Nuclear Risk Reduction In South Asia: Building on Common Ground

Chris Gagné

If you have not lost command of yourself and realize clearly what this could lead to, then, Mr. President, you and I should not now pull on the ends of the rope in which you have tied a knot of war, because the harder you and I pull, the tighter this knot will become. And a time may come when this knot is tied so tight that the person who tied it is no longer capable of untying it, and then the knot will have to be cut. What that would mean I need not explain to you, because you yourself understand perfectly well what dread forces our two countries possess.[1]

After twenty-five years of speculation about nuclear weapons programs in South Asia and the effect of proliferation on the region's stability, nuclear and ballistic missile tests have proven that India and Pakistan are *de facto* nuclear weapons states. Policy makers in both India and Pakistan have decided that nuclear weapons are desirable and that nuclear deterrence is necessary. But does the mere possession of nuclear weapons fulfill the requirements of stable nuclear deterrence? If India and Pakistan have to work at nuclear risk reduction—if stability is not automatic—how should they go about doing so? What bilateral or unilateral measures might these countries realistically take to reduce the risk of nuclear war resulting from an accident or miscalculation?

APPLYING DETERRENCE THEORY TO SOUTH ASIA

Scholars disagree about whether nuclear weapons promote stability or instability. "Nuclear optimists" such as Kenneth Waltz argue that offsetting nuclear weapon capabilities are stabilizing because they make war too costly. According to this line of thinking, the destructive power of even a few nuclear weapons is so immense that no rational leader would risk waging war if nuclear retaliation by the enemy were even remotely possible.[2] Waltz claims that when faced with almost certain destruction, military miscalculation becomes unlikely among nuclear powers.[3] Devin Hagerty argued in 1998 that the absence

[1] Soviet Premier Nikita Khruschev to US President John F. Kennedy during the Cuban Missile Crisis, Department of State Bulletin 69 (November 1973).

[2] Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate* (New York: W.W. Norton & Company, 1995), 24–5.

[3] Ibid., 8.

of war in South Asia since the beginning of India's nuclear weapon program is evidence that "evolving nuclear weapon capabilities can have soothing or neutral effects, even during this allegedly destabilizing phase of the proliferation process."[4] "Nuclear pessimists" such as Scott Sagan claim that the potential dangers of nuclear weapons outweigh any stabilizing effect they might have. Sagan argues that serious accidents involving nuclear weapons are bound to occur. He cites numerous examples from the United States where those charged with manning nuclear forces made grievous errors that were quickly and quietly covered up. In Sagan's view, preventing a catastrophic accident in an increasingly nuclearized world would be extremely difficult, especially in regions of tension with relatively new programs.[5]

The debate is by no means simple. Even if offsetting nuclear arsenals are sufficient to prevent full-scale wars among nuclear powers, nuclear weapons might not deter lower levels of violence. In 1961, Glenn Snyder wrote, "the Soviets probably feel, considering the massive retaliation threat alone, that there is a range of minor ventures which they can undertake with impunity, despite the objective existence of *some* probability of retaliation."[6] Subsequent proxy wars in Vietnam and Afghanistan proved that the United States and the Soviet Union were willing to engage in violence below a certain, undefined threshold. Such conflicts illustrate what deterrence theorists have dubbed "the stability-instability paradox" which states that, "to the extent that the military balance is stable at the level of all-out nuclear war, it will become less stable at lower levels of violence."[7] Today, the same rules seem to apply to South Asia where India and Pakistan fought a border war in 1999, one year after both tested nuclear weapons. In this instance, offsetting nuclear capabilities seem to have encouraged military adventurism on the part of Pakistan by creating pressure to keep conflicts localized and deterring a punitive Indian attack across the international border that might have escalated uncontrollably.

Waltz and Hagerty argue that nuclear weapons will serve to keep conflicts limited, even if they do not prevent them, because no rational actor would risk crossing the nuclear threshold. However, Robert Jervis suggests that escalation could conceivably be a rational choice in some instances, motivated by "national honor, the desire to harm and weaken those who represent abhorred values, and the belief that the other will retreat rather than pay the price which can be exacted for victory."[8] Furthermore, Jervis

---

[4] Devin T. Hagerty, *The Consequences of Nuclear Proliferation: Lessons from South Asia* (Cambridge, MA: The MIT Press, 1998), 6.

[5] Scott D. Sagan, *The Limits of Safety* (Princeton, NJ: Princeton University Press, 1993); Sagan and Waltz, *The Spread of Nuclear Weapons*.

[6] Glenn Snyder, *Deterrence and Defense* (Princeton, NJ: Princeton University Press, 1961), 226.

[7] Robert Jervis, *The Illogic of American Nuclear Strategy* (Ithaca, NY: Cornell University Press, 1984), 31.

[8] Ibid., 135.

points out that conflicts can take on a dynamic of their own which makes escalation difficult to predict or control:

> Although undesired escalation obviously does not occur all the time, the danger is always present. The room for misunderstanding, the pressure to act before the other side has seized the initiative, the role of unexpected defeats or unanticipated opportunities, all are sufficiently great—and interacting—so that it is rare that decision makers can confidently predict the end-point of the trajectory which an initial resort to violence starts.[9]

In the *Illogic of American Nuclear Strategy*, Jervis acknowledges that nuclear deterrence may prevent wars, but he asserts that conflicts between nuclear powers will resemble the game of "chicken" where each side will be tempted to test the other's resolve. Should this game lead to military activities, there is a danger that the situation will get out of control because "the workings of machines and the reaction of humans in times of stress cannot be predicted with high confidence."[10] Sagan uses organizational theory to reinforce this position by demonstrating the failures of both man and machine in Cold War crises that could have inadvertently caused a nuclear war.[11]

In making his case for nuclear optimism, Waltz comes close to dismissing the dangers of uncontrolled escalation and unpredictable accidents. However, even his confident view of stable deterrence is predicated on three major requirements: 1) there must be no preventative war while a state is developing its nuclear capability; 2) both states must develop a sufficient second-strike force to retaliate if attacked first; and 3) the nuclear arsenals must not be prone to accidental or unauthorized use.[12] Once the first requirement has been met, Waltz assumes that the second and third conditions are easy to achieve. Because the destructive force of a nuclear weapon is so great, he argues that no rational actor would be willing risk a first strike if even a few of the enemy's missiles or bombers might survive. Furthermore, Waltz claims that even with small arsenals, at least a few weapons are likely to survive a first strike due to dispersal, mobility, and imperfect intelligence. And while Sagan warns that organizations handling nuclear weapons are likely to be accident prone, Waltz argues that smaller arsenals will invite fewer accidents than the large Cold War arsenals did.[13]

---

[9] Ibid., 140.

[10] Ibid., 138.

[11] Sagan, *The Limits of Safety*.

[12] Sagan and Waltz, *The Spread of Nuclear Weapons*, 51.

[13] Ibid.

None of Waltz's requirements for stable nuclear deterrence have been met in South Asia. Although India and Pakistan have openly tested nuclear devices, the first requirement has not been fully met since both countries remain ambiguous about weaponization. The simplicity of meeting the second condition cannot be taken for granted either. India might still assume that Pakistan's nuclear facilities are vulnerable to a preventative strike. Pakistan is significantly smaller than India geographically and enjoys less "strategic depth" in which to hide its small arsenal of nuclear weapons and delivery vehicles. The locations of Pakistan's airfields are known to India and well within reach of its air force and ballistic missiles. In light of this, Pakistan might feel uncomfortable about the survivability of its nuclear deterrent during a crisis. Pakistan might seek to protect its force during a crisis by moving it—an action that could be perceived in Delhi as a prelude to attack. A smaller, conventionally weaker Pakistan might also feel pressured to institute a launch-on-warning policy to defeat a surprise attack. Sagan warns that such policies dramatically increase the risk of accidents. Furthermore, the risk of an accident leading to nuclear war would be particularly great in South Asia where there would be almost no time to distinguish between a deliberate launch, an accident, or a false alarm. Even Waltz argues against a policy of launch-on-warning, emphasizing that it is a mistake not likely to be repeated by new nuclear powers because it "makes no sense." However, when faced with the prospect of being defeated a fourth time by its larger neighbor, a launch-on-warning policy might make sense to Pakistan which has repeatedly rejected India's no-first-use proposals.

Waltz would argue that a first strike scenario in South Asia is highly improbable. Sagan would assert that it is nevertheless possible. Both might be right. And while both scholars might disagree about the dangers or advantages of proliferation, neither would suggest that India and Pakistan should merely bide their time and wait to see whether nuclear optimism or pessimism prevails when put to the ultimate test. In the closing arguments of his debate with Sagan about the consequences of the proliferation of nuclear weapons, Waltz quotes a *New York Times* editorial which argued that rolling back the nuclear arms race on the subcontinent "will require India and Pakistan to address their insecurity by building mutual confidence and reducing the risk of war." Waltz follows the statement by asserting, "[building mutual confidence and reducing the risk of war] are exactly the effects that the mutual possession of nuclear weapons produce, as some Indians and Pakistanis have come to realize."[14] Robert Jervis also claims that with the spread of nuclear weapons, "the impulses toward cooperation and toward conflict have both been strengthened." But Jervis warns that the interdependence created by the prospect of mutual destruction "does not reliably lead to cooperation." Rather, the impulses of conflict and cooperation create "especially great, and especially contradictory, pressures" for nuclear states.[15]

---

[14] Sagan and Waltz, *The Spread of Nuclear Weapons*, 112; "Disarming the Subcontinent," *New York Times*, 29 March 1994.

[15] Jervis, *The Illogic of American Nuclear Strategy*, 30–1.

In the South Asian case, India and Pakistan have not yet adopted nuclear risk-reduction measures (NRRMs). Instead, the contradictory pressures that Jervis warns of have pushed the countries further apart. Since India and Pakistan tested in 1998 and declared themselves nuclear weapons states, they have remained ambiguous about their level of deployment. One year after the tests, they fought a small, but bloody border war, which prompted President Bill Clinton to declare South Asia as "the most dangerous place in the world."[16] Since the Kargil conflict and the subsequent military takeover in Pakistan, neither side has engaged in dialogue about their most pressing bilateral issues, including nuclear risk reduction. The longer India and Pakistan are estranged, the more distrust builds and the more both sides are prone to suspect the worst from each other. In such an atmosphere, the conditions for stable deterrence as described by Waltz, Hagerty, and other nuclear optimists are absent, while the fears raised by Jervis and Sagan about uncontrolled escalation, accidents, and miscalculation become increasingly plausible.

Three years after the tests, deterrence in South Asia is tenuous at best. None of Waltz's conditions for stable nuclear deterrence have been met. Nuclear facilities in Pakistan may still be vulnerable to a first strike. The safety of nuclear facilities and the reliability of command and control systems in India and Pakistan are also in doubt due to the technical and organizational problems inherent in all such systems, particularly in times of crisis. Although it is not likely that either country would rationally contemplate a sudden first strike, the possibility of conflict escalation cannot be denied. Furthermore, Jervis notes, "in nuclear peace-making, the ability to make credible promises is as important as the ability to make credible threats."[17] In the current climate of silence, opacity, and mistrust, promises lack credibility and could encourage military brinksmanship and unwise nuclear policies. As evidenced by Kargil, Pakistan's Kashmir policy is prone to brinksmanship which has the potential to spin out of control and further undermines Pakistan's credibility as a responsible and rational nuclear state. India and Pakistan might not be any more prone to war now than they were prior to the start of their nuclear programs; they might actually be less prone to a deliberate, large-scale conflict. However, Kargil and earlier incidents in the 1980s and 1990s suggest that small, yet dangerous, military crises have become more common in South Asia in the shadow of Indian and Pakistani nuclear deterrents.

During the Cold War, deterrence had to be constantly reinforced by NRRMs on both sides of the Iron Curtain. Some of these measures were unilateral, others bilateral or multilateral, but all of them had the goal of reducing the very real danger of nuclear war, accidental or otherwise.[18] Some of these

[16] "India and Pakistan: Preparing for an American Visitor," *Economist*, 18–24 March 2000.

[17] Jervis, *The Illogic of American Nuclear Strategy*, 167.

[18] See Agreement on Measures to Reduce the Outbreak of Nuclear War Between the United States of America and the Union of Soviet Socialist Republics ("Accident Measures" Agreement), 30 September 1971, in *Documents on Disarmament 1971* (Washington, DC: United States Arms Control and Disarmament Agency, 1970), 634–5; Declaration of Basic Principles of Relations Between the United States of America and the Union of Soviet Socialist Republics 29 May 1972, in *Documents on Disarmament 1972* (Washington, DC: United States Arms Control and Disarmament Agency, 1974), 237–40; Concluding Document of the Conference on Security and Cooperation in Europe (Helsinki Final Act), 1 August 1975, in *Documents on*

NRRMs might be adapted to South Asia, others might not, but the implementation of such measures in one form or another is essential for the stability that India and Pakistan seek. Although perfect stability is practically impossible, NRRMs could help India and Pakistan come closer to meeting some of the minimal conditions for stable deterrence proposed by Waltz. Appropriate measures could help safeguard nuclear capabilities in their most vulnerable stage. Actions might also be taken to more confidently alleviate concerns over pre-emption. Unilateral and bilateral steps could be implemented to improve safety measures for nuclear facilities, weapons, and delivery vehicles. At the very least, clear and reliable lines of communication between political and military officials in both countries could help to limit the chances of escalation from miscalculation and make promises of cooperation more credible. India and Pakistan have already identified areas of common ground where some simple and unintrusive NRRMs could be quickly and easily implemented, leading to more substantive measures in the future. Without secure second strike capabilities, dialogue, and the necessary political will to sincerely implement even the most basic risk-reduction measures, the risks of a nuclear crisis in South Asia will grow.

NUCLEAR THREATS, MISPERCEPTIONS, AND SECURITY CONCERNS

The fear of a nuclear exchange is not unwarranted in the region, particularly in light of the stability-instability paradox and the potential for uncontrollable escalation in times of crisis. India and Pakistan have fought four wars in the past fifty years. The scars from the 1971 war, which resulted in the loss of East Pakistan, are still painfully visible on the Pakistani military establishment. Though the first three wars did not appear to have a nuclear dimension, subsequent crises have highlighted growing nuclear dangers in the region. The most recent of these crises was a limited war fought above Kargil along the Line of Control (LoC) after both countries openly declared themselves to be nuclear powers.

When details about the Pakistani nuclear weapons program began to emerge in 1983–84, India reportedly considered an air strike on the enrichment facility at Kahuta. Pakistan had plans for a retaliatory strike and its fears were bolstered by a foreign source that warned of the possibility of an Indian air strike in September–October 1984. A Central Intelligence Agency briefing to a US Senate intelligence subcommittee stated that US satellites had been unable to locate two of India's Jaguar squadrons and assumed that they were about to launch an attack. A major US television network reported the story shortly thereafter. If India had entertained the option of going to war with Pakistan and

---

Disarmament 1975 (Washington, DC: United States Arms Control and Disarmament Agency, 1977), 304–8; Document of the Stockholm Conference on Confidence- and Security-Building Measures and Disarmament in Europe (Stockholm Document), 19 September 1986, in *Documents on Disarmament 1986* (Washington, DC: United States Arms Control and Disarmament Agency, 1991), 555–69; and Vienna Document 1990 of the Negotiations on Confidence- and Security-Building Measures Convened in Accordance with the Relevant Provisions of the Concluding Document of the Vienna Meeting of the Conference on Security and Co-operation in Europe (Vienna Document 1990), 17 November 1990, Internet: http://www.state.gov/www/global/arms/bureau_pm/csbm/vienna_1990.html.

attacking Kahuta, the ensuing clamor might have prompted New Delhi to reconsider.[19] It would not be the last close call that the two countries would face.

The Brasstacks crisis soon followed in 1986–87. As part of a massive peacetime military exercise, India began amassing troops near its western borders in November 1986. In response, Pakistan moved its strike corps to offensive positions on the border. Once again, suspicions arose and tension mounted. For two months, India and Pakistan moved their forces in ways that were mutually provocative with no communication of intent. Then, in late January, India agreed to open talks with Pakistan and assured Pakistan that it did not intend to launch an invasion. After five days of foreign secretary-level talks, both countries promised not to attack each other, to avoid provocative actions along the border, and to pull out their units within fifteen days.[20] While India and Pakistan withdrew their troops from forward positions, the promises they made to avoid provocative actions in the future proved to be empty.

One study asserts that there was an Indian plan to use Exercise Brasstacks and a parallel Operation Trident to provoke a war with Pakistan in order to destroy its nuclear capability before it matured.[21] According to this account, Prime Minister Rajiv Gandhi reportedly was unaware of the intent behind the exercise, even though he was briefed on particulars; Defence Minister Arun Singh and Chief of Army Staff General K. Sundarji planned the operation on their own.[22] Others claim that Brasstacks was converted into Operation Trident in preparation for an offensive response from Pakistan. They dismiss the account of a hidden agenda as speculative and claim that the nuclear question was not a significant issue during Brasstacks, although the crisis might have influenced future nuclear decisions in the region.[23] In either case, during the Brasstacks crisis, there was a near total lack of communication between India and Pakistan and possibly even miscommunication of the highest order within the Indian

[19] W.P.S. Sidhu, "India's Security and Nuclear Risk-Reduction Measures," *Nuclear Risk-Reduction Measures in Southern Asia*, Report No. 26 (Washington, DC: The Henry L. Stimson Center, 1998), 38–9; George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkley, CA: University of California Press, 1999), 240; Hagerty, *The Consequences of Nuclear Proliferation*, 86 fn 96–7.

[20] Hagerty, *The Consequences of Nuclear Proliferation*, 102; "Indo-Pak Accord to De-Escalate Border Tension," *The Statesman* (Calcutta), 5 February 1987.

[21] Raj Chengappa, *Weapons of Peace: Secret Story of India's Quest to Be a Nuclear Power* (New Delhi: Harper Collins Publishers India, 2000), 322.

[22] Chengappa, *Weapons of Peace*, 322–3.

[23] Kanti P. Bajpai, P.R. Chari, Pervaiz Iqbal Cheema, Stephen P. Cohen, and Sumit Ganguly, *Brasstacks and Beyond: Perception and Management of Crisis in South Asia* (New Delhi: Manohar, 1995), 40; Hagerty, *The Consequences of Nuclear Proliferation*, 96–116.

government. Under these circumstances, the potential for a large-scale conflict in the region was obvious and called for serious measures to reduce the risk of war.[24]

Provocative statements by Dr. A.Q. Khan, then head of Pakistan's uranium enrichment program, suggested that the urgency of risk reduction might have been even greater than India had understood at the time. In a controversial interview with Indian journalist Kuldip Nayar during the height of the crisis, Khan reportedly claimed that Pakistan had achieved the capability to build nuclear weapons and was prepared to use them if its existence was threatened. However, the interview was not published until several weeks after the crisis had abated, and most of the statements have since been contested or denied by Dr. Khan.[25]

Yet another crisis occurred in 1990 when an indigenous insurrection in the Kashmir valley, quickly backed by Pakistan, threatened to provoke a war between India and Pakistan. As the conflict escalated, Pakistani Prime Minister Benazir Bhutto proclaimed the Kashmiris' right to self-determination while some influential politicians threatened *jihad* and suggested using nuclear bombs if India waged war against Pakistan.[26] Some reports state that Pakistan actually moved to assemble a nuclear weapon as the crisis heated up.[27] India took the threat of escalation seriously. Officials in the Indian government and military were reportedly uncertain of the capabilities of the Pakistani nuclear program and of India's ability to respond to a nuclear attack.[28] One account of India's nuclear program cites a report that between 1988 and 1990, India readied at least twenty-four nuclear weapons for quick assembly and potential dispersal to airbases.[29] Another report, however, claims that India did not possess a fail-safe delivery system at the time.[30]

Hoping to reduce tensions in the region, US President George Bush sent Robert Gates, a senior administration official, to South Asia. The Gates delegation worried that a conflict over Kashmir might erupt into a full-scale war. Some analysts in Washington feared that India might provoke Pakistan to

---

[24] Chengapa, *Weapons of Peace*, 323; Bajpai et al., *Brasstacks and Beyond*.

[25] Hagerty, *The Consequences of Nuclear Proliferation*, 102–5; Bajpai et al., *Brasstacks and Beyond*, 5.

[26] Chengapa, *Weapons of Peace*, 356; Hagerty, *The Consequences of Nuclear Weapons*, 140–1.

[27] Perkovich, *India's Nuclear Bomb*, 293, 308–9; Hagerty, *The Consequences of Nuclear Weapons*, 154; Seymour Hersh, "On the Nuclear Edge," *New Yorker*, March 1993, 56–7, 61–4, 66–7.

[28] Chengapa, *Weapons of Peace*, 357.

[29] Perkovich, *India's Nuclear Bomb*, 293.

[30] Chengapa, *Weapons of Peace*, 356–8.

resort to nuclear weapons.[31] Others involved in the decision-making process claim that the nuclear dimension was a peripheral concern at most.[32] Many argue that the United States believed that Pakistan's nuclear program might be in possession of a nuclear device and the US was unsure about who might have the authority, or opportunity, to use such a weapon in an extreme situation.[33] During this crisis, India and Pakistan were content to exchange threats rather than bombs. Soon afterward, both countries took steps to de-escalate tension and resume bilateral talks. But in the wake of this crisis, India and Pakistan intensified their nuclear weapons programs.[34]

After the nuclear tests by India and Pakistan in 1998, some analysts and policy makers in both countries believed that the days of uncertainty and strategic miscalculation were over.[35] Proponents of the Bomb asserted that nuclear deterrence had been achieved and neither side would dare use a nuclear weapon against the other.[36] Others in South Asia and abroad warned that the possession of nuclear weapons would encourage limited or low-level conflicts.[37] This view was proved right in May 1999 when Pakistan surreptitiously deployed troops on the Indian side of the LoC above Kargil. Though the intent of the Kargil plan is still not entirely clear, the damage that the ensuing war dealt to India–Pakistan relations is all too apparent.

The casualties of the Kargil war were high given the relatively localized nature of the conflict. The Indian Army and Air Force suffered 474 killed and 1,109 wounded.[38] Pakistani casualties are difficult to determine since the army has officially denied any involvement. India took great pains to stay on its own side of the LoC, despite the fact that it would mean higher casualties and an uninterrupted supply line for Pakistani troops on the heights. This limited war had an ominous nuclear dimension.

---

[31] Hagerty, *The Consequences of Nuclear Proliferation*, 152–6; *Chengapa, Weapons of Peace*, 358–9.

[32] Ambassador Robert Oakley and Col. Don Jones cited in Michael Krepon and Mishi Faruqee, eds., *Conflict Prevention and Confidence-Building Measures in South Asia: The 1990 Crisis*, Occasional Paper No. 17 (Washington, DC: The Henry L. Stimson Center 1994), 2, 4, 8, 39.

[33] *Perkovich, India's Nuclear Bomb*, 293; Chengapa, *Weapons of Peace*, 358–9; Hagerty, *The Consequences of Nuclear Proliferation*, 152– 6.

[34] Chengapa, *Weapons of Peace*, 358–9.

[35] Pran Chopra, "A Disappointing Debate (Nuclear Tests)," *The Hindu*, 24 June 1998.

[36] Jaswant Singh, "Against Nuclear Apartheid," *Foreign Affairs* Vol. 77, no. 5 (September/October 1998): 41–52; K. Subrahmanyam, "Past Imperfect: Time for New Nuclearspeak," *Times of India*, 3 August 1998; "A Call for Joint Nuclear Front of India and Pakistan," *The Daily News* (Colombo), 9 July 1998.

[37] Sumit Ganguly "Indo–Pakistani Nuclear Issues and the Stability/Instability Paradox," *Studies in Conflict and Terrorism* Vol 18 (1995), 325–34; Jasjit Singh, "Press for Total Disarmament," *Indian Express*, 4 June 1998.

[38] *Kargil Review Committee Report*, 15 December 1999, Executive Summary.

Many in Washington worried that the fighting around Kargil might lead to a much larger conventional conflict. As with the 1990 crisis, they feared that India might be provoked into striking Pakistan across the LoC or even the international border. If such a scenario escalated, Pakistan might at some point feel threatened enough by India's conventional superiority to brandish the nuclear option. Army Chief of Staff General Sundarajan Padmanabhan claims that Pakistan had "activated" one of its nuclear missile bases. While General Padmanabhan is not certain as to whether the Pakistani activity at this site was done in preparation for war or was "a routine activation of the range,"[39] Pakistani officials again resorted to nuclear threats in a crisis.[40] At least one report asserts that India was prepared for a nuclear retaliation and "secretly kept its weapons in an advanced state of readiness."[41]

Some argue that the 1983–84 crisis was overblown and even "made in Washington" because it was exacerbated by an intelligence leak and a subsequent media report.[42] Nevertheless, the crisis took on a dynamic that generated security concerns. According to one report, India was not worried about a nuclear threat from Pakistan during the 1990 crisis. In this instance, American intelligence did not divulge information regarding Pakistan's nuclear-related activity and Dr. A.Q. Khan's provocative interview did not see print until the crisis was over.[43] Though the likelihood of a nuclear war in 1990 might not have been great, the possibility was real and the damage would have been horrific. As George Perkovich states, "the combination of Indian and Pakistani willingness to talk to each other even in a crisis atmosphere, and the diplomatic intervention of Moscow, Beijing, and the Gates mission, enabled the crisis to be dissipated."[44] Likewise, India's willingness to restrict its military action to Kargil in 1999 and Nawaz Sharif's willingness to call on Washington for help prevented the conflict from spilling over the LoC and possibly provoking a nuclear response from Pakistan.

Opposing nuclear programs in South Asia seem to have reduced the chance of full-scale war while making small, but provocative, crises more common. The fact that none of these crises have led to a deliberate or accidental nuclear exchange does not mean that the potential for escalation or accidents should be dismissed. Indian and Pakistani complacency regarding nuclear risk reduction in spite of their many crises is cause for concern. Kargil might have been the most recent and most intense of these crises, but it will not be the last. Though Kargil ended in a tactical defeat for the Pakistani Army, there

---

[39] Raj Chengapa, Interview with General Sundarajan Padmanabhan, *The News Today*, 12 January 2000.

[40] "Any Weapon Will Be Used, Threatens Pak.," *The Hindu*, 1 June 1999.

[41] Chengapa, *Weapons of Peace*, 9.

[42] Sidhu, "India's Security," 39.

[43] Perkovich, *India's Nuclear Bomb*, 310.

[44] Ibid.

are influential voices in Pakistan who argue that Nawaz Sharif should have resisted international pressure and allowed the offensive to continue. As long as Pakistani decision makers believe that military pressure can force a solution on Kashmir, more crises will occur. Kargil and earlier incidents have proven that the stability–instability paradox is applicable to South Asia. Each country will continue to test the other's resolve and crises will result. How frequent these crises are and how much they will be allowed to escalate will depend on how serious India and Pakistan are about taking steps to reduce nuclear dangers.

RHETORICAL RISK REDUCTION

India and Pakistan have poor records on confidence-building and no current dialogue on nuclear risk reduction. While India overtly demonstrated its nuclear technology in 1974, both the Indian and Pakistani nuclear programs evolved quietly to avoid outside pressures. In tandem with its own nuclear program, and perhaps as a cover for it, Pakistan began promoting bilateral and multilateral initiatives purportedly to slow-down or reverse the nuclearization of the region. In 1991, India began to show at least some interest in allaying the fears of Pakistan and the international community when it formally agreed to three bilateral confidence-building measures, including an agreement not to attack nuclear facilities.[45] However, implementation of these measures was circumspect and the issue of reducing nuclear dangers did not resurface until the nuclear tests in 1998.

Pakistan, understandably concerned by India's first nuclear test in 1974, submitted its original proposal for a South Asian Nuclear Weapons-Free Zone to the UN General Assembly in November 1974. In July 1981, Pakistan's Foreign Minister Agha Shahi met with Indian Foreign Minister Narasimha Rao in New Delhi. Shahi formally proposed that the two countries engage in bilateral talks to reach agreement on a mutually acceptable ratio of conventional armed forces and armaments, a condition that Pakistan has consistently linked with both conventional and nuclear stability. His proposal marked the beginning of what Shahi has called Pakistan's "peace offensive," a lengthy string of proposals made to India over the next several years for agreement on bilateral and multilateral arms-control measures regarding both conventional and nuclear weapons. By the end of the Zia era, these proposals included the following: renunciation of the acquisition or manufacture of nuclear weapons by both India and Pakistan (1978); comprehensive mutual inspection of each other's nuclear facilities (1979); simultaneous mutual acceptance of International Atomic Energy Agency "full-scope safeguards" (1979); simultaneous accession to the Non-Proliferation Treaty (1979); a bilateral South Asian Comprehensive Test-Ban Treaty (1987); and a mutual conference under UN auspices on nuclear non-proliferation in South Asia (1987). None of these measures were accepted by India. If they had been, Pakistan, as the weaker power, might have found them difficult to adhere to.

[45] Agreement between India and Pakistan on Prohibition to Attack Against Nuclear Installations and Facilities, 31 December 1988, Internet: http://www.indianembassy.org/South_Asia/Pakistan/Prohibition_Attack_Nuclear_Dec_31_1988.html.

For over fifteen years, Indian and Pakistani nuclear programs were pursued without any agreements to reduce the risk of accidents, primarily because their programs were secret. Finally, in 1991, a series of agreements prompted by the 1990 crisis attempted to rectify the situation in very limited, yet significant, ways. An Agreement on the Prior Notification of Military Exercises and another on the Prevention of Airspace Violations attempted to prevent miscalculation that might lead to an unintended conflict—conventional or otherwise. The 1991 Agreement on the Non-Attack of Nuclear Facilities was aimed at reducing nuclear risks between India and Pakistan through preventing dangerous conventional attacks on nuclear installations. Under this agreement, both sides are obliged to voluntarily provide a list of coordinates of their various nuclear facilities each year. Though the impetus for the agreement was media coverage surrounding India's plan to launch an air strike on the Pakistani enrichment facility in Kahuta in 1984, the agreement was not signed until four years later and laid dormant for another three years before ratification.

The nuclear tests by India and Pakistan in May of 1998 dramatically changed the nuclear landscape of South Asia. Although both countries possessed clandestine nuclear capabilities for nearly a decade, the difficult task of reducing nuclear dangers had been episodic and poorly implemented. With the Bomb clearly out of the basement, domestic constituencies and the glare of the international community generated pressure on both sides of the LoC to demonstrate responsibility. Subsequently, India and Pakistan have both proposed several nuclear risk-reduction measures, however, no formal agreements have been reached. Progress has not yet moved beyond the realm of statements and memoranda. As long as there are no talks about NRRMs, it will be difficult for Indian and Pakistani leaders to demonstrate responsible stewardship of nuclear weapons.

SEEKING COMMON GROUND

Nuclear risk reduction received a hopeful push a year prior to the 1998 tests. Prime Ministers I.K. Gujral and Nawaz Sharif authorized their Foreign Secretaries to agree on an eight-point agenda for talks in June 1997. The Foreign Secretaries enumerated a comprehensive list of issues to be addressed by official teams from each country. The categories included: peace and security; Jammu and Kashmir; Siachen; Wullar Barrage/Tulbul Navigation Project; Sir Creek; terrorism and drug trafficking; economic and commercial cooperation; and the promotion of friendly exchanges in various fields.[46] The agenda for a comprehensive dialogue, including discussions on how to reduce the risk of nuclear conflict, followed pledges from both Prime Ministers to reinstate the oft-ignored Prime Ministerial hotline that had originally been established by Benazir Bhutto and Rajiv Gandhi in 1989. Gujral and Sharif made use of this hotline in October of 1997 when tensions on the LoC were particularly high.

[46] Amit Baruah, "India, Pak. Reach Accord on Joint Working Groups," *The Hindu*, 24 June 1997; Raja Asghar, "Pakistan PM calls talks with India breakthrough," *Reuters*, 23 June 1997.

In spite of, or perhaps because of the nuclear tests, Prime Ministers A.B. Vajpayee and Nawaz Sharif agreed to follow through with the 1997 agenda for talks in September 1998. Foreign Secretaries Shamshad Ahmed and K. Raghunath met in October to discuss formally the first two outstanding issues: peace, security, and confidence-building measures and Jammu and Kashmir. Despite the continued impasse over Kashmir, each side came to the table with a list of proposals for avoiding dangerous conflicts.

The Indian proposals included:[47]

- Agree to a No-First-Use pact. India had made this offer repeatedly since July 1998. New Delhi reiterated its unilateral commitment to no-first-use in a proposal entitled "Preventing Use of Nuclear Weapons," which asserted that nuclear weapons should never be used. It proposed that both India and Pakistan develop an agreement on preventing nuclear war due to the accidental or unauthorized use of nuclear weapons.
- Formalize an agreement on advanced notification of ballistic missile flight tests. India also suggested that any such tests should not be conducted in the direction of the other party. The proposal suggested that notification of ballistic missile tests above a certain threshold would lead to greater transparency and predictability.
- Extend Agreement on Prohibition of Attack against Nuclear Installations and Facilities to include a promise not to target population and economic centers with nuclear weapons.
- Verify and exchange seismic data. Such an exchange would assuage fears that either country was secretly conducting further tests. The exchange of information would be conducted with a view to enhancing cooperation and transparency and would also help scientists develop a better understanding of regional seismic characteristics.
- Cooperate in multilateral forums toward complete nuclear disarmament.
- Improve confidence-building measures that have been agreed to but not satisfactorily implemented. Specifically, India asserted that improved communications between India and Pakistan are an important component of confidence-building. In light of this, India proposed that the hotline between Directors General of Military Operations (DGMOs) be made fail-safe and secure with voice, fax, and computer communication. India proposed similar communication links for the Foreign Secretaries, Chiefs of Naval Staff (Operations), Chiefs of Air Staff (Operations), and Division Commanders.
- Enhance the Agreement on Advance Notice on Military Exercises, Manouvres and Troop Movements and the Agreement on Prevention of Air Space Violations and for Permitting Over Flights and Landings by Military Aircraft. India acknowledged that both agreements provide for

[47] The texts of the non-papers exchanged by the Foreign Secretaries of India and Pakistan in October 1998 have not been made public. Information paraphrased in this section is based on author interviews with anonymous officials.

information exchange and lead to greater transparency and predictability. Arguing that the effectiveness of the agreements needs to be enhanced, India suggested that the two countries establish a consultative working mechanism to periodically review the implementation of the agreements and explore refinements, particularly along the Line of Control.

- Participate in high-level defense officer exchanges.
- Implement a ceasefire along the Line of Control.
- Cease hostile propaganda.

At the October 1998 meeting, Pakistan presented a broad outline of proposals under the heading of Peace and Security on which they elaborated:[48]

- Abide by the non-use of force and the peaceful settlement of disputes. This proposal included the identification of issues of peace and security between India and Pakistan, mechanisms for the peaceful settlement of disputes, and a non-aggression pact.
- Implement a strategic restraint regime in South Asia including both nuclear and conventional measures. Proposals for nuclear restraint and stabilization included the prevention of a nuclear and ballistic missile race, risk reduction mechanisms, the avoidance of nuclear conflict, a formalized moratorium on nuclear testing, the non-induction of Anti-Ballistic Missile and Submarine-Launched Ballistic Missile systems, and a nuclear doctrine of minimum deterrence. As a measure for conventional restraint and stabilization, Pakistan proposed a mutual and balanced reduction of forces and armament.
- Implement confidence-building measures. Among these measures was a proposal to review existing CBMs including measures to prevent the violation of airspace and territorial waters, and the prior notification of military exercises. Pakistan also proposed to enhance and upgrade existing hotlines between DGMOs and sector commanders as well as the hotline between the Prime Ministers. Other measures included a revival of pre-Simla ground border rules and restraint on hostile propaganda.

After talks had concluded in November, Pakistan proposed a Non-Deployment Agreement, though details were not provided.

In October 1998, the differences between India and Pakistan in the area of CBMs and NRRMs were clear on a few key points. Pakistan's call for a mutual and balanced reduction of forces and armament was not new and was clearly aimed at limiting India's growing conventional advantage. Similarly, Pakistan's proposal for an agreement on the non-use of force was also aimed at neutralizing

[48] Ibid.

India's conventional superiority while not expressly forbidding Pakistan's assistance to militancy in Kashmir.

India's proposal to extend the Agreement on Prohibition of Attack against Nuclear Installations and Facilities was not on Pakistan's agenda—perhaps because Pakistan, as the weaker power, views a counter-value strategy as the most feasible mode of deterrence. India has never been clear about what would constitute a minimum credible deterrent, and its proposal to spare counter-value targets seems to suggest a more ambitious counter-force strategy that would put Pakistan at a disadvantage. India's proposal for a ceasefire on the LoC was also unacceptable to Pakistan at the time. Keeping the LoC "hot" is a strategy that both helps the infiltration into Indian Kashmir and draws international attention to the Kashmir dispute.

While India and Pakistan had expressed differences on how to reduce the risk of conflict, they also found significant common ground. Obviously, both sides expressed an interest in avoiding a nuclear conflict. Both countries clearly agreed on the basic need to improve the lines of communication between high-level political and military officials, though neither stated openly the reasons for the failure of these measures in the past. India and Pakistan also acknowledged a need to revisit some of their earlier agreements, specifically the Agreement on Advance Notice on Military Exercises, Manouvres and Troop Movements. Again, both sides recognized poor implementation, but neither presented a list of reasons for the problem. Restraint on hostile propaganda was another area of broad agreement, though details as to how this vague proposal would be implemented were not discussed.

On 21 February 1999, the comprehensive dialogue was followed by the Lahore summit. Lahore had three products, a Joint Statement by the Prime Ministers, a Memorandum of Understanding (MoU) by the Foreign Secretaries, and the Lahore Declaration itself, again made by the Prime Ministers.

The Lahore Declaration made several references to the nuclear issue. The Prime Ministers recognized that "the nuclear dimension of the security environment of the two countries adds to their responsibility for avoidance of conflict between the two countries," and asserted that they were "committed to the objective of universal nuclear disarmament and non-proliferation." They also noted that they were "convinced of the importance of mutually agreed confidence-building measures for improving the security environment." Nawaz Sharif and A.B. Vajpayee agreed to seven points in the declaration. Among these was an agreement to "take immediate steps for reducing the risk of accidental or unauthorized use of nuclear weapons and discuss concepts and doctrines with a view to elaborating measures for confidence-building in the nuclear and conventional fields, aimed at prevention of conflict."[49]

[49] Text of the Lahore Declaration, 21 February 1999, Internet: http://www.indianembassy.org/South_Asia/Pakistan/lahoredeclaration.html.

The MoU was signed by Indian Foreign Secretary K. Raghunath and Pakistani Foreign Secretary Shamshad Ahmad. It acknowledged "the directive given by their respective Prime Ministers in Lahore, to adopt measures for promoting a stable environment of peace and security between the two countries." Seven of the eight points the Foreign Secretaries listed in the MoU directly addressed nuclear risk reduction for the first time. An item referring to the prevention of incidents at sea has at least some significance to the nuclear issue given that India has announced its intention to nuclearize its navy in the future and Pakistan has suggested that it might follow suit:[50]

1. The two sides shall engage in bilateral consultations on security concepts, and nuclear doctrines, with a view to developing measures for confidence-building in the nuclear and conventional fields aimed at avoidance of conflict.
2. The two sides undertake to provide each other with advance notification in respect of ballistic missile flight tests, and shall conclude a bilateral agreement in this regard.
3. The two sides are fully committed to undertaking national measures to reducing the risks of accidental or unauthorized use of nuclear weapons under their respective control. The two sides further undertake to notify each other immediately in the event of any accidental, unauthorized or unexplained incident that could create the risk of a fallout with adverse consequences for both sides, or an outbreak of a nuclear war between the two countries, as well as to adopt measures aimed at diminishing the possibility of such actions, or such incidents being misinterpreted by the other. The two sides shall identify/establish the appropriate communication mechanism for this purpose.
4. The two sides shall continue to abide by their respective unilateral moratorium on conducting further nuclear test explosions unless either side, in exercise of its national sovereignty, decides that extraordinary events have jeopardized its supreme interests.
5. The two sides shall conclude an agreement on prevention of incidents at sea in order to ensure safety of navigation by naval vessels, and aircraft belonging to the two sides.
6. The two sides shall periodically review the implementation of existing [CBMs] and where necessary, set up appropriate consultative mechanisms to monitor and ensure effective implementation of these CBMs.
7. The two sides shall undertake a review of the existing communication links (e.g. between the respective [DGMOs] with a view to upgrading and improving these links, and to provide for fail-safe and secure communications.)
8. The two sides shall engage in bilateral consultations on security, disarmament and non-proliferation issues within the context of negotiations on these issues in multilateral fora.[51]

---

[50] *Draft Report of National Security Advisory Board on Indian Nuclear Doctrine*, 17 August 1999, Internet: http://www.indianembassy.org/policy/CTBT/nuclear_doctrine_aug_17_1999.html; Habib Khan Ghori, "Nuclear missiles for subs under study: Pakistan Navy," *Dawn*, 22 Feb 2001; "Pakistan Nuclearising its Navy," *The Times of India Online*, 10 Jan 2001.

[51] List of points as they appear in Memorandum of Understanding, 21 February 1999, Internet: http://www.indianembassy.org/South_Asia/Pakistan/mou(lahore01211999).html.

The MoU concluded that "where required, the technical details of the above measures will be worked out by experts of the two sides in meetings to be held on mutually agreed dates, before mid 1999, with a view to reaching bilateral agreements."

The Joint Statement by Sharif and Vajpayee was issued at the end of Vajpayee's visit to Lahore. It asserted, among other things, that "the two Foreign Ministers will meet periodically to discuss all issues of mutual concern, including nuclear related issues." The Statement also made reference to the MoU "aimed at promoting an environment of peace and security between their countries" and noted that "the two Prime Ministers signed the Lahore Declaration embodying their shared vision of peace and stability between their countries…."[52]

The text of the MoU is clearly the most significant of the three Lahore documents in terms of nuclear risk reduction. Virtually all of the points in the Memorandum were items raised either by India, Pakistan, or both, during the Foreign Secretaries' meeting in October. The first and third points in the MoU express a commitment to avoid nuclear conflict and reduce the risk of accidental use of nuclear weapons—items that were on the agenda of both countries in October. The sixth and seventh points—pledging to review and implement existing CBMs and hotlines—were also items of mutual concern at the earlier meeting. Two items that India specifically brought to the table in October found their way into the Memorandum as well: the advanced notification of ballistic missile flight tests and cooperation on nuclear issues in multilateral forums were not items that appeared on Pakistan's outline for discussion, but were welcomed nonetheless at Lahore. Finally, Pakistan's proposal to formalize the moratorium on nuclear testing was accommodated in the MoU via a pledge by both sides to continue their unilateral moratorium with a clause permitting them to test in the case of extraordinary events.

While the details of the negotiations in October 1998 and February 1999 regarding nuclear risk-reduction and confidence-building are not known, the proposals and the MoU that followed suggest that India and Pakistan found at least some common ground on the issue. The combination of items in the MoU indicates that in some areas where their priorities might have differed, both sides were willing to compromise.

India and Pakistan have yet to agree on the technical details of any of the measures listed in the MoU. Technical level talks were agreed to in principle at Lahore, but they have been held hostage to the political tension left over from Kargil. Until the details are finalized and the pledges made at Lahore are implemented, nuclear risk reduction in South Asia will remain rhetorical, just as proposals for avoiding conflicts have for decades. If the history of India–Pakistan relations is any indication, more crises will follow and the credibility of their rhetoric will continue to suffer.

---

[52] Text of the Joint Statement issued at the end of the Prime Minister Atal Bihari Vajpayee's visit to Lahore, 21 February 1999, Internet: http://www.indianembassy.org/pic/PR_1999/February99/prfeb2199.html.

STICKING POINTS

Nuclear risk reduction will never be realized if India and Pakistan do not have a sustained, serious, and purposeful dialogue. While Islamabad has repeated its offer to engage in a dialogue "anywhere and anytime," New Delhi continues to dwell on Pakistan's support for the militancy in Kashmir. Even if India were to restart a dialogue, Pakistan might be tempted to hold NRRMs hostage to the Kashmir issue.

Nuclear risk reduction is desirable on its own terms as a means of safeguarding the lives of hundreds of millions of innocent people on the subcontinent, including Kashmiris. An agreement not to change the *status quo* by force in Eastern Europe, where Soviet troops and North Atlantic Treaty Organization troops were eye-to-eye, contributed to stable nuclear deterrence during the Cold War. Pakistan's Kashmir policy seeks to change the *status quo* in Kashmir by supporting insurgency in the Valley and engaging in skirmishes along the LoC. Unless Pakistan changes its Kashmir policy, stable deterrence might not be possible in South Asia. Opposing nuclear weapons programs in South Asia have made the region crisis prone because it is now harder for India to deter low levels of violence without raising fears of a nuclear conflict. Attempts to change the *status quo* will lead to more crises like Kargil, which could escalate and become difficult to control. Under duress, accidents and miscalculations are likely to occur and could conceivably lead to a nuclear war. Pakistan and India have signed several confidence-building measures but never publicized them because of the Kashmir dispute. Unless both countries are able to soften their positions on Kashmir, new attempts at nuclear risk reduction will be as unsuccessful as previous confidence-building measures have been.

Political one-upsmanship provides another challenge to nuclear risk reduction. There is a tendency on both sides to make "friendly" overtures that are knowingly untenable to the other in an attempt to look good to the international community and to domestic constituencies. A no-first-use pact will not be acceptable to Pakistan because of India's conventional superiority. Likewise, a no-war pact will not be acceptable to India as long as Pakistan challenges the *status quo* in Kashmir by supporting militancy. Focusing on these proposals is not only unhelpful, it retards progress by making differences in the area of nuclear risk reduction appear greater than they really are.

The prior emphasis by Indian and Pakistani leaders on declaratory measures is not helpful in an atmosphere devoid of trust. A no-first-use policy is low on substance and difficult to verify without intrusive measures to demonstrate a reduced state of readiness, including keeping warheads separate from delivery vehicles and other indications of recessed deterrence. Furthermore, such a policy would undermine Pakistan's option to use nuclear weapons to deter a massive conventional attack. What are needed are nuclear risk-reduction measures that are specific, substantive, and verifiable.

THE WAY AHEAD

When India and Pakistan resume official contact, talks on NRRMs should focus on the common ground that India and Pakistan have established through past proposals and the Lahore MoU. Because there are many obstacles in the way of nuclear risk reduction, both countries might first build momentum with small initiatives that are relatively easy to implement. India and Pakistan have started the process by agreeing to broad concepts of nuclear risk reduction and confidence-building in principle. Both countries could proceed by narrowly focusing on common ground. Subsequent discussions could translate common ground into detailed nuclear risk-reduction and confidence-building measures and strategies for their implementation. If agreed measures have not been properly implemented in the past, the reasons for their failure or neglect must be carefully considered and frankly discussed. New standards of implementation are essential. If India and Pakistan are able to successfully implement a few simple NRRMs, bolder more comprehensive steps could eventually follow.

Both sides agree that improved communications are essential. The form of communication proposed most often has been a hotline between Prime Ministers and DGMOs. Such measures have been used only sporadically in the past, despite several pledges at the highest level. Communication was infrequent and unreliable even when relations were not as strained as they have been since Kargil and the subsequent military takeover in Pakistan. In recent years, the hotlines have seen some use. Gujral and Sharif used the Prime Ministerial hotline in August of 1997, and the DGMO hotline was supposedly used in August of 1998. Some communication took place during the Kargil war, but the effect was probably limited by the fact that Pakistan officially denied any involvement. It is possible that India and Pakistan may have discussed the movement of Indian missiles during the conflict, but details have not been made public. Indian proposals to maintain hotlines for Division Commanders in areas along the border and the LoC should be implemented, along with measures to make all hotlines secure and redundant with phone, fax, and electronic links. In a climate of nuclearized animosity, hotlines and other means of official communication must not be held hostage to foolish pride. Both countries could easily make good on this very simple measure, provided India and Pakistan make efforts to convince their constituencies that risk reduction is necessary and not a sign of weakness.

India and Pakistan agreed at Lahore that advanced notification of ballistic missile tests is desirable. But even with no formal agreement, the Government of India reportedly notified Pakistan, China, and others of its test of the Agni II on 17 January 2001. Similarly, Pakistan has also notified India and others about some of its ballistic missile tests since the Lahore Summit.[53] The fact that both countries have prenotified ballistic missile flight tests after the Kargil war, even in the absence of an agreement, is evidence that India and Pakistan perceive a need for such a measure. A formal agreement in this area

[53] "Pakistan informs India about missile test," *The Nation*, 14 April 1999.

would be straightforward and easy to verify because missile test flights are not difficult to detect and many countries outside the region are watching closely for such developments. Such an agreement might not produce any significant change in the policies of India or Pakistan regarding notification, but it would help to demonstrate that both sides recognize the importance of formal cooperation in nuclear risk reduction. An agreement on the notification of ballistic missile flight tests would help to generate goodwill and build momentum toward more difficult measures in the future.

In the MoU, India and Pakistan acknowledged the need to share pertinent information in order to help prevent catastrophic miscalculation. The exchange of nuclear information between the two countries to help prevent miscalculation has at least some precedent in the agreement to annually exchange information on the location of nuclear installations as per the 1991 Agreement on the Non-attack of Nuclear Facilities. Under this agreement, India and Pakistan are obliged to exchange lists of nuclear facilities on the first business day of each year. Thus far, lists have been exchanged each year, but the completeness of these lists is questionable. It might be beneficial to both sides to expand this established channel so as to include the exchange of other data that would help reduce mutual suspicions. Such data could include the locations and activities of major industrial plants or facilities that produce or store hazardous chemicals or wastes. Official channels for communication at lower bureaucratic levels would subsequently cut down on distracting media attention by making such exchanges routine and less sensational.

Admittedly, it will be difficult for India and Pakistan to reach new agreements for exchanging sensitive information about their nuclear weapons programs. The exchange of some information might actually be destabilizing. Revealing potential targets is feasible, but in this early stage of weaponization, neither country is confident enough to reveal much about their nuclear capabilities. This reluctance is understandable given that Pakistan, in particular, may not feel it has a sufficient second strike capability to deter a preemptive attack. While India and Pakistan may not be ready to show much transparency in terms of capability, they could still benefit from making their nuclear intentions more transparent. Neither side has been open about its nuclear doctrine. Some clear discussion in this area should be possible without divulging sensitive information about current capabilities. India and Pakistan might also formally agree to notify one another of their respective missile alert status during times of crisis. At the very least, there could be some official discussion about what kinds of nuclear, missile, or military activities would be considered threatening to the other side, along with steps taken to prevent these activities from occurring. Doing so will help to prevent unintentional crises that could lead to nuclear war.

Both sides claim to be committed to unilateral moratoriums on nuclear tests even though neither has signed the Comprehensive Test Ban Treaty (CTBT). Signing the CTBT would be a bold indication that India and Pakistan are willing to take steps to avoid a dangerous arms race in the region. Officials in both countries claim to be confident in their deterrent capacity. A bilateral test ban treaty, or a bilateral

pledge to refrain from further tests, might be a step in the right direction. Such a treaty or pledge would be reasonably verifiable given the limited test sites in both countries and the international scrutiny on both of their programs.

There are other possible risk-reduction measures, aside from those that India and Pakistan have discussed in principle, that might be useful and acceptable to both countries in the near-term. One such measure might be for India to share some of its high-resolution satellite pictures with Pakistan. India has reconnaissance satellites that are capable of producing detailed images of Indian and Pakistani military movements and missile-related activities. If India were to share images of its own territory with Pakistan, this might help to reduce confusion and the potential for miscalculation in Islamabad. India would have little to lose since such images are available through commercial channels anyway. An agreement to share satellite images would be another gesture that might do little on its own, but would help give thrust to a more substantial process of nuclear risk reduction.

Measures such as non-deployment, or de-coupling warheads from delivery systems might be the most effective NRRMs, but they are also the most complicated and the hardest to negotiate, particularly given the present level of mistrust and confusion regarding nuclear doctrines and capabilities. Talking about such long-term strategies is important, but realizing them will be an incremental process built upon more expedient steps.

CONCLUSION

Even deterrence optimists argue that stability cannot exist in a vacuum devoid of cooperation or communication. Stable nuclear deterrence, though extraordinarily difficult, might be possible in South Asia, but only with luck and great political effort by India and Pakistan. The nuclear deterrent does not discourage all military adventures. In South Asia, offsetting nuclear capabilities have been accompanied by military and nuclear crises, culminating in a limited war in 1999 during which the president of the United States was called upon to prevent further escalation. Contrary to what India hoped, bringing the Bomb out of the basement has not encouraged prudent behavior by Pakistan. Islamabad appears confident that its nuclear capabilities will both deter India from invading and keep Kashmir in the news. Pakistan's Kashmir policy, combined with India's refusal to talk to Pakistan about their most pressing bilateral issues, including nuclear risk reduction, will ensure continued nuclear dangers. Even if cool heads prevail in future crises, as they have in the past, the institutions that support Indian and Pakistani nuclear deterrents would be pushed to the limits of safety. Without mechanisms to avoid unintended conflicts and reduce tension in times of crises, deterrence in South Asia is far from guaranteed.

India and Pakistan have already started to clear a path toward nuclear risk reduction. They have identified areas of common interest through proposals in 1998 and at the Lahore summit in 1999. Swift

progress on many of these proposals will be possible if India and Pakistan are willing to move forward. By making progress on the simplest and least contentious proposals agreed to in Lahore, India and Pakistan could reduce some of the risks of nuclear conflict while building confidence that might make more comprehensive nuclear risk-reduction measures possible in the future. The prospects for stable nuclear deterrence in South Asia are not bright. India and Pakistan need a sustained process of nuclear risk reduction.