained that ISID leadership was not aware of the planning (Reidel 2013: 7). Pakistan denied any official involvement in the planning and execution of the Mumbai attacks, and cooperated extensively with the GoI to share investigations carried out in Pakistan with respect to LeT operators.

A great strategic objective of the Mumbai attacks in 2008 could have been to provoke a military crisis between India and Pakistan given the magnitude of the attack itself and the casualties of foreign nationals. Since the 2001–2 crisis between the two countries, India had been making noises about the rationality of conducting limited surgical strikes on terrorist camps inside Pakistan as a statement of India's resolve to deal with cross-border terrorism. If India would have retaliated militarily after the Mumbai attacks to strike on LeT outfits across the border, it would have led

to a full-fledged military confrontation between the two countries, having the prospects of crossing the nuclear threshold at some point. While it would have shifted the entire focus of the investigation from LeT and its involvement in the attacks, it would also have provided relief for LeT and its Al-Qaeda counterparts for continuing their activities in Afghanistan since Pakistani forces would have had to be removed from the Pak-Afghan border and redeployed to the Indo-Pak border.

Reidel (2013) cites Saleem Shahzad, a Pakistani expert on Al-Qaeda on the goals of the Mumbai attacks based on his exclusive interviews with Muhammad Ilyas Kashmiri, a senior Al-Qaeda operative documented in his book (Shahzad 2011) that, ‘the ultimate objective of the Mumbai operation was in fact to provoke a full scale war’ (Reidel 2013: 13) between India and Pakistan. According to Kashmiri (as cited in Reidel 2013), ‘al Qaeda wanted a nuclear war between India and Pakistan in order to disrupt the global counterterrorism efforts against Al Qaeda, to complicate NATO’s war in Afghanistan, and to polarise the world between Islam and the “Crusader–Zionist–Hindu conspiracy”’. According to Reidel, there is no way to prove the veracity of Shahzad’s claims since he was murdered in Islamabad in May 2011 right after his book on Al-Qaeda was published, and Kashmiri was killed in a US drone strike in South Waziristan in June 2011.

If bringing India and Pakistan to the verge of war was one of the alleged objectives of the Mumbai attacks in 2008, it failed to materialise. India and Pakistan refrained from full-scale mobilisation of their Armed Forces after the Mumbai attacks unlike the 2001–2 crisis. India exhibited restraint and did not employ the Cold Start strategy, a doctrine of rapid attack inside Pakistani territory to gain quick tactical victories without allowing the space for nuclear retaliation, developed in 2004 but never publicly embraced by the government.

#### **Existing Conventional and Nuclear CBMs between India and Pakistan**

1. DGMOs hotline: 1971/upgrade 2004.
2. Non-attack on nuclear installations and facilities: December 1988 (post-Brasstacks 1986–7).
3. Agreement on advance notification of military exercise, manoeuvres and troop movements: April 1991 (post-1990 crisis).
4. Agreement on prevention of air space violations and for permitting overflights and landings by military aircraft: April 1991.
5. Joint declaration on complete prohibition of Chemical Weapons: 1992.
6. Hotlines between foreign secretaries: June 2004 (after the 2001–2 crisis),
7. Pre-notification of ballistic missile tests: October 2005.
8. Maritime security hotline between Indian Coast Guard and Pakistan Maritime Security Agency: November 2006.
9. Counter-terrorism hotline: 2011 (post-Mumbai attacks 2008).
10. Agreement on reducing risk from accidents relating to nuclear weapons: February 2007/February 2012.
11. Multiple CBMs on LOC.

#### **Conclusion**

The peace process between India and Pakistan has seen many ups and downs and there are numerous lessons to be learned from each crisis. Any hopes for stabilised relations between the two after the signing of the Lahore Declaration in February 1999 were ruined by the Kargil crisis in May–July 1999. The Agra Summit between Vajpayee and Musharraf in July 2001 ended in a deadlock over Kashmir and later that year both countries faced each other in an intense border confrontation in December 2001 after Kashmiri militants attacked the Indian Parliament. The 2001–2 crisis de-escalated in October 2002 and the composite peace process that ensued thereafter between India and Pakistan lasted until the Mumbai attacks in 2008 crashed all hopes of further rapprochement.

The peace process was an obvious casualty after the Mumbai attacks, but with the encouragement and facilitation of the American, British, Chinese and other concerned governments, both countries resumed talks in 2010. Although the Bush Administration should be credited for intense diplomatic efforts to defuse the tensions between the two countries after the Mumbai attacks, the crisis did not reach epic proportions because “Indian political leaders did not wish to risk an open-ended war that could escalate out of control or damage Indian economic or diplomatic equities” (Nayak and Krepon 2012: 53). According to Reidel (2013: 187), India and Pakistan are playing “Russian roulette, with war as a possible outcome.” Several US administrations have employed successful crisis management strategies in South Asia and defused tensions between India and Pakistan during Brasstacks, the 1990 Kashmir Crisis, the Kargil conflict, 2001–2 crisis, and the 2008 Mumbai crisis, but “dealing with India and Pakistan has been a zero-sum game, and often American presidents have struck out with both sides” (Reidel 2013:198).

India and Pakistan have learned numerous lessons from these crises as discussed in this chapter. The learning has been both positive and negative. Development of their nuclear command and control infrastructures, nuclear doctrines, nuclear postures, credible minimum deterrence strategies, strategic dialogue on conventional and nuclear CBMs demonstrates that positive lessons have been learned. Some of the negative lessons learnt include: an aggressive nuclear missile race, nuclear signalling early on in the conflict, the Indian Cold Start doctrine, limited war fighting strategies, Pakistan's induction of battlefield missiles (nuclear-capable), India's resolve to acquire a ballistic missile defence (BMD) shield, reliance on multilateral mechanisms for crisis management, and incessant vertical proliferation by both countries. Both countries have managed to propose and implement various conventional and nuclear CBMs lending credibility to their commitment to stability in the region. However, there is still great potential in the Indo-Pak relationship to work on the positives and move away from the negatives if both countries focus on joint strategic stability mechanisms that will ensure prospects for stable peace in the long term.



## **South Asia and the Cold War: An Incompatible Analogy**

The study of the nuclear relationship between India and Pakistan is often either equated with or compared to other adversarial nuclear relationships. This chapter shall locate some of these analogies and consider the merits of the case for making these comparisons. Do these analogies provide a viable blueprint for the conduct of nuclear relations between India and Pakistan? Can learning, in fact, take place from instances of past relationships? Jack Levy argues that learning takes place ‘as a result of the observation and interpretation of experience’ (Levy 1994: 311). If this is true, can learning then take place from the experience of other states and relationships and provide a model to tackle the nuclear instability that persists in the region?

This chapter shall first consider the categorisation of nuclear relationships as generalisable and similar entities. The first section shall seek to understand whether all nuclear relationships can be categorised as cold wars (Basrur 2008), and whether nuclear weapons bring forth a logic of their own so as to negate the influence of any other variables in the process of decision-making in nuclear states (Sagan and Waltz 2003). It is argued that the US-Soviet nuclear dyad has a number of lessons to impart to all new nuclear relationships, owing to its success in having averted nuclear confrontation. However, learning may only occur in instances where the lessons imparted are compatible and apt for the learning state/s to imbibe. The second section shall, thus, seek to ascertain whether the South Asian nuclear relationship and the US-Soviet Cold War relationship are compatible nuclear dyads for nuclear learning to take place.

### **Categorising Nuclear Conflicts**

An aspect of trying to understand any aspect of foreign relations is that they will be adjudged through the prism of seemingly similar past instances. It is thus that realism argues that the fundamental characteristics of the dynamics of international politics do not change (Knopf 2003: 191). In a sweeping generalisation, Rajesh Basrur categorises all ‘intense confrontation[s] between nuclear-armed states’ as ‘cold wars’ (Basrur 2008: 1). By this definition, there have been a number of other cold wars in history apart from the one that the Soviet Union and the US fought. These were between: the US and China (1960s); the Soviet Union and China (1960s); India and China (post-1974); India and Pakistan (from the 1990s); and US and North Korea (2000s onwards) (Basrur 2008: 2). For Basrur, nuclear weapons produce a certain ‘pattern of aggregate behaviour’ over time, which is recurrent (Basrur 2008: 7). Basrur argues that while the ideational and material dimensions and backgrounds of various cold wars may differ, the patterns of interactions they produce owing to their nuclear nature are similar. The Cold War is, thus, supposed to set an example for India and Pakistan to learn from (Basrur 2008: 11).

In a thematically similar vein, Kenneth Waltz (2003) argues that nuclear weapons have a logic of their own and makes states, however irrational they may appear to be, behave rationally. Waltz states that ‘in a nuclear world, any state—whether ruled by a Stalin, a Mao Zedong, a Saddam Hussein, or a Kim Jong Il—will be deterred by the knowledge that aggressive actions may lead to its own destruction’ (Sagan and Waltz 2003: 117). The characteristic of possessing a nuclear weapon is, thus, primary, and it shapes and governs relations between nuclear states. The language of deterrence in this regard is primary and does not discriminate on the basis of the nature of the system of government of the nuclear state in question. For Waltz, other issues like the differences in their histories of conflict between nuclear states and the differences in the distances between the adversarial states are not factors that alter the basic dynamic of deterrence between nuclear states (Sagan and Waltz 2003: 116). Scott Sagan, though, argues from the organisational theory standpoint that even though the differences in the nuclear relationships in the two dyads (India–Pakistan and US–USSR) are clear, the significance of these differences is not (Sagan and Waltz 2003: 91).

Joseph Nye (1987) argues that states learn from historical experiences. Sometimes these experiences are the states’ own, and sometimes they may be from the experiences of other states. While it may seem to be a good argument to consider studying the Cold War as a macrohistorical analogy that has direct repercussions for the study of any nuclear relationship, Nye does warn that large macrohistorical analogies can be misleading (Nye 1987: 379). Jeffrey Knopf agrees that countries need not necessarily learn from their own experiences and do draw conclusions from historical events that they were not involved in. This may, he argues, lead to shared learning that ‘could form a basis for policy coordination’ (Knopf 2003: 198). Robert Gilpin points out that it is indeed historical experience that is instructive in pointing out the choices and their probable consequences in the realm of war as well as peaceful cooperation. It is ‘in this sense, one can say that learning can take place and can influence the course of international relations’ (Gilpin 1981: 228).

It must, however, be asserted that, while learning can and does take place vis-à-vis similar historical experiences, the case for the India–Pakistan nuclear relationship learning from the Cold War is problematic on a number of counts. This stems from the inherent incompatibility in the nature of the two nuclear relationships. This is not to say, though, that there are no lessons to be had from the US–Soviet nuclear relationship. While there are lessons that can be drawn from the aforementioned relationship, the nature of learning as a process is subjective and ‘varies across actors’ (Levy 1994: 297). There is a difference between there being ‘lessons to be learnt’ from a historical experience, and ‘learning’ itself. In other words, just because there are lessons to be learnt, does not necessarily mean that decision-making organisations learn from them. Learning takes place in a context and is a function of lived experiences. On this count, the Cold War relationship between the US and the Soviet Union is weak in terms of proving to be a compatible analogy from which lessons can be drawn for the India–Pakistan nuclear relationship. The following section shall elaborate on the nuances of this incompatibility.

### **Examining an Incompatible Analogy**

The India–Pakistan nuclear dyad and the erstwhile US–USSR nuclear dyad are incompatible as analogies on a number of counts. These may be highlighted under the broader categories of: the history and nature of the conflicts, geostrategic imperatives, and the stability-instability paradox. It has been argued that nuclear weapons render all other variables in a nuclear relationship redundant (Waltz 2003). However, it is important to note that learning is experience-based and context-specific (Knopf 2003; Nye 1987). Thus, decision-making in the presence of nuclear weapons does not become disembodied from the geopolitical realities of the situation or from the shared experiences of nation building. These variables shape national interest and influence decision-making regardless of the presence of nuclear weapons.

### **History and Nature of the Conflicts**

To begin with, the basic nature of the two nuclear dyads is very dissimilar. India and Pakistan share a common colonial past and indeed still bear the weight of a bloody partition in their memories. Partition saw a massive displacement of Muslims, Hindus, and Sikhs, from those parts of territory that would be India and Pakistan. The communal violence that followed saw the deaths of 500,000 to 1 million Hindus and Muslims, and roughly 15 million were displaced (Ganguly and Kapur 2010: 9). In the post-1947 era, the issues of refugees, evacuee properties, treatment of minorities, canal waters dispute, and, of course, Kashmir, were the main problems that plague the relations between the two countries (Pillai 1969: 74–7). The Indian view of the situation can be summed up in J K Ray’s statement: ‘while India’s faith in the peace process is irreversible, equally strong is Pakistan’s resolve of launching terrorist strikes against India from bases not only in Pakistan or POK, but from hundreds of cells set up by ISI throughout India’ (Ray 2011: 188). Pakistan, meanwhile, opposes India’s claims to regional hegemony in South Asia, its alleged involvement in fuelling insurgency in the Baluchistan province, and its claims to Kashmir. The two countries have fought four wars against each other and the Kashmir issue remains an unresolved problem and at the centre of the fractured relationship between the two.

Quite in contrast, the US–Soviet Cold War relationship was a product of changing global superpower relations in the aftermath of the Second World War. Sagan succinctly states the differences between the India–Pakistan and the US–Soviet relationship as:

...contrast[ingly], the Americans and Soviets were on opposite sides of the globe and viewed each other as mysterious, often unpredictable adversaries. The Cold War superpowers held a deep-seated ideological rivalry but held no disputed territory between them and had no enduring history of armed violence against each other (Sagan 2001: 1066).

The root of the problems between the two nations thus lay primarily in ideological differences. It was the success of the Bolshevik Revolution that pitted the ‘competing myths’ of world revolution against the democratic world order, led on by Wilsonian principles (Basrur 2008: 19). Basrur argues that the ‘fundamental differences over ideology bolstered the self image of each’ against the other, thus producing mutual hostility. The Cold War, thus, was simply not a conflict being pursued to maintain the balance of power in world politics: it was also produced in a very classic ‘good vs evil’ and ‘democracy vs communism’ way.

### **Geostrategic Imperatives**

Another point of considerable divergence between the Cold War US–Soviet relationship and the India–Pakistan relationship is that of the geostrategic considerations that govern/governed them. The US and the Soviet Union never shared any contiguous borders, and as Sagan (2001) points out, they did not have any territorial disputes either. The thousands of miles separating them also meant that there was a possibility of early warning with respect

to missile launches and any other form of military mobilisation. In contrast, the flight time of a ballistic missile directed from Pakistan towards Delhi or Mumbai (and vice versa) would take a couple of minutes at best (Rehman 2012: 66). The respective distances between the national capitals of each country are less than an hour if supersonic fighter-bombers are taken into consideration (Talbot 1999: 118).

As Strobe Talbot (1999) points out, the US and the Soviet Union never had a direct conflict in the period of the Cold War (thus justifying the nomenclature). India and Pakistan, on the other hand, have fought four direct wars between each other, one of which (in 1971) resulted in the dismemberment of Pakistan. The matter of constant firing that occurs along the Line of Control (LOC) is almost a non-issue now and is considered routine. Geographical proximity, thus, is a major variable that governs the relations between India and Pakistan. This variable is wholly absent from the US–Soviet nuclear dyad.

The most crucial geostrategic difference between the two dyads, though, is the third nuclear state that borders both India and Pakistan, China. The role of China is especially important owing to its interest in the regional hegemony of South Asia as counter to similar Indian aspirations. India and China fought a war in 1962, which India lost,<sup>3</sup> thus sparking off a major reconsideration of its erstwhile defence policy (Raghavan 2008: 172). Raghavan attributes this massive loss to China to be the event which set in motion the process for India to become the ‘preeminent military power in South Asia’ (Raghavan 2008: 173). However, by the early 1990s, there were reports of Sino-Pakistani collaboration on Pakistan’s nuclear programme as well as ballistic missiles (Kumar 2008; Rajagopalan 2004). According to K. Subramanyam, this led to the Indian decision to weaponise its nuclear capabilities (Subrahmanyam 1998). India views the Sino-Pakistan alliance with suspicion and its hostilities with Pakistan invariably draw concern from Indian strategists about the opening up of a second front with China. Meanwhile, from China’s perspective, India’s intractable conflict with Pakistan over Kashmir keeps it from challenging China as a competitor in South Asia. Direct Chinese involvement, thus, complicates the India–Pakistan relationship considerably and distinguishes it from any other nuclear relationship.

### **The Stability-Instability Paradox**

This paradox in the context of the Cold War was coined by Glen Snyder, and meant that stability in the strategic (i.e. nuclear) levels meant that there would be instability in the lower rungs of conventional violence. This would stem from the fact that a state could attack the other conventionally or subconventionally, with full assurance that the conflict would not escalate to nuclear levels (Jervis 2009: 138). The conventional superiority of the Soviet Union in this case meant that the US had to pursue a policy of escalation dominance, whereby it would be able to ‘match or surpass the Soviet adversary at any possible level of violence’ (Jervis 2009: 138).

In keeping with this theory, Waltz argues that nuclear weapons serve to ‘limit the extent’ of the violence in conflict between nuclear nations. A case in point is the Kargil conflict, which was simply a limited war, owing to the existence of strategic stability in India’s and Pakistan’s nuclear relationship (Sagan and Waltz 2003: 115). Other scholars too agree that nuclear weapons have been stabilising in nature and the primary causal factor in the avoidance of a full-scale war in the aftermath of nuclearisation (Ganguly 2008; Hagerty 1998; Krepon 2004).

V R Raghavan argues that nuclear weapons have negatively impacted the India–Pakistan relationship by providing cover for cross-border militancy and terrorist activity emanating from Pakistan (Raghavan 2001: 84). Adding to this, S Paul Kapur (2010) contends that a high level of strategic stability would play to the advantage of India owing to its conventional military superiority. This, in turn, would then thwart any low-level conventional conflict-seeking behaviour from Pakistan. In the context of the subcontinent, however, Kapur argues that it is ‘strategic *instability*’ that facilitates Pakistan engaging in low levels of conventional violence. The argument here is that the instability at the strategic level ensures that subconventional or low levels of violence are not responded to aggressively (à la Cold Start), in the fear that any such conflict may quickly escalate to the nuclear level. While this tactic essentially presupposes restraint from a nuclear adversary, Indian strategic behaviour in the recent past, especially in terms of its reaction to the Mumbai attacks, has evinced this restraint.

With the introduction of TNWs and BMD, this strategic instability has only got accentuated, thus making room for subconventional violence. The stability-instability paradox, thus, has two different interpretations for the nuclear dyads of India and Pakistan, and the US and Soviet Union.

Thus, the US–Soviet Cold War experience is an analogy that is incompatible with that of the India–Pakistan nuclear dyad. This is not only in terms of the historical context, geostrategic imperatives, and the stability-instability paradox, but also in terms of nuclear force structures that the two dyads operate/operated with.

<sup>3</sup> Indian Prime Minister Jawaharlal Nehru called this a ‘permanent piece of education’ (Raghavan 2008: 172).

### **Conclusion**

The process of learning is predicated upon ‘interpretation of experience’ (Levy 1994) that requires actors at different levels to imbibe lessons from either their own experiences, or from the experiences of other actors in similar situations. An argument that has often been made is that the South Asian nuclear relationship has a lot to learn from the US–Soviet nuclear relationship. This chapter has sought to debunk the myth that the Cold War US–Soviet relationship and the India–Pakistan nuclear relationship are compatible case studies to draw lessons from.

This study has found that there are inherent differences in the nature of, the histories of, as well as the geopolitical considerations of the two nuclear dyads. Rajesh Basrur argues that there are many lessons that the multiple cold wars can impart upon the India–Pakistan relationship and that, ‘in looking at others, we might appreciate better that there are all kinds of lessons to be learned about what to do and not do...’ (Basrur 2008: 11). While the Cold War US–Soviet relationship does provide a useful model to study nuclear relationships and to draw lessons from,<sup>4</sup> these lessons in the South Asian case may not be entirely applicable or apt. Externally available lessons, thus, do not necessarily translate into learning for new nuclear relationships. South Asia has had to delve into its own array of experiences to ‘learn’ to manage its nuclear relationships, ensure nuclear risk reduction, and practice patience even in the face of warlike scenarios.

As Michael Cohen (2013) points out, an inferential challenge in studies like these is that even if India and Pakistan do behave similarly to the US and Soviet Union, it cannot be concluded authoritatively that the later decision-makers learnt from the earlier example. Cohen states that leaders often tend not to learn from other states’ history: they, however, rely on personal cognitive processes which influence their behaviour or change thereof (Cohen 2013: 443–4). The next section offers comprehensive content analysis of nuclear learning by both countries at individual, domestic, and systemic levels.

<sup>4</sup> For example, the Cuban Missile Crisis and the 1983 Crisis have generated a lot of literature and study in the discourse of nuclear brinkmanship and decision-making (Scott 2012; Adamsky 2013).

## **Section II**

### **The Level of Analysis**

## **Nuclear Learning at the Individual and Domestic Levels**

In order to construct the extent of nuclear learning in India and Pakistan since their overt nuclearisation in 1998, this chapter utilises responses from the ‘atomic publics’<sup>5</sup> in both countries based on email interviews. Since the introduction of nuclear weapons in the region, a group of national security experts on both sides of the border have specialised in the discourse on nuclear weapons, proliferation, deterrence, arms control and disarmament and the overall South Asian strategic stability paradigm. This “hardy division of labor has emerged that distinguishes between the intellectuals and state professionals deemed competent to talk about national security, and all others” (Abraham 2009: 10). To understand Pakistan’s nuclear learning trajectory at the individual, institutional, and state level, a group of national security experts in Pakistan were contacted for this study via email and their opinions on nuclear learning in India and Pakistan were recorded.

### **Responses from Pakistan**

#### **Nuclear Learning: ‘State’ and ‘Organisational’ Perspectives**

There is a consensus amongst the respondents of this study that Pakistan has come a long way since it abandoned the nuclear closet in 1998 and learning in one form or the other has taken place at some levels with varying degrees. According to the former Chairman Joint Chiefs of Staff Committee, Gen. (R) Ehsan-ul Haq, “the long nuclear learning curve indicates that Pakistan is a responsible nuclear state which has highly developed policies, procedures and infrastructure to manage the nuclear program”, and given the efforts made to institutionalise Pakistan’s command and control infrastructure, “it can be logically inferred that there is significant understanding of the technological characteristics and strategic consequences of these weapons”. Haq believes that Pakistan’s nuclear learning at the state level has evolved beyond the simplistic Western notion of minimum deterrence and it has adopted the policy of credible minimum deterrence given its unique and dynamic threat environment. In addition, at state level, Pakistan deliberately maintains ‘calculated opacity’ and complete strategic ambiguity about its nuclear doctrine, which, Haq asserts, serves to enhance the credibility of Pakistan’s nuclear deterrence. At the operational level, Pakistan maintains a strict balance between assertive and delegative command and control mechanisms, which is indicative of a sophisticated learning process evolved in the last four decades. Haq observes that, “though Islamabad maintains centralized control of nuclear weapons program; it presumably has a seamless mechanism that would ensure that nuclear weapons are ‘never’ used inadvertently or accidentally and are ‘always’ available once required”.

At the organisational level, Pakistan has learned from the Cold War organisational practices and appropriated them to the best of its own circumstances. Pakistan’s National Command Authority (NCA) was established two years after the nuclear tests in 1998 and three years before the formation of the Indian NCA. The Strategic Plans Division (SPD) acts as NCA’s secretariat, and given its deeper understanding of the conceptual and operational aspects of the safety and security of the nuclear programme, Haq believes it has proven to be a successful model for advanced nuclear learning.

For Talat Hussain, political analyst, columnist and talk show host, nuclear learning in Pakistan “pertains to the idea of nuclear weapons’ centrality to defence”. He reminisces that in the early decades of the nuclear programme when it was still under wraps, nuclear weapons were seen in ‘over-simplistic terms’ as the sole guardians of Pakistan’s prestige and security. Though Pakistan has come a long way, Hussain believes that earlier learning predicated erroneously on the notion that asymmetry in conventional weaponry vis-à-vis India could be addressed simply through possession of nuclear weapons capability coupled with the threat of actual use of nuclear weapons ensuring Mutually Assured Destruction. Pakistan has learned lessons from the Middle East and Gulf experiences to protect its weapons from aerial attacks, devised its dispersal mechanisms and tailored its doctrine accordingly, but the biggest lesson comes from the change in Pakistan’s strategic outlook. For Pakistan, Hussain argues, the biggest learning has come from an internal realisation that “real security lies in internal stability and economic development and that the (nuclear) programme cannot solely account for a comprehensive national security paradigm”.

An embedded lesson, therefore, is that national prestige cannot solely rely on nuclear weapons capability but rather “is a function of a vibrant democracy, a satisfied nation, a prosperous economy with stable borders”. What does this learning and change in outlook suggest for Pakistan? Hussain proclaims that there now exists “a deeper realisation

<sup>5</sup> The term ‘atomic publics’ has been borrowed from Itty Abraham’s (2009) edited volume, *South Asian Cultures of the Bomb*.

that being a nuclear power ‘alone’ is not enough to ward off clear and present dangers to national security”, even though the ‘identity’ of being a nuclear weapons state is an intrinsic and permanent part of Pakistan’s strategic psyche.

Brig. (R) Feroz Hassan Khan, author of *Eating Grass: The Making of the Pakistani Bomb* (2013), believes that in Pakistan, like other nuclear powers before, factual and inferential nuclear learning have followed different trajectories. While factual learning involves learning from empirical facts associated with nuclear weapons (their numbers, types, and capabilities of various weapon systems), inferential learning involves the lessons learned and applied to policy decisions. In the early years, Khan states that Pakistani scientists were trained abroad and were active participants in the factual learning process, returning home to serve the country. This process continued even after sanctions were applied (after the discovery of the nuclear weapons programme) based on open sources or “knowledge transferred from the previous generations”. Thus, organisational learning, according to Khan, “especially in regard to nuclear management, occurred without any prior experience and is sui generis”, and has primarily evolved on military experience derived from the Cold War concepts. Khan believes that Pakistan’s factual learning process is limited because “even common knowledge on nuclear weapons is still shrouded in secrecy and the bureaucratic culture seldom encourages knowledge sharing”.

But Khan is hopeful that with the rising number of young strategic analysts in Pakistan, factual learning will gain more traction. How, then, has inferential learning affected national policy? Khan maintains that in Pakistan, state learning did not take place independent of organisational learning, and because of “non-evolution of civil-military relations, nuclear learning has remained the preserve of the military—the strongest institution in the country”. As a result of that, “the lessons and evolution of learning has remained confined to few individuals that have remained in the nuclear establishment since its inception”. Khan observes that the nuclear bureaucracy in Pakistan is not open to “persuasion, change and adoption to new ideas”. Consequently, at the state level, Pakistan has failed to make the transition from ‘simple learning’ to ‘complex learning’, even after one decade of military rule and two democratic transitions, because “individual and institutional learning is merged”.

The Director General of Arms Control and Disarmament Affairs (ACDA) at SPD, Air Cdre. (R) Khalid Banuri maintains that even though South Asian nuclear learning has evolved from the Cold War experience, South Asia has learned the dos and don’ts of the Cold War far effectively than many anticipated. At the state level, Banuri asserts that though Pakistan was a reluctant entrant in the nuclear weapons club, it has learned numerous lessons and tailored them to suit its infrastructural needs, legislative, and various administrative aspects using a five-pronged strategy. Some elements of this five-pronged strategy include:

- 1) Pakistan’s NCA, with a full-time secretariat, the SPD, was formally instituted in February 2000;
- 2) a robust Security Division was established under the SPD, which now has over 25000 persons working in the field;
- 3) Pakistan Nuclear Regulatory Authority (PNRA) was established in 2001 as a consequence of Pakistan’s joining the Nuclear Safety Convention (CNS);
- 4) an Export Control Act was promulgated and implemented in 2004; and
- 5) in 2004, Pakistan commenced a composite dialogue process with India that included a segment on expert-level nuclear CBMs; the NCA Act was promulgated subsequently in 2010.

Banuri argues that as a responsible nuclear weapons state, Pakistan has engaged in several multilateral arrangements on nuclear issues and this is manifested in Pakistan’s active involvement with the Nuclear Security Summit (NSS) process; participation in the Global Initiative to Combat Nuclear Terrorism (GICNT); and as an observer in the Proliferation Security Initiative (PSI). At the organisational level, the NCA, chaired by the prime minister, takes its decisions through two committees: the Employment Control Committee, whose deputy chairman is the foreign minister; and the Developmental Control Committee, responsible for implementing the strategic direction, where the deputy chairman is the Chairman Joint Chiefs of Staff Committee. Banuri maintains that, “together with legislative and administrative effort, SPD has built itself into a one window solution to all strategic and space matters as per its mandate, consistent with the NCA Act 2010”, and that “the institutional structure further draws its strength from internal review and system analysis pursuits for strategic entities, in all realms of strategic planning, operations, development pursuits, training, logistics and audits”. The experience of almost 15 years suggests that positive learning has taken place “to handle the peculiarities of this capability, beyond the conventional weapons realm”.

### **Pakistani Perspectives of Indian Nuclear Learning**

Respondents of this study are divided on the nuclear learning trajectories in India and Pakistan. Pervez Hoodbhoy, a leading anti-nuclear scholar in Pakistan and the author of *Confronting The Bomb: Pakistani and Indian Scientists Speak Out*, observes that nuclear learning in India and Pakistan has evolved at different tangents given the strategic outlook of both countries. Indian nuclear strategists view themselves as ‘global players’ and have ‘appropriated’ the

Cold War strategic nuances, nuclear vocabulary and methodology accordingly, while in absolute contrast, Pakistan has not evolved beyond India being their sole strategic focus.

Salma Malik, Assistant Professor, Department of Defence and Strategic Studies, Quaid-i-Azam University, Islamabad, argues that since Indians had a generational leap over Pakistan's overt nuclearisation, it is unfair to compare the learning trajectories of both states at the same tangent. Having said that, she maintains that although "the initial Indian stance was conservative and exhibited restraint, the 1998 tests, coalition politics, post 9/11 developments and India being courted by US as a strategic partner has made it more aggressive and bold over the years to the point of being brash about considering the nuclear muscle as a viable option".

Pervaiz Iqbal Cheema, Dean, Faculty of Contemporary Studies, National Defence University, Islamabad, however, believes both India and Pakistan are pursuing nearly identical nuclear policies shrouded in ambiguity, and, therefore, the lessons discerned at the state level are not that different altogether for both countries. India and Pakistan are both non-NPT states pursuing policies of credible minimum deterrence; both countries maintain de-mated yet ready-to-deploy nuclear posture for crisis stability; and both are reluctant to contain the expansion of their nuclear weapons programme given the clarity of their threat perceptions: for Pakistan it is India, and for India, it is Pakistan and China.

Lt. Gen.(R) Asad Durrani, former Director General, ISI, echoes this similarity in the learning patterns of India and Pakistan (at the state level) based on their Cold War knowledge, sized to suit their particular needs. He believes that initially for Pakistan, 'ambivalence' was the fundamental principle of nuclear deterrence. But soon after India and Pakistan demonstrated their nuclear capability, the strategy of ambivalence had to be dropped: "a test for example was not to be read as a launch against the other; establishing hot lines and a system of advanced warning was therefore put in place in short order", and in due course, "chest beating and dispensing threats, though part of the ecstasy, since they could develop a momentum of their own, also made way for temperance".

Syed Rifaat Hussain, Professor and Head of the Department of Government Policy and Public Administration, National University of Science and Technology (NUST), Islamabad, argues that though there are similarities in the learning patterns of both countries, Pakistan has been transparent about taking extraordinary measures to "organisationally manage its nuclear weapons capability better as compared to India". Hussain believes that Pakistan's organisational culture is 'standard operation procedure' (SOP)-oriented and has become prudent over time. The evolution of SPD's management of Pakistan's nuclear weapons, according to Hussain, "is most reassuring and represents a case of incremental learning".

At the organisational level, Feroz Hassan Khan believes nuclear learning is considerably different in India and Pakistan given their significantly different strategic cultures. In contrast to Pakistan, Khan observes that Indian factual learning has been slower and its military plays little role in nuclear policy matters. Additionally, in India, there is no equivalent of the SPD, and though the nuclear facts remain in the Indian Atomic Energy Commission and the Defence Research and Development Organisation (DRDO), it is mainly the Indian civilian-scientific bureaucracy as compared to military-scientific establishment in Pakistan that crafts nuclear policy. Khan states that both India and Pakistan have inferred wrong lessons from their past crises which does not bode well for their inferential learning capabilities. He cites the case of Kargil, the Twin Peaks Crisis and the 2008 Mumbai attacks to suggest that the lessons learnt from these crises "have bolstered India's confidence in brinkmanship, and reduced concerns that low-level conventional conflict could jump across the nuclear firebreak". For Pakistan, Khan explains, the lesson that is yet to be learned remains that, "the lack or negligence of control of jihadi elements or asymmetric warfare can back fire and become a trigger for military crises". Khan believes that both India and Pakistan are way behind in factual and inferential learning and since the strength relies on 'shared concepts of risk and reality', "the absence of such a shared concept may undermine the robustness of deterrence".

Brig.(R) Naeem Salik, author of *Genesis of South Asian Nuclear Deterrence: Pakistan's Perspective*, believes that organisational learning in India markedly differs from that in Pakistan. He observes that in Pakistan, the process of learning and its "manifestation in terms of institutional building and expertise" was a sustained process even though it was under military rule from 1999 to early 2008. In interactions with his Indian counterparts, Salik claims that some Indian experts have often expressed the need for a 'SPD equivalent' in India, which is demonstrative of organisational learning lessons employed by Pakistan. However, in comparison, Salik believes that the process of learning in India has been a slow one due to: a 'notoriously slow civilian bureaucracy', and a turf war between the politico-military-scientific community as well as within the three Services. Salik observes that, "these rivalries and competitions have not been fully resolved due to which the learning and concomitant developments have been stymied".

Zafar Nawaz Jaspal, Director, School of Politics and International Relations, Quaid-i-Azam University, Islamabad, also believes that there is a fundamental difference between Indian and Pakistani learning patterns, visibly identified



“in the way India has opted power projection style in its nuclear posture”. Jaspal argues that while Pakistan understands that limited war is not an option, India has projected limited war capabilities enshrined in the ‘Cold Start Doctrine or Proactive Military Operation Strategy’. Gen. Haq also reiterates the same point and asserts that while Pakistan’s nuclear learning is rooted in its ‘security imperative’, Indian nuclear weapons have been developed for prestige “in pursuit of its power projection ambitions and desires to revise the global order”.

### **Role of Media and their Contribution in Nuclear Learning**

Rifaat Hussain observes that the media in both countries has been “conformist rather than contrarian”, towing the official line and behaving in a nationalist fashion during times of crisis. In the same vein, Raza Rumi, political analyst and editor at the *Friday Times* argues that the media on both sides of the divide operates on ‘hyper-nationalism’ during crises. Rumi observes that the media’s role in Pakistan’s nuclear learning is doubtful to say the least, primarily because its “nuclear structure, strategies and doctrines are shrouded in mystery and there is a lot of baseless speculation abound in the media”. As a result, Rumi claims there is not much that the media can contribute to progress the discourse on nuclear issues “beyond hyperventilating TV anchors pursuing threats that will never materialise”.

Haider Nizamani, author of *The Roots of Rhetoric: Politics of Nuclear Weapons in India and Pakistan*, believes that the media (both print and electronic) commentaries on the nuclear issue in both countries is the privileged domain of a “highly select group of people and most of them have military or diplomatic background with handful of strategic experts” and thus “the commentaries in the media tend to be high on hyperbole and low on critical thinking”. Therefore, its contribution to nuclear learning is at best conjectural.

Brig. (R) Shaukat Qadir, defence analyst, resonates similar concerns. According to Qadir, in both India and Pakistan, the vast majority do not concern themselves with nuclear matters “except to being ignorantly proud of having acquired the status, without adverting to the responsibility that accompanies the status”. He observes that those who concern themselves with the subject “need exposure to greater understanding on the nature, employment, and consequences of the use of these weapons”. Qadir regrets that apart from a handful of informed and learned experts, irresponsible statements made by most analysts adversely affects the domestic discourse on nuclear issues and suggests that “a systematic education of the media on this issue is essential for promoting a meaningful discourse”.

S. M. Hali, defence analyst and columnist, views the media debate in a larger context. According to Hali, the media in general has affected the discourse on Pakistan’s nuclear weapons. The Western media, Hali asserts, is critical of Pakistan’s nuclear safety and security practices because of lack of access to international security experts to monitor safety standards on the ground. Resultantly, highly simulated stories about the safety and security of Pakistan’s nuclear weapons have consumed the Western media. This, in turn, has provided the Indian media enough ammunition against Pakistan, and echoing Western media sentiments, “suits them to downplay Pakistan’s capability”. Although defence and political analysts in the Pakistani media receive background briefings from Pakistan’s nuclear establishment to dispel the negativity, “lack of requisite and comprehensive knowledge base to fully comprehend the issues related to Pakistan’s nuclearisation” remains a handicap as only a handful of commentators can provide credible analysis on nuclear issues.

Talat Hussain, however, views media’s contribution on nuclear discourse in Pakistan as positive. He argues that the Pakistani media has been able to create space for new nuclear learning in Pakistan both ‘indirectly’ and ‘unintentionally’ through its coverage of ‘national crisis’ irrespective of its nature. Hussain believes it has been possible because of the quiet realisation over the years about the importance of democracy and economic development as essential pillars of national security ‘in addition’ to nuclear weapons. One reflection of this ‘sobering national mood’ is ‘the lukewarm nature of celebrations’ to mark Pakistan’s nuclearisation in May each year. Hussain observes that the “initial national jubilation and endless self-patting is now seldom seen on Yom-e-Takbeer, the official name of the day the bomb was brought out of the closet”. And he claims that this realisation that the “nuclear programme alone is not enough for a state to be recognised as viable and respectable, has sunk in through the lens and the pen of the media”. Gen.(R) Haq also acknowledges media’s role in launching the discourse on nuclear issues, which was non-existent prior to nuclearisation. Haq states that, “owing to its position as a perception manager and information gate-keeper”, the media in Pakistan has significantly influenced nuclear learning. Their contribution is discernable from the fact that there has been a visible progress from a ‘virtual taboo’ and ‘non-existent’ debate on nuclear issues towards a ‘substantial discourse’ in both the print and electronic media in Pakistan.

Ali Sarwar Naqvi and his research team at the Centre for International Strategic Studies, Islamabad, has reservations about media’s contribution on the nuclear discourse in Pakistan. It is observed that although there is a subtle debate in the Pakistani media on nuclear issues, there are no means of evaluating whether these debates have affected

nuclear policy or strategic thinking. Beyond the policy discourse, there is almost little to no debate in the Pakistani media on associated issues related to the “hazards of nuclear war; radiation exposure and educating masses on how to protect themselves in case of a nuclear war”. Though the nuclear debate in Pakistan “is confined to a small pool of experts”, an increased student intake in the field of nuclear and strategic studies in the established educational institutions has been observed which suggests a healthy expansion in future specialists in the field.

Feroz Hassan Khan strictly maintains that media in both India and Pakistan has played little to no role in educating themselves and others. Khan argues that media has shied away from mature debate in both countries and has only been able to feed the rhetoric and nationalism during crises. Khan observes that since the culture of secrecy is the ‘preserve of the elitist’ in both countries, it is still ‘culturally’ unacceptable to have open discussions on “plain facts much less on policy and consequences of force postures, nuclear diplomacy and implications on demonstration, deployment and employment”. Khan believes that, “these questions are begging serious informed debate that need to be dispassionate lest the learning experience shifts into the negative rather than positive”.

Pakistan’s strategic community, the specialised expert group (the small sample collected for this study), is not a homogeneous entity, and, therefore, their understanding of nuclear learning in Pakistan is informed by their own distinct propensities shaped by their academic and professional experiences clearly revealed in their responses discussed above. This reflects a positive trend, which suggests that the expert group is open to debate on strategic issues in Pakistan and possesses independence of thought. The lessons for Pakistan are different at each level of analysis. There is a dilemma of separating the ‘individual’ and the ‘organisational’ in Pakistan where nuclear weapons are concerned primarily because of the nature of the ‘guardians’ guarding the assets. While Pakistan’s nuclear weapons programme has grown in 15 years, it is difficult to assess this progress exclusively at the ‘individual’ level (be it political or military) independent from the progress made at the ‘organisational’ level, even though manifestations of the institutionalisation of the nuclear programme are unmistakably evident. Similarly, lessons for the ‘state’ cannot be analysed in isolation from the lessons learnt at the individual and organisational levels.

### **Responses from India**

#### **Nuclear Learning: ‘State’ and ‘Organisational’ Perspectives**

India’s existence as a self-proclaimed nuclear weapons state in a staunchly status-quoist world order has certainly had an important role to play in shaping its nuclear experience. The path to being deemed a ‘responsible nuclear power’ from being considered a revisionist nuclear power has been fraught with challenges which have shaped nuclear governance, both civil and military. This, in essence, has been a function of ‘experiential learning’, which is shaped by the interpretation of experience (Levy 1994: 283). It has been generally assumed that both India and Pakistan have benefited from the documentation of the experience of other nuclear weapons states (Nagappa 2013; Chari 2013).

The concept of nuclear deterrence and other issues arising with regard to the experience of nuclear states, for example in the Cuban Missile Crisis and the Ussuri crisis between China and the Soviet Union, have had an important role to play in informing and influencing the nuclear behaviour of new nuclear states like India and Pakistan (Chari 2013). This has formed the ‘elementary grammar’ (Shankar 2013) that has governed the narratives informing nuclear decision-making in the subcontinent.

Lt. Gen. (R) Ata Hasnain, former Military Secretary, states that the nuclear learning process in India had commenced well before Pokhran-II. He states that it was, in fact, under Gen. K Sundarji’s tenure as the commandant of the Army War College, that a debate on nuclear symmetry and its implications had begun. The Army in this period had commenced including nuclear backdrops in its war games in the late 1980s (Hasnain 2014). While this was from an evidently strategic vantage point, there was no institutional cooperation/synergy when it came to coordinating on these issues with any other institutions, be they governmental or otherwise. Hasnain argues that this is what led to the period of general intellectual deficit (save for the Armed Forces and the defence scientific community) on nuclear strategy in the period following Pokhran-II.

Despite the learning that the Armed Forces may have imbibed from their war gaming and military experience, as Hasnain (2014) points out, ‘it is an irony that those who best understand the war fighting and deterrence capacity of nuclear weapons are well outside of the ambit of (nuclear and strategic) decision making’. The highest nuclear decision-making body in India is the NCA which comprises a Political Council (PC) and an Executive Council (EC). The PC is chaired by the prime minister and is the only decision-making body that can authorise the use of nuclear weapons. The EC, meanwhile, is an advisory body which is chaired by the national security adviser consisting of the service chiefs (Sethi 2009: 160). This command and control structure ensures that the decision-making related to nuclear use is firmly in civilian hands. Strategic analyst Manpreet Sethi, though, argues that there

needs to be an ‘institutionalised presence of the military leadership in the PC’ for efficient nuclear decision-making (Sethi 2009: 162–3).

Vice Admiral (R) Vijay Shankar, a former commander-in-chief of the Strategic Forces Command in India argues that doctrinal flexibility was never intended in India. This means that the two primary principles that have guided Indian nuclear decision-making have been ‘avoidance’, and ‘civilian control’. The separation between ‘control’ and ‘custody’ has been firm as well (Shankar 2013). The defence scientific establishment in the Indian case has an important role to play in the management of nuclear forces. While the reliability of the fissile core and storage lies with the Department of Atomic Energy (DAE), the responsibility of weapons assembly itself lies with the DRDO (Sethi 2009: 160). This underlies the core tenet of civilian control.

Vested organisational interests also have a role to play in determining nuclear behaviour as has been seen in the Indian case. For example, the behaviour of the DRDO with regard to missile testing and development of new weapons systems like BMD may be in relation to their centrality in the project of national security, technological pride and prestige, etc. However, these have negative signalling effects on adversarial states like Pakistan which then feel compelled to respond. Likewise, as P R Chari, erstwhile member of the Indian Administrative Service and currently a research professor at a think tank in New Delhi, points out: ‘The nuclear triad is only a way of placating the three services.’ He argues that if the idea behind the triad is essentially survivability, and the seaborne nuclear deterrent is the most survivable, then why do the other two services need nuclear weapons?

Another aspect of nuclear learning for India has been in the context of its relationship with Pakistan. Some leaders, like L. K. Advani in the aftermath of Indian nuclearisation had said that they expected nuclear weapons to help solve the Kashmir dispute. However, Pakistan exploding their nuclear weapons within weeks of the Indian tests then led to the realisation that this may not be possible (Chari 2013). However, what India did not account for was the nature of subconventional violence that would ensue under the nuclear overhang. This has definitely been a ‘learning’ for India and a lesson for other adversarial nuclear states.

With regard to doctrine, there is consensus among the Indian respondents that the US–Soviet nuclear experience has been a useful source to understand the dynamics of nuclear relationships. In fact, it has been argued that India’s No-First-Use (NFU) Doctrine is derivative of the extensive research work that was conducted with regard to Cold War doctrines such as MAD, First- and Second-Strike capability, Massive Retaliation, etc. (Hasnain 2014). Another important aspect of study emanating from the Cold War nuclear relationship is the concept of Red Lines. The Indian Armed Forces are now deeply involved in the identification of these lines with the European theatre of the Cold War as a backdrop for study (Hasnain 2014).

### **Indian Perspectives of Pakistan’s Nuclear Learning**

The collusive nature of the Sino-Pakistan nuclear relationship which fructified in the latter’s nuclear weapons programme has had a major influence in the Indian strategic community’s view of Pakistan. Vice Admiral (R) Vijay Shankar argues that:

...the Sino-Pak nuclear weapons program must be seen as the two faces of ‘Janus.’ Therefore it is logical to conclude that there exists a doctrinal linkage between the two which permits a duality in China’s nuclear policy; a declared No First Use can readily fall back on Pakistan’s developing First Use capability as far as India is concerned (Shankar 2013)

In this case, the learning for Pakistan has been that its ambiguous nuclear doctrine and ‘no NFU policy’ is, in fact, an effective tool in a two-pronged strategy which keeps India hemmed in on two fronts thus creating uncertainty and insecurity. Prof. Rajaram Nagappa of the National Institute of Advanced Studies makes his point about the Indian worries about Pakistan’s command and control structure by quoting the following passage from Jeremy Bernstein’s review of the book *Confronting the Bomb: Pakistani and Indian Scientists Speak Out* (Pervez Hoodbhoy, ed.).

In 2003 Musharraf escaped two assassination attempts by military officers with extreme Muslim views. They were caught and some were sentenced to death. In May 2012 they all escaped from jail while the prison guards stood aside and displayed Taliban slogans. In Hoodbhoy’s view, there are in effect two Pakistani armies. One is devoted to defending the country’s borders and another is devoted to turning Pakistan into a country ruled by sharia law. The great concern is that this army will get hold of nuclear weapons. A relevant question is whether Pakistan has a system requiring that two or three separate officials give assent before a nuclear device can be launched. If this had been in effect in *Doctor Strangelove*, General Ripper would not have been able to launch his strike. Who in Pakistan has the authority to launch? (quoted in Nagappa 2013)

Indian concerns with regard to Pakistan’s command and control structure often question the strength of the institution of the military itself. That being said, as Chari points out, while in India, it is clear that the actor involved in the process of learning is the political executive, it is unclear as to who is the actor who learns in Pakistan. He

argues that given the fact that the military is in charge of nuclear weapons, it is irrelevant to say that the political leadership in Pakistan learnt something. There is a possibility that military expertise would mean that the Pakistani military's view of nuclear weapons could be more nuanced, calibrated, and circumspect. However, this is an area of conjecture (Chari 2013).

From the Indian point of view however, the greatest bit of learning for Pakistan from its nuclear experience has been the fact that nuclear weapons do not prevent conflict at the lower levels. Kargil proved that in 1999 (Chari 2013). In the subsequent years subconventional conflict from non-state actors in Pakistan has been a constant cause of concern for India. Air Vice Marshal (R) Kapil Kak believes that '...Pakistan's nuclear weapons have tended to constrain India's conventional military riposte to the former's episodic subconventional force application through terrorist attacks' (Kak 2013). This, in fact, is the essence of the special stability-instability paradox situation that exists in South Asia. Pakistan's ambiguous nuclear doctrine does not state any particular threshold for nuclear use and has, it is argued, with the introduction of TNWs in its force structure, 'conventionalised' its nuclear weapons.

### **Role of Media and the Strategic Community in Nuclear Learning**

The strategic community in India along with the media have kept the discourse of nuclear policy in the public eye. However, as Nagappa points out, the debates and the output in the public domain do play a part in shaping the discourse: however, it is unclear as to how much that actually contributes to nuclear learning (Nagappa 2013). It is also difficult to determine to what extent the writings emanating out of think tanks and the media have an effect on nuclear decision-making. Chari opines that maybe a certain degree of indirect influence insofar as the publications of the media and think tanks inform people like members of parliament and other advisors who influence the actual decision-makers (Chari 2013).

Hasnain, however, argues that in the period between 1998 and 2014 the media's pace of development to comprehend the nuances and intellectual content of nuclear posturing has been severely wanting. According to him, most of the media discourse itself is shaped by specialists from the scientific community and the Armed Forces. The role of the media itself, beyond facilitating the views of others, has been, at best, peripheral.

The strategic community in India has been central to the nuclear narrative in the aftermath of the 1998 nuclear tests. The draft nuclear doctrine that was published in 1999 was a product of the deliberations of the National Security Advisory Board (NSAB) which was primarily composed of the members of the strategic community in India (Shankar 2013). The National Security Council of India too comprises members of this community, thus indicating that there is definitely a role that the strategic community plays in informing/advising the process of nuclear decision-making in an indirect manner. As Shankar points out, 'the Media remains the more open forum for generating debate on the subject albeit with less impact. It also provides an avenue for nuclear signalling.'

Kak points out that the Ministry of Defence's think tank, the Institute for Defence Studies and Analyses (IDSA), and subsequently, the Armed Forces and private think tanks have provided inputs to the political and military leadership, academia and the media. In this regard, K Subrahmanyam, the noted strategic doyen, who was the director of IDSA is noted to have served as a one-person national asset in shaping the nuclear discourse in India. The official endorsement of the draft nuclear doctrine (the lead for which had been taken by Subrahmanyam and the IDSA) by the GoI in 2003, with minor modifications, was, according to Kak an acknowledgement of the key role think tanks could play in shaping government policy on nuclear issues (Kak 2013).

## **Systemic Level of Analysis and the South Asian Nuclear Learning Model**

In this chapter, we will treat South Asia as our unit of analysis (with India and Pakistan as subunits) and interpret nuclear learning outcomes by both India and Pakistan given their interactions within the global system dictated by structural realism.

### **Pre-1998 Systemic Level: The NPT Outlaws**

The pre-1998 period in which both India and Pakistan were threshold nuclear weapons states was marred by the politics of non-proliferation at the systemic level where both countries were NPT outlaws. The decades preceding their overt nuclearisation were also dictated by the Cold War subtleties where Pakistan and India were courted by the US and the Soviet Union respectively in their attempts to win strategic outposts in South Asia. Though nuclear non-proliferation was the buzzword during the Cold War and both India and Pakistan were heavily sanctioned for their attempts to pursue nuclear weapons capability, both states continued operating outside the general norms of the global nuclear order.

What were their motivations and how did the system facilitate the making of two nuclear weapon states (NWS) outside the NPT? In his attempt to understand why states build nuclear weapons, Sagan (1996) presents three models of nuclear decision-making: the security model, the domestic politics model, and the norms model. Indian and Pakistani nuclear decision-making can be understood through the application of all three models. (An extended discussion of such application is beyond the scope of this study.) The most common explanation rooted in structural realism, however, does offer explanations for the espousal of the security model in South Asia (Hagerty 1998; Matinuddin 2002).

In the absence of any promise of extended nuclear deterrence, Pakistan decided to pursue nuclear weapons development to secure itself against the overwhelming conventional capabilities of its greater adversary, India (Kapur 1987). India, on the other hand, though having conducted a peaceful nuclear explosion in 1974 was still wary of developing a full-fledged nuclear weapons capability till the late 1970s. India faced not one but two adversaries: China, a nuclear-capable state which had defeated India in a bitter border confrontation in 1962; and Pakistan, a nuclear-hopeful state with which it shared an unpleasant legacy of Partition, a territorial dispute in Kashmir, and the history of having fought three wars. But according to Perkovich (2002), explanations under the security model are insufficient in their prediction of Indian nuclear decision-making. Perkovich finds a rationale for Indian nuclear motivation in the domestic factors that facilitated Indian nuclear decision-making (Perkovich 2002: 447). These domestic factors include: internal push for the bomb by the Indian strategic and scientific bureaucracy coupled with a strong Indian national identity synchronised with global ambitions (the norms model). Similarly, for Pakistan, the security model alone cannot explain the motivations for acquisition of nuclear weapons capability. Feroz Hassan Khan (2012) finds explanations for Pakistan's nuclear ambitions in the domestic politics model rooted in the variable of 'leadership'. Pakistan's nuclear programme was the brainchild of Zulfikar Ali Bhutto who favoured Pakistan's need for nuclear weapons capability following the loss of East Pakistan in 1971, and given Pakistan's military oriented strategic culture, it was only natural that the Pakistan Army adopted and nurtured the programme to its culmination.

Both India and Pakistan refused to sign the NPT, troubled by its inherently discriminatory nature enshrined in Article VI of the treaty and their own security imperatives. Article VI of the NPT calls upon the nuclear have-nots to abandon their nuclear ambitions in return of a commitment by NWS that cessation of an arms race and ultimate nuclear disarmament will eventually become a reality. For India, it was also the recognition of only those countries as NWS that exploded a nuclear device prior to 1 January 1967, which meant only five NWS were to be recognised, China being one of them (Weiss 2010). This was an uncomfortable proposition for India to accept. Likewise, it was not acceptable for Pakistan to join NPT as a non-NWS and since the late-1970s Pakistan has linked any progress on NPT on the condition of only simultaneous signatures with India. Both India and Pakistan maintain a similar stance on non-adherence to the Comprehensive Test Ban Treaty (CTBT) as well, even though both states are observing a unilateral moratorium on nuclear testing since 1998 (Nayyar 2008).

### **Lessons as NPT Outlaws**

Both India and Pakistan learned several lessons as NPT outlaws from the pre-1998 organised hypocrisy of the global system.

- No substantial progress on nuclear disarmament was made by the five NWS, therefore, they were not to be trusted on their promise of eventual disarmament.  
*Lesson learnt:* Self-reliance; global nuclear order is discriminatory.
- NWS continued to rely on nuclear weapons for deterrence purposes during the Cold War.  
*Lesson learnt:* Nuclear weapons have deterrence value.
- The five NWS were also the permanent five members of the UN Security Council with veto powers.  
*Lesson learnt:* Nuclear weapons are a currency of power and prestige in the international system.

Armed with these lessons from the pre-1998 international system, India and Pakistan continued with their nuclear weapons development and maintained ambiguity about their nuclear ambitions throughout the Cold War period. It was in May 1998 that India conducted five nuclear tests and Pakistan followed suit with six nuclear tests, thus declaring themselves new entrants to the nuclear club. (The motivations and intentions of India and Pakistan going overtly nuclear in 1998 have been thoroughly analysed by scholars and a discussion here is beyond the scope of this study.)

### **Systemic Level Post-1998: Nuclear South Asia and the Global Nuclear Order**

The post-1998 systemic level has altered both qualitatively and quantitatively with overt nuclearisation of South Asia. Although India and Pakistan are not recognised as *de jure* NWS or 'legitimate' members of the exclusive nuclear club, the international community has willy-nilly reconciled with the reality of nuclear weapons in South Asia.

India and Pakistan had an advantage as new NWS.

- They both had prior knowledge of the Cold War nuclear practices and arrangements, command and control mechanisms, CBMs and nuclear risk reduction procedures that existed between the US and the Soviet Union.
- They both had the hindsight of what worked for the two nuclear superpowers and what failed. But some scholars of South Asian nuclear studies suggest that India and Pakistan have forgotten the positive lessons from the Cold War and the presence of nuclear weapons in the region, in particular their employment of TNWs has contributed to strategic *instability* with grave implications for the international system (Fitzpatrick 2013).

In Section I, Ch. 3 of this study we have explained that any comparison of South Asian nuclear experiences with those of the Cold War superpowers is unfair due to several factors:

- the dissimilarity of history and nature of conflict between the two nuclear dyads;
- distinctive geostrategic imperatives in South Asia and the reality of the nuclear triangle between India, China and Pakistan; and
- the operational dynamics of the stability-instability paradox are different for India and Pakistan compared to the Cold War duo.

Owing to these peculiarities that are patent for South Asia, the post-nuclearisation lessons are different for both states individually and bilaterally owing to their unique strategic calculus. Furthermore, their interactions as NWS with other countries offer a range of lessons at the systemic level for all parties concerned which are inimitable.

How do India and Pakistan behave as NWS bilaterally and towards other states at the systemic level?

### **Pakistan's Strategic Rationale**

At the bilateral level, in Pakistan's strategic calculus the immediate threat comes from its principal rival, India. Its strategic outlook is sharply focused on countering threats resulting from a rising Indian conventional military build-up which threatens to perpetuate the existing conventional asymmetry between the two countries. Since Pakistan lacks the economic muscle to match the conventional strength of the Indian military, its absolute reliance on a nuclear weapons capability subsists to serve the dual purposes of thwarting Indian conventional *and* nuclear threats in an unstable environment. Pakistan's introduction of battlefield nuclear weapons is seen as threatening strategic stability even though Pakistan maintains that its hand was forced by the Indian limited war doctrine (Cold Start or 'Proactive' defence strategy), and that they augment Pakistan's current deterrence policy (Zahir 2011).

At the doctrinal level, Pakistan relies on strategic ambiguity, and, thus, has not formally announced its nuclear doctrine although several of its contours are clearly enunciated in policy statements made from time to time (Krepon 2012; Sagan 2008; Chakma 2004). Pakistan's commitment to credible minimum deterrence remains a vital part of its nuclear policy and it is argued that policy leads technological developments and not vice versa. Pakistan's command and control structure is delegative in nature where the decision to use nuclear weapons rests with its NCA leadership; it has adopted a No-First-Use Policy (NNFU) to maintain doctrinal ambiguity; and it follows a counter-value and counter-military (recently with the induction of battlefield nuclear weapons, Nasr and Hatf-IX)

nuclear targeting strategy. In Pakistan’s strategic thinking, its nuclear weapons are for ‘defensive’ purposes only, offering it full-spectrum deterrence, and are not war-fighting instruments.

**India’s Strategic Rationale**

In India’s strategic calculus, however, Pakistan is not the sole focus. Its strategic outlook expands to include nuclear China. Indian acquisition of force multiplier systems, modernisation of a robust ballistic and cruise missile programme with extended missile ranges capable of reaching China and beyond, and its interest in acquiring a BMD system hints at the progression of its missile programme. Unlike Pakistan, India announced its nuclear doctrine in 2003 which rests on: (1) maintaining a credible minimum deterrent; (2) a NFU posture; (3) a policy of massive retaliation (even though the doctrine does not use the term, ‘assured retaliation’ is implicit in it); (4) non-use of nuclear weapons against non-NWS; and (5) nuclear retaliation against biological and chemical weapons attacks on Indian Forces anywhere. Therefore, in India’s strategic thinking, its nuclear weapons are not tools for war-fighting or gaining operational advantages: rather, they are simply ‘instruments of retribution’ in the event deterrence breakdown (Tellis 2001).

**Table 1** Comparison of Indian and Pakistani Nuclear Doctrines

<i>India</i>	<i>Pakistan</i>
Credible minimum nuclear deterrence	Credible minimum nuclear deterrence
Assertive command and control structure/civilian control	Assertive command and control structure/civilian-military control/flexibility towards delegative C2 with the induction of TNWs
No First Use (nuclear retaliation against chemical and biological weapons attacks)	No No First Use
Massive retaliation designed to inflict unacceptable damage, Assured Retaliation	Massive and Assured Retaliation
Counter-value and counter-force targeting	Counter-value and counter-force targeting
Robust ballistic and cruise missile programme/induction of SSBNs (moving from dyads to triads)	Robust ballistic and cruise missile programme
Nuclear weapons-instruments of retribution	Nuclear weapons-for defensive use only, not for war-fighting

**South Asian Nuclear Learning Model and the US Constant**

At the systemic level, the US has been the only ‘constant’ variable in the South Asian nuclear model. In the wake of Pakistan’s nuclear tests in 1998, the US imposed sanctions suspending all economic and military aid to Pakistan only to be resumed in 2001 when Pakistan supported US strikes on Afghanistan after 9/11. Thus, Pak–US engagement since 2001 has predominantly been an economic and military partnership in the US-led war on terrorism. Indo-US relations, however, experienced a remarkable transformation after 1998, the signs of which were visible after the end of the Cold War. Although India was also subjected to economic sanctions after its nuclear testing in 1998, the Bush Administration simultaneously removed economic and military sanctions from India and Pakistan on 22 September 2001. In an unprecedented step, the Bush Administration successfully dehyphenated India and Pakistan in its strategic calculations and devised a new South Asia policy where it did not have to balance between choosing sides (Tellis 2008). According to Tellis:

the policy of dehyphenation is based on the judgment that the character of Washington’s diplomatic engagement with each South Asian capital autonomously is of far greater importance to U.S. interests than husbanding the complex and often frustrating relationship that exists between the two subcontinental states (Tellis 2008: 28).

This US policy, however, was soon put to the test.

The Kargil crisis of 1999 and the Twin Peaks crisis of 2001–2 between India and Pakistan brought the horrific realisation to South Asia that limited war was real and not just a theoretical possibility any more. Timely US mediation in the Kargil and Twin Peaks crises further ‘underscored the need for continuous high-level US attention toward South Asia’ (Nayak and Krepon 2002). Therefore, the US had to revise its South Asia policy to accommodate both countries in order to reduce the threat of nuclear war in the region. The Twin Peaks crisis placed Pakistan in a difficult position vis-à-vis its relationship with the US when it demanded President Musharraf’s commitment to deal with local terrorist outfits in a concrete manner to satisfy both India and the US that the terrorists would be apprehended. This crisis also gave the US the pretext for reactivating its dehyphenated policy in South Asia, which marked the beginning of the Indo-US strategic partnership in the form of the Next Steps in Strategic Partnership (NSSP) agreement announced in January 2004 (Tellis 2008: 30). The NSSP was the beginning of a process that culminated in the signing of the US–India Civil Nuclear Agreement in 2008, while India still remained outside of the fold of the NPT.

Pakistan voiced serious reservations about the Indo-US nuclear cooperation and on the subsequent waiver granted by the Nuclear Suppliers Group (NSG) in 2008 for export of nuclear materials and technology to India for its civilian nuclear programme. Pakistan maintains that the US and other members of the NSG should extend nuclear cooperation to countries through a non-discriminatory and criteria-based approach. Even though China, as per its previous nuclear cooperation commitment, is providing two additional nuclear reactors (Chashma 3 and 4) to Pakistan, they would cover only ‘20 percent of its current electricity shortfall’, it will neither provide ‘the international status nor the equality with India that Pakistan seeks’ (Dalton, Hibbs and Perkovich 2011: 3). Pakistan also has reservations on starting negotiations on a Fissile Material Cut-Off Treaty (FMCT) since it believes that such a treaty would perpetuate fissile material stockpiles asymmetry between India and Pakistan at the current levels. As per the Indo-US nuclear cooperation agreement, India has given its commitment to facilitate the FMCT process once it starts, but Pakistan is firmly holding on to its position of seeking a revision in the FMCT draft to include ‘reduction of current stockpiles’ by all members of the nuclear weapons fraternity as a disarmament measure along with a cut-off on future production of fissile materials as a non-proliferation measure. Table 2 gives an updated profile of both countries on export control regimes, non-proliferation initiatives and safeguards.

**Table 2** India and Pakistan Export Control Regimes

<i>Multilateral Nuclear Arrangements</i>	<i>India</i>	<i>Pakistan</i>
Australia Group	Not a member	Not a member
Missile Technology Control Regime	Not a member	Not a member
Nuclear Suppliers Group	Not a member	Not a member
Wassenaar Arrangement	Not a member	Not a member
International Atomic Energy Agency (IAEA) Additional Protocol	Approved by IAEA on 3 March 2009	Not negotiated
Global Initiative to Combat Nuclear Terrorism	Not a participant	Participant
Hague Code of Conduct against Ballistic Missile Proliferation	Not a participant	Not a participant
Proliferation Security Initiative	Not a participant	Not a participant
UN Security Council Resolution No. 1540	Adopted-filed requested report	Adopted-filed requested report

*Source:* Derived from Arms Control Association: Arms Control and Proliferation Profile of India and Pakistan, <http://www.armscontrol.org/factsheets/indiaprofile> and <http://www.armscontrol.org/factsheets/pakistanprofile>

The global nuclear order is led by the US and its expectations from both India and Pakistan are different from each state given their individual geostrategic importance to the US. In their dealings with the leading proponents of the non-proliferation regime, both India and Pakistan as two NWS have joined various multilateral non-proliferation and nuclear security initiatives, but still choose to remain outside the NPT unless they are recognised as NWS. (For a complete arms control profile of both countries, see Annex 1.)



## South Asian Missile Proliferation and the Systemic Imperatives

The quest for a credible, efficacious, and potent delivery mechanism for nuclear weapons has led to the proliferation of missile technology in South Asia. While the development of missile technology has ostensibly been to supplement and augment existing conventional force structures, the strong nuclear underpinnings of the race are evident given that missile proliferation really took off in the subcontinent in the aftermath of the 1998 nuclear tests. It is important to study missile proliferation as a level of analysis in the study of nuclear learning in South Asia. This is because the to-and-fro in terms of missile testing and technology demonstrations is an important aspect of the strategic weapons behaviour that is peculiar to the South Asian nuclear relationship. India and Pakistan have been engaged in a ‘missile race’ for the better part of a decade now. What is interesting in this dynamic is that while Pakistan’s missile development has been aimed at ensuring deliverability and deterrence with regard to India, the latter’s missile development has been aimed at both the nuclear nations that it shares its borders with, Pakistan and China. This has precipitated the development of a range of different types of missiles in the region. This chapter shall first consider the state of missile technology in South Asia in terms of the important strategic missile systems that are being tested and are in the pipeline. The dynamics of missile testing and missile proliferation in the region shall then be considered. The doctrinal conundrums that are thrown up by the introduction of new missile technology in South Asia shall also be examined along with the effects of new strategic technologies like BMD and TNWs. Finally, the ‘learning’ offered by the strategic weapons behaviour vis-à-vis missile proliferation in South Asia shall be examined.

### State of Missile Technology in South Asia

While both countries had been engaged in capacity building with regard to missile technology from the 1960s onwards, it was in the late 1980s that these efforts began to bear concrete results. With the institution of the Integrated Guided Missile Development Programme (IGMDP) in 1983, India was on the track of developing five missiles, the Prithvi, Trishul, Akash, Nag, and Agni (meant to be a technology demonstrator). Prithvi was first tested successfully in 1988, announcing the arrival of India’s most successful indigenous defensive research project. Pakistan, though, was not far behind. Within a year of Prithvi being tested, Pakistan tested its Hatf-1 and Hatf-2 missiles though both missiles were suspected to be modified versions of French sounding rockets (Nuclear Threat Initiative 2013). In the decades following the Prithvi’s and Hatf’s successful induction, there was an exponential increase in the missile capabilities of both countries.

As of 2013, India possesses a host of missiles, which are meant to augment both its conventional and nuclear forces. While its initial armoury was ostensibly oriented towards Pakistan, the testing of the 5,000-km range Agni-V<sup>6</sup> and the announcement of the development of the Agni-VI with MIRV (Multiple Independently Targetable Re-entry Vehicles), and MARV (Manoeuvrable Re-entry Vehicles) capability (Shukla 2013) exhibits a shift of focus away from Pakistan and towards China. This, however, does not relegate the position of Pakistan as the primary strategic threat to India for which it has deployed missiles like Prithvi-I and II, Dhanush and Agni-I, II, and III, possessing the capacity to launch missile strikes within any part in the territory of Pakistan. The development of Prahaar and Pragati<sup>7</sup> (with a range of 60–170 km) is meant to fulfil the gap between the ranges of the multi-barrel Pinaka rocket system and Prithvi-I as conventional battlefield support systems (DRDO 2013). The development and deployment of the BrahMos supersonic cruise missile with a range of 290 km capable of being launched from air, sea or land has considerably augmented its short-range conventional strike capabilities. To further augment these capabilities, a hypersonic BrahMos-II is currently under development. While BrahMos is a product of an Indo-Russian joint venture, the DRDO’s attempts at developing its own nuclear-capable cruise missile Nirbhay, with a range of 1,000 km has not had much success yet (Pandit 2013).

India has made considerable progress in the field of Submarine-Launched Ballistic Missiles (SLBMs) as well. As of January 2013, the development phase of the nuclear-capable K-15 (Sagarika) SLBM with a range of 700 km was completed. It shall be deployed, thus operationalising the Indian nuclear triad, as soon as the INS *Arihant* ballistic

<sup>6</sup> The range of Agni-V has been subject to debate. Officially, its range is 5,000 km, thus making it fall short of the 5,500-km range required for it to be categorised as an ICBM. China has claimed that the Agni-V can reach ranges up to 8,000 km (*Outlook* 2012; Dasgupta 2012).

<sup>7</sup> Pragati is an export variant of Prahaar with slight modifications (Press Trust of India 2013).

missile submarine (SSBN) is inducted into the Navy (Mallikarjun and Subramanian 2013). Other SLBMs like the K-4 with greater range of 3,500 km are under development. Bharat Karnad (2008) writes that an SLBM with a greater range of 5,000–6,000 km range is also under development by the DRDO (Karnad 2008: 81–2). This development again is ostensibly aimed at China.

**Table 3** State of Missile Forces in South Asia (2013): India's Missile Forces

<i>Missile</i>	<i>Type</i>	<i>Range (km)</i>	<i>Payload (kg)</i>	<i>Nuclear- Capable</i>	<i>Status</i>
Agni-I	MRBM	800–1,400	2,000	Yes	Operational since 2004
Agni-II	IRBM	<2,000	1,000	Yes	Operational since 2001
Agni-III	IRBM	3,500	2,490	Yes	Operational since 2011
Agni-IV	IRBM	4,000	800	Yes	Under development
Agni-V	IRBM	5,000	1,000	Yes	Under development
Agni-VI	ICBM	5,000–6,000	3,000	Yes	Under development
Prithvi-I	SRBM	150	1,000	Yes	Operational since 1994
Prithvi-II	SRBM	290	500–1,000	Yes	Operational since 2004
Prithvi-III/ Dhanush	SRBM or SLBM	250–350	500–1,000	Yes	Operational since 2010
K-15 Sagarika	SLBM	700	500	Yes	Under development
K-4	SLBM	3,500	1,000	Yes	Under development
K-5	SLBM	1,500	NA	Yes	Under development
K-?	SLBM	6,000	NA	Yes	Under development
Trishul	Surface-to-air	9	5.5	No	Under development
Akash	Surface-to-air	25	55	No	Under development
Pinaka	Multi-barrel rocket system	40	—	No	Operational since 1999
Pinaka Mark II	Multi-barrel rocket system	60	—	No	Under development
BrahMos	Cruise missile	290	200–300	No	Operational since 2005
BrahMos-II	Hypersonic cruise missile	290	200–300	No	Under development
Surya	ICBM	12,000	2,500	Yes	N/A
Nirbhay	Cruise missile	1,000	450	Yes	Under development
Shaurya	Cruise missile (submarine- launched)	750	1,000	Yes	Under development
Astra	BVRAAM**	80–100	15	No	Under development
Prahaar	SRBM***	150	200	No	Under development
Pragati	SRBM***	60–170	200	No	Under development

\*\* BVRAAM: Beyond visual range air-to-air missile.

\*\*\* Both the Prahaar and the Pragati are in the category of the ATACMS (Army Tactical Missile Systems) designed to cover the gap in range between the Pinaka rockets and Prithvi-I.

**Table 4** State of Missile Forces in South Asia (2013): Pakistan's Missile Forces

<i>Missile</i>	<i>Alternative Name</i>	<i>Type</i>	<i>Range (Km)</i>	<i>Payload (Kg)</i>	<i>Nuclear-Capable</i>	<i>Status</i>
Hatf-1		SRBM	70–100	500	Yes	Operational since 1992
Hatf-2	Abdali	SRBM	180–200	250–450	Yes	Operational since 2005
Hatf-3	Ghaznavi	SRBM	290–320	700	Yes	Operational since 2004
Hatf-4	Shaheen-1	SRBM	750	700	Yes	Operational since 2003
Hatf-5	Ghauri-1	MRBM	1,300	500	Yes	Operational since 1998
Hatf-5	Ghauri-3	IRBM	3,000–3,500	NA	NA	Under development
Hatf-5A	Ghauri-2	MRBM	1,500–1,800	700	Yes	Operational
Hatf-6	Shaheen-2	IRBM	2,500	700	Yes	Operational since 2005
Hatf-7	Babur	Cruise missile	750	450–500	Yes	Operational since 2010
Hatf-8	Ra'ad	ALCM	350	NA	Yes	Operational since 2007
Hatf-9	Nasr	Surface-to-surface multitube ballistic missile	60	NA	Yes	Under development

*Sources:* (Bharat Rakshak 2013; Chansoria 2011; DRDO 2013; Nuclear Threat Initiative 2011; Nuclear Threat Initiative 2013; Missilethreat 2013; Lele and Bhardwaj 2013; Pal and Selvamurthy 2008; PTI 2013; Shukla 2013; Romashkina and Topychkanov 2013).

Pakistan's missile development is aimed at attaining 'full-spectrum deterrence' against its adversaries. Almost all of Pakistan's missiles possess the capability of carrying nuclear warheads. Missiles in the Shaheen and Ghauri series are particularly capable of conducting counter-value strikes against India. Pakistan's recent thrust has been on cruise missiles and the Short-Range Ballistic Missile (SRBM) Hatf-IX (Nasr). Hatf-VII (Babur) and the air-launched Hatf-VIII (Ra'ad) are both nuclear-capable cruise missiles with a range of 750 km and 350 km respectively. Babur possesses stealth features and possesses 'terrain contour matching' and 'digital scene matching and area co-relation' (Press Trust of India 2012). The greater threat for India though comes from Nasr. It is a battlefield/TNW, with a range of 60 km, which threatens to lower the nuclear threshold between India and Pakistan. The missile can be launched from the A11A/A100-E multiple launch rocket system (possibly of Chinese origin) and possesses shoot and scoot abilities (Nagappa et. Al. 2013; ISPR 2011). Owing to the centralised control over missile development by the SPD, it is unknown as to what missile projects are currently in the pipeline for Pakistan.

#### **Missile Politics in South Asia and Structural Realism**

The development of missiles in the subcontinent may prima facie find their explanation in structural realism. The development of missiles would, thus, be in keeping with the need to enhance a state's security with regard to the growing defence capabilities of its adversary. In India, the pursuit of greater range and penetrability of missile systems against both Pakistan and China is not only because of its adversarial relationship with each of the two states: India perceives the Sino-Pakistan relationship to be particularly threatening to its national security. The transfer of M-11 missiles from China to Pakistan in the early 1990s, Tritium (1986), the sale of ring magnets to Pakistan (1994–5), the sale of the Chashma reactors to Pakistan (Centre for Non-Proliferation Studies 1999) have all led to India being wary of the Sino-Pakistan 'all-weather friendship'. This has also led to military and defence research and production to enhance the capability to either deter, or to fight a two-front war, should the situation ever arise.

While these systemic security driven factors are a definite motivation for missile proliferation from the Indian side, they are not the sole, or even primary factors guiding decision-making with regard to strategic weapons. As Vipin Narang (2009) argues, domestic political ideology in the form of oppositional nationalism, and techno-nationalist pride and prestige are also major factors in the politics of missile development and testing in India (Narang 2009: 138). While it cannot be established decisively whether a nationalist BJP Government coming to power in India shall see strategic weapons development move ahead at a faster pace than it has under the Congress Government, the variable of technological pride and prestige is definitely a strong factor that drives the strategic weapons development and behaviour in India. The missile programme of DRDO has been a flagship programme that has changed the image of the institution from one of incompetence to that of an institution espousing the highest ideals of technical excellence (Kampani 2003: 48). In the aftermath of the IGMDP, DRDO has been seen as a crucial cog in the project of Indian self-reliance on high technology and has been a crucial variable in the process of determining the path of missile development in India. This is not only restricted to the technical development of weapons

systems, but the political and strategic imperative to develop missiles has also been largely shaped by the organisation. As Narang points out, one aspect of this has been the issue of technological determinism, whereby missile testing has been driven by technical imperatives to collect data and fulfil other technical requirements while the other has definitely been to exhibit technological sophistication and techno-nationalist pride (Narang 2009: 157). For Pakistan, however, the primary imperative in terms of strategic weapons development has been to respond to Indian strategic weapons developments (Dalton and Tandler 2012: 12; Narang 2009: 156). The development of Hatf-IX (Nasr) is argued to be a direct result of the Indian 'Cold Start' doctrine<sup>8</sup> and the pursuit of the Indian BMD programme. The Indian BMD programme is also perhaps the reason that Pakistan's missile development has taken a turn towards short-range/tactical and cruise missiles. After the testing of the Babur cruise missile in 2005, (former) President of Pakistan, Pervez Musharraf said, 'There was talk of India getting Patriot missiles [for missile defense], and there was a feeling that there was an imbalance, which is being created because of the purchase of very advanced technology weapons. Let me say, this improves the balance' (quoted in Dalton and Tandler 2012: 12). The primary guiding dynamic in this case, thus, seems to be an action/reaction policy that aims at maintaining some form of strategic balance. For Pakistan, the development of Hatf-IX (Nasr) is also a move to deter India's conventional force superiority. While the possible pre-delegation of launch authority to battlefield commanders is inherently a destabilising move, it does deter the possibility of India conducting punitive conventional military strikes on Pakistan's territory as a response to subconventional violence emanating from Pakistan.

The potential threat to the potency of Pakistani missiles posed by the BMD capability of India has led to the development of cruise missiles and TNWs like Nasr. The comparatively cheaper process of production of cruise missiles means that greater numbers can be manufactured at lower costs, thereby undermining the efficacy of any missile defence shield.

The fact that Pakistan has responded with multiple missile systems to the Indian BMD threat even though neither the Cabinet Committee on Security in India nor the Indian military has specified the role of BMD in the Indian security doctrine reveals two factors. First, the need to 'balance' vis-à-vis Indian strategic weapons developments is so urgent in Pakistan that it does not want to wait and see if these developments are, in fact, technological advancements for the sake of research, or whether these weapon systems will actually find a place in the Indian strategic doctrine. Second, the 'develop and demonstrate' policy of DRDO is a signalling tool, which is taken seriously by Pakistan but is not necessarily taken seriously by India. The lesson for the latter country in this case is that such signals must be regulated and calibrated in order for the two countries to not fall into a security dilemma spiral precipitated by misperception, though mutually deliberate in some cases.

### **Missile Development and Doctrinal Conundrums**

Strategic weapons, like nuclear weapons, are political tools. They are instruments of signalling that indicate capability and not necessarily intentions. However, it is on the basis of the exposition of capability that states must react in order to ensure minimal vulnerability and maximum security. It is in this regard that the 'number' of tests conducted becomes immaterial when compared to the 'types' of missiles tested for the implications of their specifications. Missile developments and testing in India-Pakistan context, therefore, are read as political messages and triggers for strategic responses.

### **Ballistic Missile Defence**

The Indian BMD system is a two-tiered system that is meant to intercept missiles at the exo-atmospheric and endo-atmospheric levels. The Prithvi Air Defence (PAD) missile targets incoming missiles through high-altitude interceptions in the exo-atmospheric level, while the Advanced Air Defence (AAD) missile intercepts hostile missiles at low (endo-atmospheric) altitudes (Rajagopalan 2011: 3; Subramanian 2007). Phase I of the BMD programme was completed in June 2013, and it can intercept incoming missiles from a range of up to 2,000 km and this phase is ready for deployment.<sup>9</sup> The second phase of the BMD programme is currently developing capabilities that shall be able to intercept missiles that are fired from within a range of 5,000 km (Press Trust of India 2013). This capability is evidently aimed at neutralising Chinese missile threats to India.

BMD, however, does not fit in well with the stated Indian nuclear doctrine of NFU. Not only that, there is no mention of BMD in the 2003 nuclear doctrine (Cabinet Committee on Security 2003). As Rajesh Rajagopalan

<sup>8</sup> The Cold Start Doctrine or Proactive Defence Strategy of India envisages quick mobilisation for multiple offensives across a wide front. Eight rapidly deployable Integrated Battle Groups (IBG) supported by the Navy and Air Force shall be trained and ready to make swift inroads into enemy territory as a punitive measure in case of the escalation of subconventional violence from Pakistan (Ahmed 2012: 456).

<sup>9</sup> It has been reported that New Delhi and Mumbai shall be the first cities to have the BMD shield deployed (Subramanian 2012).

argues, the acquisition of BMD contradicts the very nature of the Indian nuclear doctrine (Rajagopalan 2004: 214), mainly because the BMD by default accentuates the first-strike capabilities of a state. BMD by itself does not possess the capacity to retaliate against a first strike by Pakistan. It would only work in case India were to launch a first strike on Pakistan and in response Pakistan would retaliate with its surviving nuclear warheads towards India, thus activating Indian BMD response to intercept those incoming missiles from Pakistan. This first-strike capability would then be accentuated by the development of MIRV and MARV capabilities as well as hypersonic missiles (BrahMos-II). The Indian BMD, thus, elicits a contradictory doctrinal review (Rajagopalan 2007; Kumar 2012) vis-à-vis India's current NFU posture.

### **Canisterised/Mated Nuclear Weapons**

At present it is assumed that both India and Pakistan keep their missiles de-mated from nuclear warheads. However, recent missile development has invoked certain doubts in this regard. For example, the 'quick-response' multi-tube ballistic missile Hatf-IX would invariably be in close proximity in the battlefield, thus demanding that: (1) it be mated with its nuclear warhead; and (2) be operational under delegative command and control sanctioning by a battlefield commander, a degree of autonomy for the use of the weapon system (Nagappa et al. 2013: 31). There are multiple issues with this scenario: (1) in the event of a loss of communication during war with the NCA, this could lead to the deployment of the missile at the discretion of the battlefield commander; (2) the loss of possession of the weapon during a terrorist attack is also a concern; and (3) in case of an advancing enemy threatening the possession of these weapons, would the commander then choose to use the missiles, or lose them to the enemy? (Nagappa et al. 2013: 31-2).

With regard to India, the imminent operationalisation of the nuclear triad with the deployment of the SSBN INS Arihant poses similar doctrinal conundrums. The nuclear-tipped K-15 Sagarika missiles that the submarine is set to carry would require a mating of the missile with the warhead. This raises similar questions about the command and control governing the use of the missiles. In case of loss of communication with the Strategic Forces Command during war or a decapitating strike wiping out the NCA, how would the submarine commander react in the absence of information and orders from the NCA? How will the scenario unfold if there is loss of command of the ship itself? These are some questions that require answers before the nuclear triad is operationalised. The mating of nuclear warheads with their delivery mechanisms is inherently escalatory and poses questions for the existing nuclear doctrines of both countries.

## Conclusion

### South Asia: From Nuclear Learning to Nuclear Wisdom

To state the obvious: nuclear weapons in South Asia are here to stay. Both India and Pakistan have augmented their nuclear infrastructures over the past 15 years since their nuclearisation in 1998 and continue to modernise their nuclear assets and delivery systems to suit their strategic needs given their unique strategic outlooks. Where possession of nuclear weapons by each country has facilitated their flirtation with the idea of limited war, it has also taught them valuable lessons about the limits of escalation under the nuclear parasol. Both countries figure prominently in American strategic calculations, which is evident from the fact that in each bilateral crisis with nuclear overtones, the US has been approached to broker peace through crisis management. However, outright reliance on third-party mediation to defuse crises between India and Pakistan signifies dependence on and strategic molycoddling by extraregional powers. An important learning outcome in this regard is to devise bilateral mechanisms for crisis prevention and management to decrease reliance on third parties, ensuring long-term stability. While nuclear South Asia has learned valuable lessons from the Cold War nuclear rivals (the US and the Soviet Union), their own history, geography, strategic culture, doctrinal needs and force postures demand unique approaches for CBMs and arms control, beyond the Cold War model.

The levels of analysis approach employed in this study helps us understand how both countries have grown from being new nuclear entrants to mature and responsible nuclear weapons states at each level: individual, state, and systemic. However, India and Pakistan have a long way to go before their individual and mutual nuclear learning translates into nuclear wisdom.

**Table 5** Nuclear Learning in South Asia and the Levels of Analysis

<i>Third Image: The System</i> <i>Global Nuclear Order: Threats and Opportunities</i>	
<i>India</i>	<i>Pakistan</i>
External threats from Pakistan and China	External threats from India
Indo-US strategic partnership	Nuclear energy cooperation with China
Reliance on US for Indo-Pak crisis management	Reliance on US for Indo-Pak crisis management
Realist aspirations and power projection	Realist aspirations and security maximisation
Increasing nuclear arsenal and delivery systems	Increasing nuclear arsenal and delivery systems
<i>Second Image: The State</i> <i>Strategic Outlook</i>	
Moved from threshold nuclear state (pre-1998) to NWS (post-1998)	Moved from threshold nuclear state (pre-1998) to NWS (post-1998)
Moved from existential deterrence to credible minimum deterrence	Moved from existential deterrence to credible minimum deterrence
Shift from high to low level of strategic ambiguity	Maintains strategic ambiguity about nuclear policy
Declared nuclear doctrine, NFU policy, massive retaliation	Undeclared nuclear doctrine, No NFU policy, MAD
<i>First Image: The Individual</i> <i>Nuclear Policy and Decision-Making Elite</i>	
No shift pre- and post-1998	No shift pre- and post-1998
Politico-scientific	Politico-military

### Learning from the Bilateral Crises

The international community views South Asia as a nuclear minefield. India and Pakistan have engaged in highly destabilising crises situations in the years immediately after their overt nuclearisation, a detailed examination of which has been conducted in Ch. 2 of this study. Both India and Pakistan have survived impossible crises situations

as the only two nuclear weapons states to ever have faced each other in the longest stand-off in history (10 months), but post-crisis lessons still need to be learned at operational and strategic level to affirm that:

- 1) No measures should be taken by either country to destabilise mutual nuclear deterrence;
- 2) Nuclear signalling early on in the conflict has the potential of gearing a crisis towards rapid nuclear escalation;
- 3) Limited war under the nuclear umbrella is a lethal doctrine, and, thus, should be abandoned;
- 4) Bilateral mechanisms of crisis stability should be devised to reduce the reliance on third-party crisis management;
- 5) There should be a continuous process of conventional and nuclear trust and CBMs between the two countries;
- 6) There should be no ambiguity about nuclear force postures vis-à-vis each other; and
- 7) The deterrence value of battlefield nuclear weapons is fragile and provocative to say the least.

### **Learning from the Missile Race**

The strategic trajectories of both India and Pakistan post-nuclearisation can be ascertained by their nuclear weapons developments and proliferation of missile technology has been the primary outcome of this process. The strategic behaviour of both countries stimulated by reciprocal missile testing and deployment offers lessons with regard to the evolving South Asian nuclear model.

- 1) Missile testing is a 'tool of policy' (Khan 2004) in South Asia, which is used by India and Pakistan to send messages to each other.
- 2) Missile development is not merely a 'security-seeking' behaviour by both states. For India, domestic ideological factors, techno-nationalist pride, and the presence of a powerful defence-scientific community pushing for the development of missile forces are important contributing factors. For Pakistan, it is a matter of balancing Indian conventional superiority and furthering technological advances and aspirations to keep up in the missile race.
- 3) Technological determinism in one country leads to concomitant technological advances in the other country.
- 4) Missile development in South Asia is often extra-doctrinal.
- 5) Strategic doctrines of both states are not amenable to doctrinal adaptability vis-à-vis their technological advancements.
- 6) Though missile development is asymmetrical between India and Pakistan, status quo has been maintained due to considerably larger Indian missile forces having to deal with China as an adversary as well. On the other hand, Pakistan has customised its missile development programme by focusing more on shorter-range cruise and ballistic missiles to counter threats emanating from Indian BMD developments.

### **Road Map to Mutually Assured Stability in South Asia**

There is an absolute need for the two nuclear-armed neighbours to keep the channels of communication and dialogue open. The process of composite dialogue that started in 2004 and crashed in 2008 after the Mumbai attacks is symbolic of a structure that is fragile, unstable and prone to collapse during crisis. This study proposes the following CBMs to enhance risk reduction and strengthen the already-existing security and confidence-building regime.

#### **Proposals for Future Risk-Reduction CBMs**

1. CBMs on stressing early warning.
2. Establish a Bilateral Crisis Management Centre.
3. CBMs on reducing the threat of cross-border nuclear sabotage.
4. Adopt a common nuclear-strategic lexicon to avoid miscommunication and misunderstanding.
5. Engage academia and experts in strategic debates for policy inputs.
6. Agreement on Conflict Avoidance Measures (CAMs), ensure steps to establish bilateral and multilateral preventive diplomacy.
7. Come together on a common forum like the Nuclear Security Summit to address common concerns related to but not restricted to nuclear and radioactive security.
8. Promote and establish a bilateral, if not multilateral, No First Use agreement.

There are prospects of Mutually Assured Stability in the region, which need to be explored by both countries to their advantage. This can be addressed at multiple levels, for example, fostering greater economic ties, and promoting mutual incentives for trade to act as tools of crisis prevention, addressing issues of water security, using the SAARC platform for greater cooperation on issues of multilateral concern, etc. While there are numerous challenges to peace and stability in South Asia, there are also many opportunities in the region, where people of both countries desire peace. It is important in this regard that lessons from our shared experiences be constantly learnt, earlier lessons be

refreshed, and a constant engagement on both sides be continued in an uninterrupted manner. To this effect a unilateral commitment towards mutually assured stability from both countries will go a long way to ameliorate the tensions that dominate this relationship.



## References

### Books

- Bajpai P. Kanti, P.R. Chari, Pervaiz Iqbal Cheema, Stephen P. Cohen and Sumit Ganguly. 1995. *Brasstacks and Beyond: Perception and Management of Crisis in South Asia*. New Delhi: Manohar.
- Basrur, M. Rajesh. 2006. *Minimum Deterrence and India's Nuclear Security*. Stanford, CA: Stanford University Press.
- Basrur, M. Rajesh. 2008. *South Asia's Cold War: Nuclear Weapons and Conflict in Comparative Perspective*. Abingdon and New York: Routledge.
- Chari, P.R. 2001. 'Nuclear Restraint, Risk Reduction and the Security-Insecurity Paradox in South Asia', in Michael Krepon and Chris Gagné (eds.) *The Stability-Instability Paradox: Nuclear Weapons and Brinkmanship in South Asia*. Washington DC: The Henry L Stimson Center, June.
- Chari P.R, Pervaiz Iqbal Cheema and Stephen P. Cohen.2003.*Perception, Politics and Insecurity in South Asia: The Compound Crisis of 1990*. London: Routledge Curzon.
- Chari P.R, Pervaiz Iqbal Cheema and Stephen P. Cohen.2007.*Four Crises and a Peace Process: American Engagement in South Asia*. Washington D.C: Brookings Institution Press.
- Cheema, I. Zafar. 2000. 'Pakistan's Nuclear Use Doctrine and Command and Control', in Peter Lavoy, Scott Sagan and James Wirtz (eds.), *Planning the Unthinkable: How New Powers Will Use Nuclear, Biological and Chemical Weapons*. Ithaca: Cornell University Press.
- Dunn, Lewis.1982. *Controlling the Bomb: Nuclear Proliferation in the 1980s*. New Haven: Yale University Press.
- Fair C. Christine. 2009. 'Mililitants in the Kargil Conflict: Myths, Realities and Impacts' in Peter Lavoy ed. *Asymmetric Warfare in South Asia: The Causes and Consequences of the Kargil Conflict*. New York: Cambridge University Press.
- Ganguly Sumit and Devin Hagerty.2005. *Fearful Symmetry: India-Pakistan Crises in the Shadow of Nuclear Weapons*. New Delhi: Oxford University Press.
- Ganguly, Sumit and S. Paul Kapur.2010. *India, Pakistan and the Bomb: Debating Nuclear Stability in South Asia*. New York: Columbia University Press.
- Gilpin, Robert. 1981. *War and Change in World Politics*. New York: Cambridge University Press.
- Hagerty, T. Devin. 1998. *The Consequences of Nuclear Proliferation: Lessons from South Asia*. Cambridge, MA: The MIT Press.
- Jervis, Robert. 1976. *Perception and Misperception in International Politics*. Princeton, NJ: Princeton University Press.
- Jervis, Robert. 1984. *The Illogic of American Nuclear Strategy*. Ithaca, NY: Cornell University Press.
- Jervis, Robert. 2009. Deterrence, Rogue States, and the US Policy. in T.V. Paul, Patrick Morgan and James Wirtz (eds.), *Complex Deterrence: Strategy in the Global Age*, Chicago: University of Chicago Press.
- Kapur Ashok.1987. *Pakistan's Nuclear Development*. New York. Croom Helm.
- Kargil Review Committee.2000.*From Surprise to Reckoning*, New Delhi: Sage Publications.
- Karnad, Bharat. 2008. *India's Nuclear Policy*, Westport: Praeger Security International.
- Kaufmann, K. William. 1954. *The Requirements of Deterrence*. Princeton: Center of International Studies.
- Khan, Feroz Hassan. 2004. 'Nuclear Signalling Missiles and Escalation Control in South Asia' in Michael Krepon et al. *Escalation Control and the Nuclear Option in South Asia*, Washington D.C.: Stimson Center.
- Khan, Hassan Feroz, Peter Lavoy and Christopher Clary.2009. 'Pakistan's Motivations and Calculations for the Kargil Conflict' in Peter Lavoy ed. *Asymmetric Warfare in South Asia: The Causes and Consequences of the Kargil Conflict*. New York: Cambridge University Press.
- Khan, Hassan Feroz. 2012. *Eating Grass: The Making of the Pakistani Bomb*. Palo Alto, CA: Stanford University Press.
- Krepon, Michael. 2003. *The Stability-Instability Paradox: Misperceptions and Escalation Control in South Asia*. Stimson Center Report. Washington, DC: Henry L. Stimson, May.
- Lake, David. 1997. 'Regional Security Complexes: A System Approach', in David Lake and Patrick M. Morgan (eds.) *Regional Orders*. University Park, PA: The Pennsylvania State University Press, 45-67.
- Lavoy, R. Peter. 1994. 'Civil-Military Relations, Strategic Conduct, and the Stability of Nuclear Deterrence in South Asia', in Scott D. Sagan (ed.) *Civil-Military Relations and Nuclear Weapons*. Stanford, CA: Stanford University Center for International Security and Arms Control, 79-109.
- Malik V.P.2006. *Kargil: From Surprise to Victory*. New Delhi: HarperCollins.

Matinuddin Kamal. 2002. *The Nuclearisation of South Asia*. Karachi: Oxford University Press

Mazari M. Shireen. 2003. *The Kargil Conflict 1999: Separating Fact from Fiction*. Islamabad: Ferozsons.

Musharraf Pervez. 2006. *In the Line of Fire: A Memoir*. New York: Simon and Schuster.

Paul, T.V. 1988. 'Power, Influence and Nuclear Weapons: A Reassessment', in T.V. Paul, Richard J Harknett, and James J Wirtz (eds.) *The Absolute Weapon Revisited: Nuclear Arms and the Emerging International Order*. Ann Arbor: The University of Michigan Press, 19–46.

Paul, T.V. 1998. 'The NPT and Power Transitions in the International System', in Raju G C Thomas (ed.) *The Nuclear Non-proliferation Regime: Prospects for the 21<sup>st</sup> Century*. Houndmills, UK: Macmillan, 56–74.

Perkovich George. 1999. *India's Nuclear Bomb: The Impact on Global Proliferation*. Los Angeles: University of California Press.

Pillai, K. Raman. 1969. *India's Foreign Policy: Basic Issues and Political Attitudes*, Meerut: Meenakshi Prakashan.

Rabasa, Angel et al. 2009. *The Lessons of Mumbai*. Santa Monica, CA: RAND Corporation

Raghavan, Srinath. 2008. A Bad Knock: The War with China, 1962, in Daniel P Marston and Chandar S Sundaram (eds.), *A Military History of India and South Asia: From the East Asia Company to the Nuclear Era*, New Delhi: Pentagon Press.

Rajagopalan, Rajesh. 2007. 'Nuclear Deterrence and Defence'. In *Aerospace Power and India's Defence*, ed. Jasjit Singh, 72–81. New Delhi: Knowledge World.

Rehman, Iskander. 2012. Drowning Stability: The Perils of Naval Nuclearization and Brinkmanship in the Indian Ocean. *Naval War College Review*, 65(4), 64–88.

Ray, Jayanta K. 2011. *India's Foreign Relations, 1947–2007*, New Delhi: Routledge.

Reidel Bruce. 2009. 'American Diplomacy and the 1999 Kargil Summit at Blair in Peter Lavoy ed. *Asymmetric Warfare in South Asia: The Causes and Consequences of the Kargil Conflict*. New York: Cambridge University Press.

Reidel Bruce. 2013. *Avoiding Armageddon*. Washington D.C.: Brookings Institution Press.

Subrahmanyam K. 1993. 'Capping, Managing or Eliminating Nuclear Weapons?' in Kanti Bajpai and Stephen P. Cohen ed. *South Asia after the Cold War*. Boulder: Westview Press.

Reiss, Mitchell. 1988. *Without the Bomb: The Politics of Nuclear Nonproliferation*. New York: Columbia University Press.

Romashkina, Natalia and Petr Topychkanov (2013), 'Regional Missile Defence Programs (India, Israel, Japan, and South Korea)', in Natalia Bubnova (ed), *Missile Defense: Confrontation and Cooperation*, Moscow: Carnegie Moscow Center.

Sagan, D. Scott and Waltz, Kenneth. 2002. *The Spread of Nuclear Weapons: A Debate Renewed*. New York: W.W. Norton and Company.

Sagan, D. Scott. 1993. *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons*. Princeton, NJ: Princeton University Press.

Sagan D. Scott. 2008. 'The Evolution of Indian and Pakistani Nuclear Doctrine,' Sagan, ed. *Inside Nuclear South Asia*, Stanford, CA: Stanford University Press

Salik, Naem. 2009. *The Genesis of South Asian Nuclear Deterrent: A Pakistani Perspective* Oxford: Oxford University Press.

Sethi, Manpreet. 2009. *Nuclear Strategy: India's March Towards Credible Deterrence*, New Delhi: Knowledge World.

Shahzad Saleem Syed. 2011. *Inside Al-Qaeda and The Taliban: Beyond 9/11*. London: Pluto Press

Schelling, C. Thomas. 1963. *The Strategy of Conflict*. New York: Oxford University Press.

Snyder, Glenn. 1961. *Deterrence and Defense: Toward a Theory of National Security*. Princeton: Princeton University Press.

Snyder, Glenn. 1965. 'The Balance of Power and the Balance of Terror', in Paul Seabury (ed.) *The Balance of Power*, San Francisco: Chandler, 184–201.

Subrahmanyam, K. 1998. India's Nuclear Policy: 1964–98 (A Personal Recollection), in Jasjit Singh (ed.) *Nuclear India*, New Delhi: Knowledge World.

Tellis, Ashley. 2001. *India's Emerging Nuclear Posture: Between Recessed Deterrent and Ready Arsenal*. Santa Monica: RAND.

## Articles

- Ahmed, Ali. 2012. Cold Start: The Life Cycle of a Doctrine. *Comparative Strategy* 31, no. 5: 453–468.
- Adamsky, D. D. (2013). The 1983 Nuclear Crisis—Lessons for Deterrence Theory and Practice, *Journal of Strategic Studies*, 36(1), 4–41.
- Chakma Bhumitra. 2004. 'Pakistan's Nuclear Doctrine and Command and Control System: Dilemmas of Small Nuclear Forces in the Second Atomic Age,' *Security Challenges*, Vol. 2:2
- Chansoria, Monika. 2011. 'India's Missile Programme: Building Blocks for Effective Deterrence', *Centre for Land Warfare Studies*, Issue Brief, No. 26.
- Cohen, Michael D. 2013. 'How Nuclear South Asia is Like Cold War Europe: The Stability-Instability Paradox Revisited'. *The Nonproliferation Review*. Vol. 20, No. 3, 433–451.
- Dalton, Toby, Mark Hibbs and George Perkovich. 2011. 'A Criteria-Based Approach to Nuclear Cooperation With Pakistan,' Carnegie Endowment for International Peace, Policy Outlook
- Dalton, Toby and Jaclyn Tandler. 2012. 'Understanding the 'Arms' Race in South Asia' *Nuclear Policy*, Washington, D.C.: Carnegie Endowment for International Peace
- Feaver, D. Peter. 1992/93. 'Command and Control in Emerging Nuclear Nations', *International Security*, Vol.17, No.3, Winter, 160–187.
- Fitzpatrick Mark. 2013. 'South Asia's Nuclear Arms Race: Lessons of the Cold War.' *Strategic Policy Issues*, International Institute of Strategic Studies (IISS), pp.31–58
- Ganguly, Sumit and Michael R. Kraig. 2005. 'The 2001–2002 Indo-Pakistani Crisis: Exposing the Limits of Coercive Diplomacy', *Security Studies* Vol.14. No.2. April–June.
- Ganguly, Sumit. 2008. 'Nuclear Stability in South Asia', *International Security*, Vol. 33, No. 2, Fall, 45–70.
- Gauhar Altaf. 1999. 'Four Wars, One Assumption', *The Nation* 5 September.
- Hagerty T. Devin. 1995. 'Nuclear Deterrence in South Asia: The 1990 Indo-Pakistani Crisis', *International Security*. Volume 20. No. 3. Winter. 79–114.
- Kaiser, Karl. 1989. 'Non-proliferation and Nuclear Deterrence', *Survival*, Vol. 31, No. 2, March/April, 123–136.
- Kampani, Gaurav. 2003. 'Stakeholders in the Indian strategic missile program', *The Nonproliferation Review*, 10 (3): 48–70.
- Kapur, S. Paul. 2008. 'Ten Years of Instability in a Nuclear South Asia', *International Security*, Vol. 33, No. 2, Fall, 71–94.
- Karl, J. David. 1996/97. 'Proliferation Pessimism and Emerging Nuclear Powers', *International Security*, Vol. 21, No. 3, Winter, 87–119.
- Knopf, J. W. (2003). The Importance of International Learning. *Review of International Studies*, 29 (2), 185–207.
- Kumar, Vinod. 2008. A Phased Approach to India's Missile Defence Planning. *Strategic Analysis* 32, no. 2: 171–195.
- Levy, S. Jack. 1994. 'Learning and Foreign Policy: Sweeping a Conceptual Minefield', *International Organization*, Vol. 48, No. 2, 279–312.
- Mearshimer, J. John. 1993. 'The Case for a Ukrainian Nuclear Deterrent', *Foreign Affairs*, Vol. 72, No. 3, 50–66.
- Mesquita, de Bueno and William H. Riker. 1982. 'An Assessment of the Merits of Selective Nuclear Proliferation', *Journal of Conflict Resolution*, Vol. 26, No. 2, June, 283–306.
- Miller, E. Steven. 1993. 'The Case Against a Ukrainian Nuclear Deterrent', *Foreign Affairs*, Vol.73, No.3, 67–80.
- Nasir Javed. 2004. 'Kargil: The Bitter Hard Facts', *The Nation* 30 August.
- Narang, Vipin. 2009/10. 'Posturing for Peace? Pakistan's Nuclear Postures and South Asian Stability', *International Security*, Vol. 34, No. 3, Winter, 38–78.
- Nayak Polly and Michael Krepon. 2006. 'US Crisis Management in South Asia's Twin Peak Crisis', Report No. 57. Washington D.C.: Henry L. Stimson Centre.
- Nayak Polly and Michael Krepon. 2012. 'The Unfinished Crisis: US Crisis Management after the 2008 Mumbai Attack'. Washington D.C.: Henry L. Stimson Centre.
- Nye, S. Joseph. 1987. 'Nuclear Learning and US-Soviet Security Regimes', *International Organization*, Vol. 41, No. 3, 371–402.
- Nayyar A.H. 2008. 'Nuclear Non-Proliferation: Pakistani Perspective,' FES Briefing Paper 9
- Pal, Suranjan and William Selvamurthy. 2008. 'Capacity-Building in Defence Science and Technology: A Perspective from the DRDO', *Strategic Analysis*, 32 (2): 259–284.
- Padder, Sajad. 2012. 'The Composite Dialogue between India and Pakistan: Structure, Process and Agency', *Heidelberg Papers in South Asian and Comparative Politics*. Working Paper No. 65.

- Paul, T.V. 1998. 'The Systemic Bases of India's Challenge To The Global Nuclear Order', *The Nonproliferation Review*. Fall, 1–11.
- Raghavan, V. R. 2001. 'Limited War and Nuclear Escalation in South Asia', *Nonproliferation Review*, Vol. 8, No. 3, Fall/Winter, 82–98.
- Rajagopalan, Rajesh. 2004. Missile Defences in South Asia: Much Ado about Nothing, *South Asian Survey*, 11 (2), 205–217.
- Sagan, D. Scott. 1994. 'The Perils of Proliferation: Organization Theory, Deterrence Theory, and the Spread of Nuclear Weapons', *International Security*, Vol. 18, No. 4, Spring, 66–107
- Sagan, D. Scott. 1996/97. 'Why Do States Build Nuclear Weapons?: Three Models in Search of a Bomb,' *International Security*, Vol. 21, No. 3, Winter, 69–71.
- Scott, Len. 2012. 'Should We Stop Studying the Cuban Missile Crisis?', *International Relations*, 26 (3), 255–266.
- Talbott, Strobe. 1999. 'Dealing with the bomb in South Asia,' *Foreign Affairs*, 110–122.
- Tannenwald, Nina. 2005. 'Stigmatizing the Bomb: Origins of the Nuclear Taboo', *International Security*, Vol. 29, No. 4, 5–49.
- Tellis Ashley. 2008. 'The Merits of Dehyphenation: Explaining US Success in Engaging India and Pakistan' *The Washington Quarterly*, Vol. 31:4
- Weiss Leonard. 2010. 'India and the NPT,' *Strategic Analysis*, Vol. 34:2
- Weltman, J. John. 1980. 'Nuclear Devolution and World Order', *World Politics*, Vol.32, Issue 02, 169–193.
- Wirsing G. Robert.1994. 'The Siachin Glacier Dispute: Can Diplomacy Untangle It?', *Indian Defence Review*, July.

## Monographs

- Basrur, M. Rajesh, Timothy Hoyt, Rifaat Hussain and Suyojini Mandal. 2009. *The Mumbai Terrorist Attacks: Strategic Fallout*. RSIS Monograph 17. Singapore: S Rajaratnam School of International Studies.
- Dunn, Lewis. 1991. *Containing Nuclear Proliferation*. Adelphi Papers, No. 263.London: International Institute of Strategic Studies.
- Lele, Ajay and Parveen Bhardwaj. 2013. 'India's Nuclear Triad: A Net Assessment', *IDSIA Occasional Paper*, No. 31.
- Waltz, Kenneth. 1981. *The Spread of Nuclear Weapons: More May Be Better*. Adelphi Papers, No.171. London: International Institute of Strategic Studies.
- Kazmi Zahir. 2011. 'SRBM's, Deterrence and Regional Stability in South Asia: A Case Study of Nasr and Prahaar'. Institute of Regional Studies. No. 9&10

## Internet

- Bharat Rakshak. 2013, 'Missiles Section', [Online: web] Accessed 16 November 2013, URL: <http://www.bharat-rakshak.com/MISSILES/>.
- Cabinet Committee on Security. 2003. The Cabinet Committee on Security Reviews points of India's Nuclear Doctrine. Ministry of External Affairs, India.
- Centre for Nonproliferation Studies. 1999. China's Nuclear Exports and Assistance to Pakistan, [http://cns.miis.edu/archive/country\\_india/china/npakpos.htm](http://cns.miis.edu/archive/country_india/china/npakpos.htm) (Accessed on 15.11.2013)
- Dasgupta, Saibal (2012), 'Agni-V: China says India underplaying Agni, it can hit Europe', *The Times of India*, [Online: web] Accessed 17 July 2017, URL: [http://articles.timesofindia.indiatimes.com/2012-04-20/india/31373273\\_1\\_agni-v-zhang-zhaozhong-strike-range](http://articles.timesofindia.indiatimes.com/2012-04-20/india/31373273_1_agni-v-zhang-zhaozhong-strike-range).
- Davis, Zachary S. David. 2009. 'A Decade of Nuclear Learning: Ten Years After the South Asian Nuclear Tests', *Conference Report*, Center on Contemporary Conflict, Naval Post Graduate School, Monterey CA, [http://www.nps.edu/Academics/Centers/CCC/Conferences/recent/NuclearLearningMar09\\_rpt.html](http://www.nps.edu/Academics/Centers/CCC/Conferences/recent/NuclearLearningMar09_rpt.html) (accessed on 15 April, 2013).
- DRDO. 2013. 'Missiles', <http://drdo.gov.in/drdo/English/index.jsp?pg=homebody.jsp> (Accessed 1.11.2013)
- Inter Services Public Relations. 2011. No: PR94/2011-ISPR. [http://www.ispr.gov.pk/front/main.asp?o=t-press\\_release&date=2011/4/19](http://www.ispr.gov.pk/front/main.asp?o=t-press_release&date=2011/4/19).

Jacob, Happymon. 2013. 'BMD and South Asian Strategic Stability', *Greater Kashmir*, [Online: web] Accessed 16 May 2013, URL: <http://jammu.greaterkashmir.com/news/2013/Apr/21/bmd-and-south-asian-strategic-stability-6.asp>.

Joshi, Manoj. 2012. 'Government baffled over DRDO chief's claim on missile shield', *India Today*, [Online: web] Accessed 16 May 2013, URL: <http://indiatoday.intoday.in/story/government-baffled-over-drdo-chief-claim-on-missile-shield/1/208850.html>.

Kumar, Vinod. 2012. 'South Asia's Fragile Nuclear Balance', *The National Interest*, [Online: web] Accessed 16 May 2013, URL: <http://nationalinterest.org/commentary/the-fragile-nuclear-balance-south-asia-7045?page=1>

Mallikarjun, Y and T.S. Subramanian. 2013. 'India Successfully test-fires underwater missile', *The Hindu*, <http://www.thehindu.com/news/national/india-successfully-testfires-underwater-missile/article4350553.ece> (Accessed on 12.11.2013)

Missilethreat. 2013. 'Missiles of the World', [Online web] Accessed 17 July 2013, URL: <http://missilethreat.com/missiles-of-the-world/>.

Nagappa, Rajaram, Arun Vishwanathan, and Aditi Malhotra. 2013. Hatf-IX NASR- Pakistan's Tactical Nuclear Weapon: Implications for Indo-Pak Deterrence. *National Institute of Advanced Studies*.[http://isssp.in/wp-content/uploads/2013/07/R17-2013\\_NASR\\_Final.pdf](http://isssp.in/wp-content/uploads/2013/07/R17-2013_NASR_Final.pdf) (accessed August 13, 2013).

Outlook India. 2012. 'Agni-V's Actual Range 8000 Kms: China' *Outlook India*, <http://news.outlookindia.com/items.aspx?artid=760265> (Accessed 11 November 2013)

Nuclear Threat Initiative. 2011. India Missile Chronology. [http://www.nti.org/media/pdfs/india\\_missile.pdf](http://www.nti.org/media/pdfs/india_missile.pdf) (Accessed July 16, 2013).

Nuclear Threat Initiative. 2013. Pakistan: Missiles. <http://www.nti.org/country-profiles/pakistan/delivery-systems/> (Accessed August 14, 2013).

Pandit, Rajat. 2009. India kicks off work on advanced missile defence shield. *The Times of India*.[http://articles.timesofindia.indiatimes.com/2009-03-10/india/28027742\\_1\\_interceptor-missile-missile-defence-bmd-system](http://articles.timesofindia.indiatimes.com/2009-03-10/india/28027742_1_interceptor-missile-missile-defence-bmd-system) (accessed August 12, 2013).

\_\_\_\_\_. 2013. '7 years in making, cruise missile fails test' [http://articles.timesofindia.indiatimes.com/2013-03-13/india/37681512\\_1\\_brahmos-cruise-missile-radars-and-air-defence](http://articles.timesofindia.indiatimes.com/2013-03-13/india/37681512_1_brahmos-cruise-missile-radars-and-air-defence) (Accessed 21 November 2013).

Rajagopalan, Rajeswari. 2011. 'Missile Defence and Strategic Stability', *Observer Research Foundation*, <http://www.orfonline.org/cms/export/orfonline/documents/report/china-paper.pdf> (accessed July 8, 2013).

Shukla, Ajai. 2013. 'Advanced Agni-6 Missile with multiple warheads likely by 2017', *Business Standard*, [http://www.business-standard.com/article/economy-policy/advanced-agni-6-missile-with-multiple-warheads-likely-by-2017-113050800034\\_1.html](http://www.business-standard.com/article/economy-policy/advanced-agni-6-missile-with-multiple-warheads-likely-by-2017-113050800034_1.html) (Accessed 12 November 2013).

Subramanian, T.S. 2007. 'Smashing Hit', *Frontline*, 24 (25), <http://www.hindu.com/thehindu/fline/fl2425/stories/20080104242512300.htm> (Accessed 20 November 2013).

\_\_\_\_\_. 2012. Shield in the Sky. *Frontline*<http://www.frontline.in/static/html/fl2925/stories/20121228292504200.htm> (accessed November 23. 2013).

## Interviews

Banuri, Khalid. 2013. Personal Interview

Chari, PR. 2013. Personal Interview

Cheema, Pervaiz Iqbal. 2013. Personal Interview

Durranni, Asad. 2013. Personal Interview

Hasnain, Syed Ata. 2014. Personal Interview.

Haq, Ehsan-ul. 2013. Personal Interview

Hoodbhoy, Pervez. 2013. Personal Interview

Hussain, Syed Rifaat. 2013. Personal Interview

Hussain, Talat. 2013. Personal Interview

Jaspal, Zafar Nawaz. 2013. Personal Interview

Kak, Kapil. 2013. Personal Interview

Khan, Feroz Hassan. 2013. Personal Interview

Malik, Salma. 2013. Personal Interview

Nagappa, Rajaram. 2013. Personal Interview

Naqvi, Ali Sarwar. 2013. Personal Interview

Nizamani, Haider. 2013. Personal Interview

Rumi, Raza. 2013. Personal Interview  
Shankar, Vijay. 2013. Personal Interview  
Salik, Naeem. 2013. Personal Interview  
Qadir, Shaukat. 2013. Personal Interview  
Hali, S.M. 2013. Personal Interview

**India: Major Multilateral Arms Control Agreements and Treaties**

	<i>Signed</i>	<i>Ratified</i>
Biological Weapons Convention	1973	1974
Chemical Weapons Convention	1993	1996
CTBT: Only supports the treaty in the context of general nuclear disarmament.	—	—
NPT: Has developed nuclear weapons outside the treaty.	—	—
Convention on Certain Conventional Weapons: Party to all protocols.	1981	1984
Outer Space Treaty	1967	1982
Ottawa Mine Ban Convention: Employs landmines for border defence.	—	—
Convention on the Physical Protection of Nuclear Material (CPPNM)	—	2002*
CPPNM 2005 Amendment	—	2007
International Convention for the Suppression of Acts of Nuclear Terrorism	2006	2006*

\* India stated that it will not be bound by the dispute settlement procedures in Paragraph 2, Article 17.

\* India stated that it will not be bound by the dispute settlement procedures in Paragraph 1, Article 23.

Source: Arms Control and Proliferation Profile of India: Arms Control Association. Updated July 2013, <http://www.armscontrol.org/factsheets/indiaprofile>

**Pakistan: Major Multilateral Arms Control Agreements and Treaties**

	<i>Signed</i>	<i>Ratified</i>
Biological Weapons Convention	1972	1974
Chemical Weapons Convention	1993	1997
CTBT	—	—
NPT: Has developed nuclear weapons outside the treaty.	—	—
Convention on Certain Conventional Weapons: Party to all five protocols.	1982	1985
Outer Space Treaty	1967	1968
Ottawa Mine Ban Convention: Banned exports of antipersonnel landmines, but retains and deploys them for defensive purposes.	—	—

Convention on the Physical Protection of Nuclear Material (CPPNM)*	—	2000*
CPPNM 2005 Amendment*	—	—
International Convention for the Suppression of Acts of Nuclear Terrorism	—	—

---

\* Pakistan stated that it will not be bound by the provisions of Paragraph 2, Article 2, or by the dispute settlement procedures in Paragraph 2, Article 17.

Source: Arms Control and Proliferation Profile of India: Arms Control Association. Updated July 2013, <http://www.armscontrol.org/factsheets/pakistanprofile>