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# Stability in the Nuclear Context: Making South Asians Safe

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## The Context

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India and Pakistan tested nuclear weapons in 1998, declaring their respective capabilities to the world for the first time. With the tests came tremendous global attention which required a responsible and mature response from both sides. Twelve years on, one is compelled to accept significant progress in terms of ensuring stable deterrence. Much of this however is attributable to individual actions by both sides. Mutual cooperation has been sluggish; this, by itself, implies a sub-optimal state as far as strategic stability is concerned. It is a misnomer for geographically contiguous nuclear powers to believe that the nuclear environment can be truly stable without active collaboration with the adversary aimed at minimizing risks. Indeed, as many continue to highlight, the stakes are simply too high for the nuclear aspect to be held hostage to the overall state of the Pakistan-India relationship. Yet, this is precisely what these two South Asian powers are guilty of.

Much has been written about the South Asian nuclear rivalry over the past decade. Notwithstanding a number of worthy scholarly analyses of the nuclear programs and what the capabilities mean for stability in the region, there is distinct politicization of the narrative surrounding

nuclear weapons in South Asia. Of late, the international community has been preoccupied with the threat of 'loose nukes' in Pakistan; nuclear terrorism, and not the more plausible danger of an inadvertent breakdown of deterrence in the region has consumed the debate. Commentators from Pakistan and India, especially those close to their respective strategic establishments, on the other hand, are more interested in boasting about their own achievements while pointing fingers at the other as the source of instability. Very few have bothered to highlight that such a competitive lens is misplaced altogether – the fact is that unless Pakistan and India work together to minimize the risks inherent in any nuclear environment, both end up increasing vulnerability to a nuclear mishap. The necessity of cooperation is dictated, among other aspects, by their geographical proximity; neither can hope to escape the ramifications of any notable nuclear incident in either country.

This security brief analyzes the state of strategic stability in South Asia. The ingredients of stable deterrence are highlighted and Pakistan and India's progress towards this ideal is evaluated. Practical recommendations for enhancing stability are presented subsequently. These can be taken up in future track-I or track-II deliberations.

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# Deterrence Stability South Asia

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Nuclear weapons are unique military tools in that they are meant to prevent war, not to win it. They help avoid conflict by *detering* an adversary from major aggression. A perfectly safe nuclear weapon is one that is never used, deliberately or inadvertently. The real life approximation holds that the lower the likelihood – to be sure, there is never an absolute guarantee – of such a mishap, the more stable the deterrence environment. While virtually all nuclear theorists would accept this notion, there is tremendous disagreement on whether, and just how, stable deterrence can be achieved.<sup>1</sup> Literature points to at least five prerequisites for stable deterrence in a nuclear dyad: (i) a survivable nuclear arsenal on both sides; (ii) absence of any incentive to pre-empt the other's capability; (iii) absence of any justification for a nuclear power to launch a deliberate strike; (iv) minimal possibility of unauthorized or inadvertent use; and (v) negligible possibility of nuclear accidents.<sup>2</sup>

In Pakistan and India's case, an analysis of the level of deterrence stability presents a mixed picture. There is great variation in the level of stability during times of peace versus that in crisis situations. Deterrence in crises is significantly less robust. This stems from the fact that crisis-time stability necessarily requires *ex ante* collaboration between the adversaries to institute strong buffers against any nuclear incidents, deliberate or otherwise. The individualistic approach to attaining nuclear stability in South Asia has left an obvious void in this regard.

## Peace time deterrence

A survivable nuclear arsenal refers to the capacity of a country to absorb a nuclear strike and still be able to retaliate in kind. Pakistan and India can comfortably claim to have achieved this. Since 1998,

both have continued to expand their nuclear arsenals to the current modest levels of between 60-90 warheads.<sup>3</sup> The achievements in terms of the delivery systems, principally the missile programs have also been noticeable. Both maintain a variety of mobile missile batteries in enough numbers that neither side would risk pre-empting them.<sup>4</sup> Pre-emption is equally unlikely against warhead storage sites, both because the stockpiles are large enough and physically concealed and also since both sides reportedly store warheads and delivery systems separately. The latter makes it virtually impossible to neutralize the launching capability of the adversary entirely.<sup>5</sup>

Looking to the future, the real concern may no longer be survivability but the potential of going too far in this direction. Two issues are worth flagging. For one, both India and Pakistan espouse a minimum deterrent, credible enough to deter the adversary. Yet, their official stances on this issue point towards a slippery slope: Pakistan holds that the concept is dynamic and its own upgradation is tied to the Indian capability; India uses the same logic vis-à-vis China. This kind of 'benchmarking against the other' mindset is precisely what led the Cold War rivals to amass insanely large arsenals. Neither Pakistan, nor India is at present willing to accept the irrelevancy of comparative numbers of warheads, fissile material, and delivery systems beyond a point. Theoretically, both should be able to come up with the required level of capability that ought to credibly threaten to inflict unacceptable damage to the adversary (for India the calculation would be based on China and Pakistan) irrespective of the strength of the latter's arsenal. Thus far, the bureaucracies remain resistant to debating just "how much is enough" for minimum deterrence to hold.

Second, the induction of new capabilities and technology may affect peace time stability negatively. India formally espouses a sea-based

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<sup>1</sup> This disagreement forms the crux of the debate between deterrence optimists and pessimists. The debate provides the theoretical underpinnings for much of the discourse relevant to the discussion here. For an excellent overview of the optimism-pessimism debate, see Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate* (New York: W.W.Norton & Company, 1995). Also see Scott Sagan, "The Perils of Proliferation," *International Security*, Vol.18, 1994; Kurt M. Campbell, Robert J. Einhorn, and Mitchell B. Reiss, eds., *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices* (Washington, D.C.: Brookings Institution Press, 2004); Devin Hagerty, *The Consequences of Nuclear Proliferation* (Cambridge: MIT Press, 1998); Barry R. Schneider, "Nuclear Proliferation and Counter-Proliferation: Policy Issues and Debates," *Mershon International Studies Review*, Vol. 38, October 1994.

<sup>2</sup> These conditions are derived from the rational theory of deterrence, the most commonly applied formulation, especially by deterrence optimists but it also encapsulates the concerns of organizational theorists, the rival camp in terms of views on this issue. Sagan and Waltz, *The Spread*, 1995, p.51.

<sup>3</sup> Pakistan is believed to possess 70-90 warheads while India's tally is estimated at 60-80 warheads. Federation of American Scientists, "Status of World Nuclear Forces," <http://www.fas.org/programs/ssp/nukes/nuclearweapons/nukestatus.html>.

<sup>4</sup> For a brief overview of the missile capabilities of the two sides, see Bharath Gopalaswamy and Moeed Yusuf, "Nuclear South Asia: Implications of the Indian and Pakistani Arsenals," *Program in Arms Control, Disarmament, and International Security (ACDIS)*, University of Illinois, Swords and Ploughshares series XVIII (1), pp.8-9.

<sup>5</sup> Proliferation optimists argue that preemption of nuclear forces can never be carried out unless one is completely certain of being able to eliminate the retaliatory capacity of the opponent in its entirety. Otherwise, optimists argue, the mere repercussions of an unsuccessful attempt would deter any thoughts of attempting preemption.

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deterrent which implies active deployment of submarine-based delivery systems. Pakistan may follow suit in due course as well. Deployment brings with it a set of challenges that put additional burden on the command and control structures, making them more susceptible to failure (we discuss deployment related risks briefly in the next section). Moreover, India's interest in high-end technologies like a Ballistic Missile Defense (BMD) shield will force Pakistan to increase its own offensive capability and perhaps even posture more provocatively.<sup>6</sup> The net result will be a relatively destabilized nuclear equation.

The fear of unauthorized or inadvertent launches is countered by ensuring redundant command and control systems and relaxed nuclear postures. While open source information regarding Pakistan and India is sketchy, from what is known, both countries seem to have pursued the need for robust structures seriously. Their recessed peace-time postures limit the burden on their command and control structures and safety protocols to begin with. In terms of specific measures, Pakistan has set up a dedicated National Command Authority that overlooks the nuclear program and is entrusted with strategic decision making.<sup>7</sup> To prevent unauthorized use, a "three man rule" is in effect which ensures redundancy; if official statements are to be believed, an electronic locking system to prevent unauthorized use is also in place.<sup>8</sup> A Personnel Reliability Program which screens individuals before they are entrusted to responsible positions within the nuclear program is operational as well.<sup>9</sup> India, on its part, has also set up a Nuclear Command Authority which is firmly under civilian control. It, unlike Pakistan, has also formally declared a nuclear doctrine which states India's commitment to a 'No First Use' posture.<sup>10</sup> Specific information about India's safety and security protocols is not easily available but thus far, no obvious red flags have come to light. It would not be unreasonable to expect India to possess

systems that are comparable to Pakistan's in their robustness.

Finally, the global concern of a terrorist threat specific to the Pakistani program also falls within the ambit of safety and security of nuclear weapons. The world worries that an insider, either acting alone or in collaboration with an outsider could get hold of components of Pakistan's nuclear arsenal. The issue has a normative appeal and is virtually impossible to evaluate in the absence of any authentic information. Some indication is provided by global intelligence assessments which, for now, seem relatively confident that the Pakistani establishment has managed to insulate its program from the broader troubles that beset the country.<sup>11</sup> Notwithstanding, what can be said with somewhat more certainty is that as long as the Pakistani arsenal is un-deployed and de-mated, even a successful terrorist intrusion will not allow the capture of a deployable nuclear weapon or of material that can be instantly detonated. The possibility of such an episode undermining deterrence instantly in peace time, is therefore low.

## Challenges to Deterrence Stability during Crises

Crises between Pakistan and India represent a quantum leap in terms of the induction of instability inducing factors relevant to the nuclear calculus. To begin with, every crisis carries with it a realistic possibility of uncontrolled escalation leading to a deliberate or inadvertent nuclear strike. Not to mention, in the South Asian context, escalation represents uncharted territory, a dangerous proposition given that no escalation control mechanisms have been institutionalized. Yet, crises remain highly likely for more than one reason. There are outstanding contentious issues between the two

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6 For a detailed argument on the destabilizing impact of induction of BMD into the South Asian equation, see Moeed Yusuf and Khalid Banuri, "India's Quest for Ballistic Missile Defense: A Slippery Slope" in Subrata Ghoshroy and Gotz Neuneck, eds. *South Asia at a Crossroads: Conflict or Cooperation in the Age of Nuclear Weapons, Missile Defense, and Space Rivalries* (Hamburg: Nomos, 2010).

7 Kenneth Luongo and Naem Salik, "Building Confidence in Pakistan's Nuclear Security," *Arms Control Today*, December 1, 2007.

8 Rizwan Zeb, "David Versus Goliath? Pakistan's Nuclear Doctrine: Motivations, Principles and Future," *Defense and Security Analysis*, Vol.22, No.4 (December 2007); Rizwan Zeb, "Pakistan's Nukes: How Safe is Safe Enough?," *Program in Arms Control, Disarmament, and International Security (ACDIS)*, University of Illinois, *Swords and Ploughshares* series XVIII (1), p.18.

9 Zeb, "David Versus Goliath?," 2007.

10 India formalized its nuclear doctrine in 2003 which followed up from a draft doctrine in 1999. The formal doctrine announced the formation of the Nuclear Command Authority and stated, among other aspects, India's willingness for a credible minimum deterrent and a 'No First Use' policy.

11 "US Confident Pakistan Nukes Secure: CIA Chief," *Agence France-Presse*, May 19, 2009, <http://www.hindustantimes.com/US-confident-Pakistan-nukes-secure-CIA-chief/Article1-412245.aspx>; "Pakistani N-arsenal Safe but Vulnerable, Says US," *Dawn*, February 4, 2010, <http://news.dawn.com/wps/wcm/connect/dawn-content-library/dawn/the-newspaper/front-page/pakistani-narsenal-safe-but-vulnerable,-says-us-420>.

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sides which keep forcing them to the verge of a diplomatic breakdown. Moreover, both sides seem to believe that limited aggression under the nuclear umbrella is permissible and will not warrant a nuclear response. India's limited war doctrine, Cold Start, formalizes this belief while Pakistan's propensity to employ non-state actors on Indian soil in the past underscores its traditional propensity for similar risk taking.<sup>12</sup> In the absence of clearly defined nuclear red lines, it is very difficult to determine just what constitutes as 'limited aggression' for either side. A number of simulations the author has been part of point to wide divergence in how the two sides view the situation. Finally, non-state actors are no longer playing to the tune of the Pakistani state and can engineer a Pakistan-India crisis on their own, Mumbai being a pertinent example. Most analysts suggest that a repeat of such an episode will see some form of Indian aggression followed by a Pakistani counter-response;<sup>13</sup> what follows is anybody's guess but it may well entail further escalation at a swift pace during which either side may cross the other's nuclear red lines.

In an escalated conflict, survivability of Indian and Pakistani nuclear arsenals shall remain intact and pre-emption against the nuclear forces would still be a far cry, even from the stronger party, India. Given Pakistan's mobile delivery systems and a significant number of warheads, it would be impossible for New Delhi to guarantee that the entire arsenal will be successfully neutralized in a pre-emptive strike. This would hold even if Pakistan deployed its weapon systems during the course of an escalation. That said, there are two potential dangers in crisis situations. First, Pakistan and India use dual-purpose missiles and air craft for delivery. In the absence of advanced early warning capabilities, an incoming aircraft or missile could well be perceived as an attempt at pre-emption. The defender may panic and consider launching its own strike before it is too late.

Second, it is worth pointing out the vulnerability of

Pakistan's nuclear decision making chain of command. Pakistan's entire government and military top brass sit within 50 miles in Islamabad/Rawal Pindi and could potentially be neutralized in a pre-emptive strike that seeks to decapitate the country's nerve center. For those who see this as rather farfetched – the author included – the concern is not as much that such an Indian strike would materialize but that Pakistani decision makers would have considered this possibility in their own contingency planning and taken precautionary measures. In the absence of a bilateral agreement that outlaws pre-emption of the nuclear chain of command, Pakistan may consider dispersing its leadership geographically or even devolving authority of launch to a lower level ex ante. A dispersed NCA amidst the fog of war would find it very difficult to make an informed decision while devolved authority would add to the risk of a premature or miscalculated launch.

The challenge of preventing unauthorized or inadvertent launches increases multifold and crystallizes the kind of dangers India and Pakistan may end up subjecting their populations to in crisis situations. Their command and control structures may be robust enough to hold in peace time but the doctrinal and geographical asymmetries transform the equation under the stress of crises. For one, even in the absence of a sea-based capability which has to be constantly deployed for full effect, both sides would inevitably contemplate mating and subsequently deploying their ground and air based assets as a crisis escalates. This implies transportation, wide dispersal, ground preparations which may be misconstrued as an imminent attack by the adversary, and even pre-delegation of authority to launch. Pakistan, espousing 'First Use' and more vulnerable to total annihilation, will be more susceptible to these pressures.<sup>14</sup> In any case, all this adds significantly to the demands on the command and control structure: it necessitates safe transportation in an accident-prone, hot and dry South Asian climate,

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<sup>12</sup> For a sense of how the Cold Start doctrine was initially envisioned, see Shaukat Qadir, "India's 'Cold Start' Strategy," Daily Times, May 8, 2004, [http://www.dailytimes.com.pk/default.asp?page=story\\_8-5-2004\\_pg3\\_3](http://www.dailytimes.com.pk/default.asp?page=story_8-5-2004_pg3_3). Since the doctrine came to light, the Indian defense establishment has maintained that the idea was never pursued seriously.

<sup>13</sup> Daniel Markey, "Terrorism and Indo-Pakistani Escalation," CPA Contingency Planning Memorandum No. 6, Council on Foreign Relations, January 2010.

<sup>14</sup> Pakistan is likely to run up against what Peter Feaver calls the "always-never dilemma". It reflects the condition where "leaders want a high assurance that weapons will always work when directed and similar assurance the weapons will never be used in the absence of authorized directions." Therefore, while dispersal may ensure survivability and pre-delegation guarantee a launch, it will at the same time raise the risk of losing control of the weapon systems and of unauthorized or miscalculated launch respectively. Peter Feaver, "Command and Control in Emerging Nuclear Nations," *International Security* 17 (Winter 1992-93), p.163.

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robust and authenticated communication systems and fool proof, redundant launch protocols under stressful situations. It remains unclear how much confidence the two sides have in their respective mechanisms but the very fact that they have never been tested in real life conditions make malfunctions quite likely if an escalated conflict is experienced.

The possibility of a miscalculation in the South Asian case is also substantial given the geographical contiguity between Pakistan and India. The Cold War rivals had the luxury of sitting thousands of miles away and factoring in a decision time of over half an hour in any eventuality. In South Asia, the flight times for missiles between major urban cities are 5-15 minutes. In essence, there is virtually no time for informed decision making; the possibility of making overly conservative judgments about the other side's intentions during a crisis, and subsequently of premature decisions, is therefore much greater than during the Cold War. This is especially true given that decision makers on both sides already suffer from acute cognitive dissonance about the other. Interestingly enough, even the usually cited remedy, an advanced early warning capability, may not deliver in South Asia; Pakistan and India are geographically too close for the technology to be able to work meaningfully.<sup>15</sup>

One other aspect of crisis management is relevant to the discussion here, i.e. mechanisms to reduce and clarify misunderstandings. Empirical evidence and theoretical literature on the issue is categorical in emphasizing the need for direct communications between the nuclear adversaries during a crisis to avoid any misunderstandings. Not only do Pakistan and India lack the communication mechanisms that are likely to hold under the stresses of an escalating crisis but they have deliberately sought to minimize direct contact, and instead bank on third parties to intervene in the past. At Kargil, in 2001-02, and after Mumbai in

2008, the U.S. was ushered in as part of the response strategy of one or both sides. Even though the U.S. acted as a neutral broker and managed to pull both sides back from the brink on those occasions, contracting out crisis management in this way is fraught with risks. The third party often has its own interests and may operate in a biased manner or the preferred broker may not be willing or able to play a role every time as the parties to the conflict anticipate. Looking ahead, both are realistic possibilities in the South Asian context. Consider a repeat of Mumbai: for escalation to be avoided, the U.S. would essentially have to nudge India to pull back without being able to employ immediate and tangible retribution against Pakistan. This is likely to be unacceptable to New Delhi next time round and such leniency towards Pakistan may not even find support in Washington itself. Nonetheless, it is still possible that anticipating such a placating role from the U.S., India may decide to aggress against Pakistan without giving Washington enough time to intervene diplomatically.<sup>16</sup> The Cold Start doctrine, however far from operationalization, raises this possibility.

Finally, nuclear accidents hold a special place in the South Asian context. Geographical proximity dictates that any major accident can have catastrophic effects across the border. While this can even happen in peace time, the most likely scenario in which strategic stability could be directly undermined would entail an accidental nuclear detonation on one's territory during a limited or escalated conventional conflict. The reason could be a transportation or handling incident, sabotage, or even a conventional strike from the adversary on a nuclear storage facility. The affected side may not be able to determine the cause of the detonation swiftly and could easily consider it an intentional provocation by the adversary, especially if the incident generated a mushroom cloud typical of a deliberate detonation.<sup>17</sup> Escalation control would be severely tested in such a situation.

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<sup>15</sup> Gopalaswamy and Yusuf, "Nuclear South Asia," 2010, p.12

<sup>16</sup> For an analysis of the possible complications and dangers associated with the U.S. role in a future Pakistan-India crisis, see Moeed Yusuf, "U.S. as an Interlocutor in Regional Crises: Deriving Policy Implications from a Study of the 2001-2002 India-Pakistan Standoff," Collection of Papers from the 2009 Nuclear Scholars Initiative (Washington, DC: Center for Strategic and International Studies, 2010).

<sup>17</sup> Michael Krepon and Ziad Haider, "Reducing Nuclear Dangers in South Asia," Report No. 50, *The Henry L. Stimson Center*, p.5.

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# The Way Forward: Towards Enhanced Deterrence Stability

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Enhancing strategic stability in South Asia requires much greater cooperation and understanding between the Pakistani and Indian nuclear establishments. Much of the difference between peace and crisis time stability levels can be traced back to the lack of a collaborative spirit between the two sides. While individual progress is good enough to achieve peace time stability, crisis stability is in large dependent on mutual understanding of the other and ex ante bilateral arrangements, preferably formalized, that minimize the possibility of a mishap. As is obvious from the preceding analysis, the most pertinent way to guarantee stability is to ensure absence of bilateral crises. This would involve a determined effort by both sides to address the underlying causes of tensions – Kashmir being the silver bullet. In addition, both sides should shed any aspirations of testing the space for limited conflict under the nuclear umbrella; Cold Start should be shelved and Pakistan should never return to using sub-state proxies against India. Both sides must also insulate the bilateral dialogue from terrorist incidents. India's present stance on the Composite Dialogue plays into the hands of the militant enclave. Pakistan, on its part, must make a determined effort to decimate the militant capacity of anti-India groups operating from its soil in a reasonable period of time.

Next, measures that may enhance mutual understanding or reduce the mistrust ought to be pursued. These may include a common lexicon of nuclear terms, binding protocols that would force the two sides to communicate directly during crises instead of relying on a third party, and some level of transparency in the nuclear policies, postures, and command and control protocols (including safety and security procedures) without compromising any operational details or the credibility of the deterrent. The establishment of Nuclear Risk Reduction Centers to share timely information about routine

developments or extraordinary events and clarify misunderstandings should also be considered. Mechanisms should also be set up for regular contact and for sharing of best practices between the scientists manning the civilian nuclear programs on both sides.<sup>18</sup>

Furthermore, there is scope for agreements on non-deployment of nuclear weapons during peace time and no-pre-emption, both of arsenals and the nuclear chain of command. Although verifiability will remain a concern, even the mere formalization of these agreements will lead to significant confidence building and arguably, play a role in making strategies and contingency plans on both sides less conservative. It is important to note that neither agreement is inconsistent with what the two sides already desire. Pre-emption of the arsenal is impossible to begin with while taking out the Pakistani leadership will only add to the possibility of an ill-informed launch by Pakistan, a development India has every reason to avoid. As for deployment, both sides maintain de-alerted postures in peace time and until a sea-based deterrent is operationalized – this is well over a decade away at best – there is no reason why they should feel a need to change this. At the very least, a lapsable non-deployment agreement should be considered.

Finally, there is a need for a dedicated, holistic dialogue on various aspects of the nuclear relationship. The process should remain uninterrupted irrespective of the overall health of the bilateral equation. The dialogue should cover all areas that one or the other side considers vital to its ability to enhance strategic stability. For instance, India would want to have a candid discussion on the 'China factor', Pakistan may wish to discuss the link between nuclear deterrence and the growing conventional imbalance, both sides also need to discuss the logic of their fissile missile stockpile trajectories, and perhaps even the "just how much is enough" question (although this may primarily be an internal decision on both sides), among others.

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18 Some of these recommendations have already been highlighted during ongoing track-II dialogues. One such initiative, focused specifically on nuclear issues that the author is part of is the *Ottawa Dialogue*.

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## Conclusion

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This discussion has highlighted the numerous areas of vulnerability in the South Asian nuclear equation. Admittedly, there has been a disproportionate focus on the problem areas. Yet, none of this ought to be construed as a prediction that the next Pakistan-India crisis will necessarily escalate and bring nuclear weapons into play. Nor should this be considered an attack on the thinking of the nuclear establishments on either side. What is presented here is simply an effort to apply a collaborative lens to the South Asian nuclear rivalry. The plea is to move away from examining deterrence in a Pakistan *versus* India framework to one whose

central concern is safety of the billion plus peoples in these two countries. Neither side should be mistaken: any nuclear strike (for that matter even most major accidents), deliberate or not, will have catastrophic consequences for both sides. As has been explained already, moving ahead, the only way to minimize this horrific possibility is through active collaboration, dialogue, and confidence building on nuclear issues between the two countries. Pakistan and India can hardly claim to be mature nuclear powers if they are unable to institute a dialogue specific to nuclear weapons programs and insulate it from their larger problems. This must happen – for the sake of the people that inhabit South Asia.

