

MINIMUM DETERRENCE

PAKISTAN'S DILEMMA

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For Pakistan, nuclear capability is an instrument of war prevention and insurance against invasion. Its nuclear doctrine is heavily influenced by India's conventional superiority, making it difficult for Pakistan to eschew first use and setting its deterrence policy apart from India's.

In the early years of the Cold War, when the USSR's overwhelming conventional superiority in Europe posed a threat, US President Harry Truman told his close advisers: 'nuclear weapons were all that we had'.¹ Today it is Russia that finds succour in tactical nuclear weapons to offset conventional force imbalances (including in high-precision conventional weapons) with the US, Europe and others. Pakistan's staunch belief in nuclear weapons follows a similar logic. Much has transpired in Pakistan in the thirteen years since its last nuclear test. Today, it faces a multitude of security challenges from both within and outside of its borders, but there remains a mythical belief in the invincibility of nuclear weapons as the ultimate guarantor of national survivability.

Under the leadership of Zulfikar Ali Bhutto (1971–77) the country had resolved 'never again' to suffer the humiliation as it did in the 1971 war with India.² Pakistanis perceive nuclear capability as 'God's gift' to deter adversaries, preserving national sovereignty from regional hegemonic pressures and reinforcing national prestige – Pakistan was the first Muslim nuclear weapon state. This resonates within domestic political rhetoric and is a way of building national consensus in a divided country.

The drive towards 'nuclear zero' or low numbers in the Western world, however, is disconnected from the strategic dynamics and anxieties in

Pakistan and the region as a whole. The rapidly changing regional context – especially the deterioration of US-Pakistan relations in the aftermath of the killing of Osama Bin Laden – has created a difficult political environment for Pakistani co-operation. This is an obstacle to the vision of a world with deep cuts to nuclear capability, and strategic stability at low numbers of nuclear warheads.

This article examines Pakistan's perspective on the future conditions for nuclear stability in low numbers and the evolution of doctrine and force postures; and analyses likely trajectories for the decade ahead. The paper concludes that the circumstances in which Pakistan might be amenable to collaboration with the global community in its drive towards low numbers are currently non-existent. A non-discriminatory and criteria-based multilateral restraint approach, however, may be a possible pathway to securing Pakistani co-operation. The paper suggests that a staged reduction of arsenals involving all nuclear weapons states to 'reasonable numbers' might set the right conditions for a multilateral regime of nuclear stability at low numbers and ultimately create an environment for a genuine move towards the global elimination of nuclear weapons.

From Reluctance to Reliance

Lawrence Freedman argues that nuclear weapons in the Second World War were viewed as the ultimate form of

strategic bombing; in fact, the only use of nuclear weapons in history was not for the purpose of deterrence, but for war termination.³ The consequences of the use of nuclear weapons raised essential questions about the relevance of nuclear weapons as military instruments for war, and led to the genesis of deterrence theory.⁴ The salience of nuclear weapons in the national security policy of early nuclear-weapon states nevertheless continued and, if anything, increased over the decades of the Cold War. One reason for this was America's nuclear superiority; another was that the nuclear option was cheaper than the maintenance of a large conventional force. As the Cold War intensified, doctrinal changes – from massive retaliation to flexible response, for example – were shaped by the changing strategic environment, as well as by enhanced technological innovations.⁵

The South Asian confrontation is taking place in a starkly different environment to the NATO-Warsaw Pact stand-off. The two nuclear neighbours, India and Pakistan, are geographically intertwined even as structural asymmetries between the two continue to widen. Unresolved territorial disputes, routine border skirmishes and intense domestic rivalry make the situation volatile, affecting the robustness of nuclear deterrence and crisis stability.

In addition, the threat perceptions of the two countries vary profoundly. India's deterrence posture caters for a twin



Pakistan's military successfully tests its short-range Ghaznavi missile, launched from an undisclosed location in Pakistan, February 2008. *Courtesy of AP Photo/Inter Services Public Relations.*

nuclear threat from Pakistan and China. Pakistan, on the other hand, sees India as the primary nuclear and conventional threat. Pakistan does not view Iran as an existential threat, but the emergence of another nuclear-armed neighbour would obviously compound its security calculus. In such a complex security dilemma, the prospects for stability at low numbers are hard to predict.

The Development of Pakistan's Nuclear Programme

The basic premise underlying the development of Pakistan's nuclear programme has been that a nuclear capability would defend against both physical external aggression and infringement of its ideological and sovereign identity. Pakistan developed its nuclear capability after military defeat by India, and the perceived failure of external allies to prevent destructive conflict. Nuclear weapons have come to be seen as 'all they have' to prevent a repeat of the humiliation of the 1971 Indo-Pakistani war, which ended with the secession of East Pakistan as Bangladesh.

Maintaining the nuclear deterrent is thus a rare symbol of national unity in a country characterised by a lack of consensus in nearly all aspects of national life.

Pakistan was reluctant to take the nuclear weapons route, even though the country was under severe pressure both from external powers and domestic bomb lobbies. The leadership argued that any hint of a nuclear weapon ambition would jeopardise security alliances with the United States. This would have been counterintuitive in light of Pakistan's dependence on the US for its economic growth, military modernisation and access to peaceful uses of nuclear science under the 'Atoms for Peace' programme. Pakistan, moreover, did not have a decisive voice in, nor consider itself a stakeholder of, the broader scheme of global politics.⁶

Pakistan's threat matrix dramatically changed, however, after Pakistan's catastrophic military defeat in 1971 and India's nuclear weapon test in 1974. Pakistan's national threat perception became dominated by the twin threat

of India's conventional force superiority and nuclear weapons capability. The acquisition of nuclear weapons hence became Pakistan's highest national security objective, with unanimity across all parts of the political spectrum. This was augmented by the strong perception that outside powers could not be relied upon in moments of crisis and war.

Pakistan first detonated an indigenous nuclear device in May 1998, a few weeks after India's second nuclear test. Its most recent test was conducted two days later in Balochistan. Now, over a decade since Pakistan demonstrated its nuclear capabilities, the region has endured one limited war (in 1999) and a lengthy military standoff (in 2001–02), both of which could easily have slipped into full-scale war. Earlier, during the covert development of nuclear weapons, at least three major military crises were averted from escalating into wars – though only after diplomatic intervention by the United States.⁷ These outcomes have reinforced Pakistan's faith in the nuclear capability as an instrument of war prevention, and insurance against

outright invasion; further, Pakistan has now developed nuclear doctrines, command and control structures and a sophisticated array of delivery vehicles and weapon designs.

Nuclear Doctrine and Force Posture

Pakistan has debated extensively for over a decade – in official and academic circles – whether the articulation of nuclear doctrine is necessary for the purpose of maintaining robust deterrence. Doctrine is an essential requirement of managing the nuclear capability, which provides a framework for the delineation of force structures, targeting policy – including types, number of warheads and delivery systems – and the circumstances for their use. Policy-makers agree that a declared nuclear doctrine does not serve Pakistan's interest, and instead prefer to declare the robustness of its command and control system, with periodic hints at the existence of an implicit nuclear doctrine.

In 2000, Pakistan established the National Command Authority (NCA), a government agency responsible for the command and control of Pakistan's strategic nuclear forces, and for developing nuclear policy. This has made Pakistan's nuclear decision-making mechanisms more transparent. The NCA has a functioning secretariat (the Strategic Plans Division) whose roles and responsibilities in peace and war have matured overtime. Nevertheless, there remains considerable ambiguity and secrecy around its nuclear programme, which is perhaps to be expected considering the historical baggage of espionage and mistrust from Western allies over the programme. Against this backdrop, Pakistan remains reluctant to open up on such issues as nuclear doctrine, 'red lines', integration plans for nuclear and conventional forces, and details of nuclear security, safety and survivability techniques. These include both passive measures (such as dispersal, decoys and dummies, and best practices) and active measures (such as physical force protection, rapid-reaction forces, emergency search teams and responders, and contingency plans).⁸

Doctrinal Assumptions

Though not publicly articulated, the role of nuclear weapons in Pakistani security policy has nonetheless appeared in periodic statements from the senior leadership.⁹ For instance, nuclear weapons have been described as a weapon of last resort to prevent military defeat, as a result of loss of territory, destruction of forces, economic strangulation, or incitement of domestic instability as a prelude to invasion (such as the war in East Pakistan in 1971). Politically, nuclear weapons are a symbol of defiance. Economically, the nuclear deterrent capability permits war prevention, and thus offers a window for developing other elements of Pakistan's national power.¹⁰

Pakistan's strategic planning began in the same year that its first nuclear tests were conducted. The way in which Pakistan has developed its nuclear policies and strategic forces is directly related to the nature of the security threat, and the structural power imbalance and widening conventional force asymmetry with India. It is for these reasons that the nuclear neighbours have produced different concepts of nuclear deterrence. Unlike India, Pakistan cannot meet the spectrum of threats with conventional forces alone. It cannot eschew first-use, and cannot afford to fight a prolonged war due to its narrow geo-physical depth and limited resources. Its initial doctrinal thinking on the use of nuclear weapons was thus underpinned by at least five key assumptions, some of which fell apart immediately, while others changed over the course of the following decade. These assumptions today affect Pakistan's deliberations on the reduction of its nuclear arsenal and whether it would be able to achieve stability at low numbers.

Shared Concepts of Nuclear Deterrence

The first assumption at the time of the nuclear tests in 1998 was that a demonstrated nuclear capability would deter India, or any potential adversary, from initiating an attack on Pakistan. This of course depended on a counterpart concept of deterrence in India. But this theory was eroded by the Kargil War of

1999, after which India announced its doctrine of limited war in the shadow of the nuclear capability.¹¹ This envisaged rapid mobilisation and attack on a broad front with shallow manoeuvre to capture limited territory; and was based on waging a punitive, destruction-oriented, short war in response to provocation. The assumption was that operations would be kept below the perceived Pakistani nuclear threshold, and the war terminated at will through escalation dominance and control.¹² For the past seven years, India's air-land offensive concept has been perfected through regular military exercises.

There is hence a dangerous disconnect between India and Pakistan's concepts of nuclear deterrence. India does not appear to believe that its survival is threatened by Pakistan's nuclear capability, even if there is a remote risk of a limited nuclear exchange. Its nuclear arsenal is focused on China, and it has justified its larger nuclear forces in order to compete with Beijing.¹³ Conversely, Pakistan believes that unless nuclear options are left open, its national survival is at risk from India; and the expansion of Indian forces will drive the continued growth of Pakistan's nuclear arsenal and delivery means. Pakistan is thus far more advanced in preparations to conduct nuclear operations than India.

Effective nuclear deterrence between nuclear-armed neighbours relies on a shared conception of risk and reality. Without this, the robustness of nuclear deterrence is challenged. There is little common understanding between India and Pakistan in terms of mutual assessments of each other's nuclear capabilities. Both India and Pakistan have committed to continued development of a strategic triad of deterrence means, yet the declared minimum deterrent goal is undefined, dynamic, and based on the shifting strategic environment.¹⁴

Targeting and Restraint Criteria

Pakistan's initial force goals criteria were based on the number of counter-value targets, the second assumption underpinning national doctrine on nuclear weapons use. The essential objective was to be able to threaten several mega-cities in India's heartland

within effective range of air and ballistic missile systems. The calculations of nuclear sufficiency were based on assured destruction of such targets and the redundancy needed to be built into such arsenals. The assured destruction criteria were thus determined a decade ago on the mutual vulnerabilities of nuclear forces and command centres, the proximity of major cities at short distances and the lack of real-time surveillance and warning capabilities. When the United States advised the adoption of a minimum deterrent posture as the best means of nuclear stability, Pakistan readily agreed. Mutual restraint would have helped the region escape from the spiral of an arms race, and the only logical course was to resolve conflicts.¹⁵

Pakistan thus proffered a strategic restraint regime with three interlocking elements: reciprocal measures for nuclear and missile restraints to prevent deliberate or accidental use of nuclear weapons; the establishment of a conventional balance as a confidence-building measure; and the establishment of a political mechanism for resolving bilateral conflicts, especially the core dispute over Kashmir. But India's rejection of the Pakistani proposal, coupled with the disinterest of the United States (the originator of the 'strategic pause' approach and sponsor of a 'minimum deterrence posture' in South Asia), led to the demise of the proposed restraint measure.¹⁶

The failure of strategic restraint affected two Pakistani objectives. First, it set back the immediate goal of ending the nuclear sanctions that were crippling the Pakistani economy. Second, it undermined the hope that a regional restraint arrangement would allow the weaker state (Pakistan) to escape the inevitable trap of a debilitating arms race with India.

Force Survivability and Counter-force

Survivability was the third major assumption underlying the nuclear force posture. Both India and Pakistan's nuclear forces continue to be vulnerable to each other. Pakistan's geographic size and small air force makes its small

arsenal particularly exposed; it also lacks the adequate technical capability for a counter-force strategy. India has improved its surveillance and early-warning capabilities, but real-time intelligence capabilities are still a work in progress. Neither country has sufficiently developed the target acquisition capability needed for an effective counter-force strategy. These conditions are changing and currently both sides are improving their capability in target acquisition, accuracy and surveillance.¹⁷

As surveillance capabilities improve, the dispersal of the arsenal becomes necessary, which creates its own dilemma.¹⁸ Most command centres are located within the major communication and cultural centres of South Asia, which also complicates potential counter-control strikes. Force survivability for Pakistan is therefore an important factor affecting the quantitative and qualitative limits of nuclear deterrence force goals; and hence whilst these obstacles remain, Pakistan will be unlikely to reduce the size of its arsenal.

Technological Assumptions

A fourth assumption was based on shared technological constraints. But the current pace of technological innovation is posing new challenges to stability. Three strategic weapons development and technological advancements in the last decade have affected Pakistan's strategic calculations in particular. Firstly, the development of Indian cruise missile technology (especially the supersonic BrahMos cruise missile developed in co-operation with Russia) has led Pakistan to develop the Babur missile as a counter-measure. Secondly, the development of ballistic missile defences, in particular the potential Indian acquisition of the Israeli Arrow anti-ballistic missile system to supplement its deployment of the Green Pine radar, together with PAC-3 transfers from the US, would substantially shift the offensive-defensive balance in Pakistani eyes. Third, India's introduction of sea-based platforms (including the lease of the Russian *Akula-II* nuclear-powered submarine and India's own *Arihant* submarine), which would likely be armed with the Sagarika sea-launched cruise

missile, could be both stabilising (assured second strike) and destabilising (by putting both countries 'on the trigger').¹⁹ This is likely to force Pakistan to introduce its own sea-based deterrent (possibly submarines), which in turn would add a new dimension to the naval arms race in the Indian Ocean of the future. Finally, there is the impact of India's membership of the Nuclear Suppliers Group (NSG) and Missile Technology Control Regime (MTCR), which will enable it to access new technologies not available to Pakistan.

The Role of the United States

Finally, underlying Pakistan's nuclear programme was the assumption that the US would be an honest broker in assuring stability in the region. The US was the first to engage the region after Pakistan's nuclear tests in the late 1990s in order to mitigate the impact of nuclear sanctions and mediate the adoption of a regional minimum deterrence posture. But it soon became evident to the Pakistanis that the US had seemingly different objectives, in particular in its relationship with India. The US has played an impressive role in crisis diffusion in South Asia, but Pakistan lost faith in the US as a neutral arbitrator after the US-India civil nuclear deal.

Under the 2005 agreement, India agreed to separate its civil and military nuclear facilities, bringing the former under international safeguards. In return, the US would work towards full civil nuclear co-operation with India. Pakistan reacted strongly to the deal, seeing it as discriminatory and designed to give India a unique status: de facto recognition as a nuclear weapon state without any obligation to commit to global non-proliferation as a member of the NPT treaty.²⁰ India's domestic uranium resources are now freed up for military purposes in un-safeguarded nuclear power reactors. In addition, India has been permitted to join export control cartels such as the NSG and MTCR, despite non-membership of the NPT, all of which has exacerbated Pakistani anxiety. Given the apparent cosiness of the US-India relationship, there ought to be a serious consideration in Islamabad as to how these outcomes affect Pakistani

nuclear objectives, its nuclear security focus and its position on global nuclear arms control.

Overlaid on this acute sense of discrimination is the perceived constant questioning of its nuclear security, including alarming reports that the US has prepared plans to 'snatch and grab' Pakistani nuclear sites should it fear a security breach.²¹ In the aftermath of the stunning raid by US special forces deep inside Pakistan to kill Osama Bin Laden in May 2011, the possibility of US intervention has created intense fears and anxieties in Pakistan. Though the fear of a preventive strike has existed in the Pakistani threat perception since the early 1980s, it was beyond imagination until a decade ago that Pakistan would have to seriously factor the United States, an ally, into its calculus of force survivability, demonstrating the degree to which US-Pakistani relations have deteriorated.

Escalation and Crisis Stability

As alluded to earlier, both Pakistan and India are modernising their nuclear forces. The introduction of sea-based deterrence, the development of cruise missiles and an ambitious space-based programme are boosting India's capability in early-warning, real-time surveillance and target acquisition capabilities. Should India acquire a ballistic missile defence system, the offence-defence balance would be decisively skewed in India's favour. Pakistani vulnerability would likely lead to either a lowering of the nuclear threshold through the introduction of battlefield nuclear weapons (short range, low-yield systems) or the development of an offensive conventional military doctrine. At a minimum, Pakistan will increase its missile force and fissile stocks requirements. It is hence small wonder that Pakistan is prepared to single-handedly block the fissile material cut-off treaty negotiations and has threatened neither to participate nor accept the outcome of any other arrangement outside the Conference on Disarmament.

The asymmetric trends in South Asia have an adverse impact on crisis stability. Pakistan has boasted about the robustness of its command and control

infrastructure, but India's advancement and force modernisation could mean that Pakistan is increasingly susceptible to counter-control strikes. Should a future crisis escalate to the point where decapitating strikes – nuclear or conventional – against national command systems become possible, the consequences would be severe: unlike the Washington-Moscow situation during the Cold War, Delhi and Islamabad (and other major South Asian communication and industrial centres) are within minutes' reach of either side's land-based missiles and aircraft.

Should the perceived conventional imbalance between the two countries continue to favour India, Pakistan may find itself with two options: secure an assured second-strike capability, which may include the development of an assortment of missile systems and sea-based deterrence;²² or prepare for the operational deployment or readiness of its existing nuclear arsenal. Pakistan would be unable to afford to keep a great portion of its forces on alert, so it would be more likely to keep land- and sea-based assets on semi-alert. However, due to the proximity of targets, short flight times and the technical challenges of assuring information accuracy, the likelihood of inadvertence is high.²³

Strategic planning is generally predicated on three levels of deterrence: battlefield, operational (tactical) and strategic. There is no notion of tactical weapons in Pakistan since all weapons with a nuclear warhead are dubbed strategic. Battlefield-level weapons, however, have recently been introduced as 'another layer of deterrence' designed to apply brakes on India's military doctrine of Cold Start. A reflection of such a response is Pakistan's flight-testing of the short-range, nuclear-capable rocket system Hatf-9 (Nasr), which was introduced to add 'deterrence value' to Pakistan's force posture.²⁴

The introduction of a 'strategic weapon' for battlefield use will pose three major challenges for Pakistan. First, the deployment of such weapons on the battlefield close to the border (and close to Pakistani troops) will increase physical security problems in theatre. Second,

it will complicate the command and control system because of the necessity to be combat-ready in order to be able to respond quickly to Indian incursions. The command system thus faces a dilemma: retain positive centralised control, or delegate it beforehand to field formations for more battle-effective use. Third, this new weapon system, with its distinct signatures, could induce a pre-emptive conventional attack by India, most likely from its air force. Thus, battlefield weapons such as Hatf-9/Nasr will pose a 'use it or lose it' choice, precipitating a war that may not be intended.²⁵

Threat Perception and Deep Cuts

George Perkovich and James Acton surmise that deep cuts in nuclear arsenals will be conditioned to a 'new security architecture that would allow today's nuclear armed states to protect their vital interests without nuclear weapons'.²⁶ By implication, deep cuts are premised on two fundamental questions: How much would it impact negatively on the security calculus and crisis stability; and would a significant improvement in the security environment be a prerequisite for the reduction of current arsenals?

These system-level considerations are also pertinent to South Asian actors. For Pakistan, positive change in the security environment is the key to its position on global arms control initiatives and disarmament. Currently, unresolved local conflicts in the region are intense, emotional and often involve domestic politics, complicating foreign-policy decision-making. At this point in time, it is difficult for the Pakistani leadership to envision conditions in which Pakistan's security could be assured without nuclear weapons. It is also highly unlikely that strategic circumstances would dramatically change in a way that would effect a policy change on the salience of nuclear weapons. India's development of strategic nuclear weapons and the acquisition of new technologies, as well as co-operative arrangements, challenge the basis of the assured destruction criteria that established the minimum deterrence posture a decade ago. As vulnerabilities increase, the question of force survivability becomes

acute, multiplying targeting plans and significantly increasing the requirements of redundancy.

The Symbolism of Nuclear Weapons

For Pakistan, the possession of nuclear weapons plays an important domestic role. Militarily, the nuclear weapon capability has a symbiotic relationship with conventional defence, which is currently acutely stretched between counter-insurgency in the western borderlands and defence against India along its eastern border (including the deployment of forces along the Line of Control in Kashmir). Pakistan's conventional defence expenditure has risen significantly because of the ongoing war in Afghanistan: nearly half of combat army and paramilitary forces are deployed on counter-insurgency, counter-terrorism and stabilisation duties in various parts of the country. All of these reasons make the military a natural proponent of the national nuclear programme, which is seen as bolstering Pakistan's conventional capabilities.

Economically, the nuclear programme's civilian uses have tremendous spin-off benefits, including helping Pakistan to meet national energy shortages. This is important particularly as internal instability – from the impact of man-made (terrorism) and natural disasters (like the devastating floods of 2010) – has brought heavy economic hardship to the country. Growth rates have plummeted. Although the US was a generous donor in times of crisis, the much-touted Kerry-Lugar-Berman bill, intended to compensate for the flood damage, has run into problems in the aftermath of the killing of Osama Bin Laden. The lack of foreign direct investment, poor domestic economic growth and unsettled civil-military relations have impeded qualitative improvements to Pakistan's nuclear programme, but there is nevertheless no conscious or explicit directive to shift the nuclear programme's strategic priorities.²⁷

Pakistan and the Drive to Low Numbers

The issue of low or high numbers of nuclear weapons is profoundly psychological for Pakistan. The sense of vulnerability and discrimination has generated a momentum of its own; and the substantive rationale of minimum deterrence now has been replaced by an altogether different logic. A decade after turning its demonstrated nuclear capability into an operational deterrent, Pakistan continues to add 'layers of deterrence' by introducing new weapons systems, increasing its fissile stocks, creating strategic forces and strengthening the robustness of its command and control. To Pakistani security policy-makers, the best means of ensuring balance and stability with India is through a large nuclear force that can compensate for unfavourable trajectories in the realm of conventional force and economic resources.²⁸

Beyond the security considerations described above, Pakistan has always maintained that a genuine criteria-based approach is the best way to seek the co-operation of the nuclear 'hold-out' states – in other words, nuclear-weapon states that are non-signatories of the NPT. Pakistan is not against the principle of non-proliferation and disarmament. Should a leading nuclear-weapon state move to either negotiate a global treaty on the elimination of nuclear weapons or consider a progressive descent to low numbers, the momentum would be hard to resist. Like Britain, Pakistan has maintained that it would consider reducing its arsenals once the major nuclear powers come down to 'reasonable numbers'. A multilateral approach that begins with the reduction of US and Russian arsenals, and which then encompasses France and Britain as the next stage of strategic reduction goals, would create the strategic conditions for the last nuclear-weapon state, China, to come on board. Once the Big Five set the right conditions, this could generate a cascading effect involving India and Pakistan, and perhaps Israel as well.

Pakistan's nuclear programme began with a 'never again' rationale. Today it is concerned by the possible consequences of Chinese and Indian military and nuclear competition – which it fears may also be fuelled by the United States in its quest to use India as a counter-weight to China. In the context of stability at low numbers, to stem the regional security dilemma and reverse proliferation in Asia, Pakistan's interest lies in a rapprochement between China and India and resolving all outstanding conflicts with India and Afghanistan. An entente between China and India, and India and Pakistan, would mitigate, if not eliminate, the conditions that led them to develop nuclear weapons in the first place.²⁹

An end to its rivalry with India and the stabilisation of Afghanistan would be the ultimate gain for Pakistan, especially if it opens up the trade and energy corridor between Central Asia and South Asia. In this wider context of initiatives seeking 'stability at low numbers' and global disarmament, progress toward conflict resolution and threat reduction is a prerequisite. Specifically in the case of Pakistan, achieving balance in conventional force numbers and modernisation in tandem with progress in bilateral relations with India is the key towards lower numbers of nuclear weapons. In such circumstances, rather than being an obstacle to multilateral arms controls, Pakistan in all likelihood would become a proactive player in disarmament initiatives and low-numbers deterrence goals. ■

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NOTES

- 1 Quoted in Robert Jervis, *The Meaning of Nuclear Revolution* (New York, NY: Cornell University Press, 1989), p. 3.
- 2 The 'never again' factor is a consistent theme in many nations' national narratives, internalised over generations, and arguably a prime reason why many states cling to the belief of nuclear weapons as the ultimate saviour from catastrophic humiliation. John Wilson Lewis and Xue Litai, *China Builds the Bomb* (Palo Alto, CA: Stanford University Press, 1988); George Perkovich, *India's Nuclear Bomb: The Impact on Proliferation* (Berkeley, CA: University of California Press, 1999); Avner Cohen, *Israel and the Bomb* (New York, NY: Columbia University Press, 1998).
- 3 Lawrence Freedman, 'The First Two Generations of Nuclear Strategists' in Peter Paret (ed.), *Makers of Modern Strategy: From Machiavelli to the Nuclear Age* (Oxford: Clarendon Press, 1986).
- 4 Bernard Brodie was the first to question the relevancy of war as an instrument of policy with the advent of nuclear weapons.
- 5 For details, see Jervis, *op. cit.* Also see Colin McInnis, 'Nuclear Strategy' in Colin McInnis and G D Sheffield (eds.), *Warfare in the Twentieth Century: Theory and Practice* (London: Unwin Hyman, 1988).
- 6 Feroz Hassan Khan, 'Pakistan's Perspective on the Global Elimination of Nuclear Weapons' in Barry M Blechman and Alexander K Bollfrass (eds.), *National Perspectives on Nuclear Disarmament: Unblocking the Road to Zero* (Washington, DC: Henry L Stimson Center, 2010), p. 211.
- 7 The three crises were when India occupied Siachin Glacier, an undemarcated glaciated area along the Line of Control (LoC) in the disputed territory of Kashmir, in 1984; the 'Brass Tacks' crisis of 1986–87; and the mobilisation of forces on both sides, following a massive Kashmir uprising in the summer of 1990. These and the two crises after the nuclear tests were resolved after diplomatic intervention by the United States. See Feroz Hassan Khan, 'The Independence-Dependence Paradox: Stability Dilemmas in South Asia', *Arms Control Today* (October 2003).
- 8 For an analysis of Pakistani doctrine and force postures, see Peter R Lavoy, 'Islamabad's Nuclear Posture: Its Premises and Implementation' in Henry D Sokolski, *Pakistan's Nuclear Future: Worries beyond War* (Carlisle, PA: Strategic Studies Institute, 2008). On Pakistan's nuclear security, see Feroz Hassan Khan, 'Pakistan's Nuclear Security: Separating Myths from Reality', *Arms Control Today* (July/ August 2009).
- 9 See Paolo Cotta-Rasmusino and Maurizio Martellini, 'Nuclear Safety, Nuclear Stability and Nuclear Strategy: A Concise Report of a Visit by the Landau Network-Centro Volta', Landau Network-Centro Volta, 21 January 2002.
- 10 Lavoy, *op. cit.*
- 11 This was initiated by Pakistani manoeuvres across the LoC in disputed Kashmir. India considered this an attack across the LoC; India counter-attacked, escalating the border conflict, which resulted in the Kargil War in 1999. This was the first high-intensity border conflict after Pakistan's nuclear test. For a detailed account, see Peter R Lavoy (ed.), *Asymmetric Wars in South Asia: The Causes and Consequences of the Kargil Conflict* (Cambridge: Cambridge University Press, 2009). Also see Praveen Swami 'The Roots of Crisis: Post-Kargil Conflict in Kashmir and the 2001–2002 Near War' and Gurmeet Kanwal, 'Military Dimension of the 2002 India–Pakistan Standoff: Planning and Preparation for Land Operations' both in Zachary Davis (ed.), *The India-Pakistan Military Standoff: Crisis and Escalation in South Asia* (New York: Palgrave Macmillan, 2011), pp. 19–63 and 67–95.
- 12 Walter C Ladwig III, 'A Cold Start for Hot Wars? The Indian Army's New Limited War Doctrine', *International Security* (Vol. 32, No. 3, Winter 2007/08); Kanwal, *op. cit.*, pp. 83–90.
- 13 See, for example, Ashley J Tellis, *India's Emerging Nuclear Posture: Between Recessed Deterrent and Ready Arsenal* (Santa Monica: RAND, 2001), pp. 39–75. Also see Rajesh Rajagopalan, 'India: The Logic of Assured Retaliation' in Muthiah Alagappa (ed.), *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia* (Stanford, CA: Stanford University Press, 2008), pp. 194–95.
- 14 Both India and Pakistan have declared 'minimum credible deterrence' as the objective of their force posture. India officially declared its nuclear doctrine on 4 January 2003. Pakistani officials have stated Pakistan's posture in several interviews. See, for example, the interview with Khalid Kidwai (Director-General, Strategic Plans Division), cited in Cotta-Rasmusino and Martellini, *op. cit.* For detailed analyses, see Rifaat Hussain, 'Nuclear Doctrines in South Asia', South Asian Strategic Studies Institute Research Report No. 4, December 2005.
- 15 Soon after India's and Pakistan's nuclear tests, the US initiated a strategic dialogue led by Strobe Talbot, the deputy secretary of the State Department. At expert-level discussions in July 1998, the US team, led by Robert J Einhorn, presented a non-paper titled 'Minimum Deterrence Posture'. (The author was the then director of arms control and disarmament affairs and representing the Pakistani team in the negotiations). In response, the Pakistani team drafted another non-paper, titled 'Strategic Restraint Regime', which included three interlocking elements of conflict resolution, conventional force restraints and nuclear restraints. See Feroz Hassan Khan, 'Pakistan's Nuclear Force Posture and the 2001–2002 Military Standoff' in Davis, *op. cit.*, p. 132.
- 16 Feroz Hassan Khan, 'Reducing the Risk of Nuclear War in South Asia' in Henry Sokolski (ed.), *Pakistan's Nuclear Future: Reining in the Risk* (Carlisle, PA: Strategic Studies Institute, December 2009).

- 17 Pakistan launched a satellite into orbit from China on 11 August 2011. See *Dawn*, 'Pakistan's communication satellite in orbit', 11 August 2011.
- 18 Pakistan cannot move sensitive arsenals into insecure and unstable areas in the western provinces of Pakistan, but it is also difficult to move them closer to more settled areas near the eastern borders because of the proximity to India.
- 19 See IISS, *The Military Balance 2010* (London: International Institute for Strategic Studies, 2010), pp. 335–36, 349–59.
- 20 India – like Pakistan and Israel – is not a member of the Nuclear Non-Proliferation Treaty (NPT) and hence has no legal obligation towards its provisions. The US Hyde Act of 2008 seems to give India rights without corollary responsibilities, in allowing India to retain eight nuclear power reactors and fast breeder reactors, and a highly enriched uranium facility.
- 21 Several testimonies of US Congress officials hinted at secret planning contingencies for Pakistan's nuclear weapons. Recent press reports – quoting anonymous officials and former officials – have exposed US plans for securing Pakistani nuclear arsenals should it fear they were to fall into the wrong hands.
- This has seriously affected Pakistan's calculus about the security of its arsenals as well as its focus on nuclear security. For example, see Robert Windrem, 'US prepares for worst-case scenario with Pakistan nukes', NBC, 3 August 2011. For a detailed examination of the impact of such perceptions on nuclear security, see Feroz Hassan Khan, 'Pakistan's Nuclear Security: Separating Myths from Reality', *Arms Control Today* (July/August 2009).
- 22 Already Pakistan's Hatf series of missiles includes nine varieties of solid, liquid ballistic and cruise missiles, both land- and air-based, in various stages of development and induction into service.
- 23 See Barry R Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks* (Ithaca, NY: Cornell University Press, 1991), p. 2. Also see Feroz Hassan Khan, 'Challenges to Nuclear Stability in South Asia', *Nonproliferation Review* (Vol. 10, No. 1, Spring 2003), p. 64.
- 24 Rodney W Jones, 'Pakistan's Nuclear Poker Bet', *Foreign Policy*, 27 May 2011.
- 25 *Ibid.*
- 26 James M Acton, *Deterrence during Disarmament: Deep Nuclear Reductions and International Security* (London: IISS, 2011), p. 7.
- 27 The production of indigenous fissile material is curtailed by two major limits: the availability of uranium resources, mining and milling; and the lack of commercial-scale reprocessing plants. But Pakistan is continuing to modernise its nuclear programme, not least because most of the opportunity cost has already been made, labour costs are low and the national resolve is high.
- 28 Pakistan has upped the nuclear ante on its force postures. This includes an increase in its fissile material production capacity and obstructionism during the fissile material cut-off treaty negotiations. In April 2011 Pakistan conducted tests using the Nasr/Hatf-9 ballistic missile that has a range of 60 km and could be tipped with nuclear warheads. This was undertaken as an act of deterrence in answer to India's new military doctrine of Cold Start. See Paul K Kerr and Mary Beth Nikitin, 'Pakistan Nuclear Weapons: Proliferation and Security Issues', Congressional Research Service, Report RL43248, 20 July 2011. See Zia Mian and A H Nayyar, 'Playing the Nuclear Game: Pakistan and the Fissile Material Cutoff Treaty', *Arms Control Today* (April 2010). Rodney W Jones, 'Pakistan's Answer to Cold Start?', *Friday Times* [Pakistan], 13–19 May 2011.
- 29 Khan, *op. cit.* in note 6.