South Asia

Danger Ahead?

Charles E. Costanzo

Since their creation in 1947 following the end of British rule in South Asia, India and Pakistan have fought three major wars and spent 64 years in nearly constant conflict, primarily over the future of Kashmir, itself divided between a Pakistan-controlled area in the northwest known as Azad Kashmir and an India-controlled area known as the State of Jammu and Kashmir in the central and southeastern part of the region. Over the years, numerous border crises have occurred that could have erupted into major wars, but despite deep distrust and military buildups in both countries, direct large-scale warfare has been averted. However, the potential for a future crisis to lead to another all-out war, possibly with nuclear weapons, cannot be dismissed on the basis of the current Indo-Pakistani standoff.

In the years after India and Pakistan conducted nuclear weapon tests in 1998, a debate ensued about whether these devices stabilize or destabilize the political-military situation on the subcontinent.[1] Although both sides in this debate offer compelling arguments, no consensus has emerged. Two new developments—one doctrinal, the other technological—could increase the possibility of nuclear exchanges in a future crisis between India and Pakistan. Much about what we "know" about state behavior during militarized disputes, particularly involving nuclear weapons, is grounded in rational choice theory and derived in large part from the US-Soviet experience during the Cold War. During that period, analysts and decision makers believed that both sides exhibited restraint during crises because they recognized the potentially severe costs of military action. Some believe that, like the United States and Soviet Union, other nuclear-armed countries will also exhibit restraint during militarized crises.

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However, rational choice may not provide a complete picture of state behavior in cases of militarized disputes. Following a discussion of events and developments leading to the current Indo-Pakistani military balance, I apply prospect theory as an alternative to rational choice to argue that India's new Cold Start military doctrine and Pakistan's new nuclear-capable short-range ballistic missile (SRBM), the Hatf-9, could tip the danger of nuclear war toward the pessimistic view of nuclear weapons in South Asia.[2]

Nuclear Tests and the Post-Test Balance

On 11 May 1998, India conducted three underground nuclear explosions: a sub-kiloton (KT) fission device, a fission device with a reported yield of about 12 KT, and a thermonuclear device with a yield of about 43 KT. Two days later, it conducted two more tests, both in the sub-KT range. Operation Shakti was only the second time since the 1974 "peaceful nuclear explosion" that India explosively tested its nuclear-weapon capability. Despite international pressure, Pakistan responded by conducting its own nuclear tests on 28 and 30 May. Five devices were exploded on 28 May: four in the sub-kiloton range and a "big bomb" with a yield between 30 and 35 KT. A sixth test on 30 May was a fission device with a yield of about 12 KT. Pakistan's tests were also underground detonations at the Chagai Hills test facility.[3]

Since 1998, the possession of nuclear weapons and nuclear-capable delivery systems by India and Pakistan has created a condition of mutual deterrence at the level of general war on the subcontinent. Counterforce strikes by either side are out of the question since neither country possesses high confidence that such attacks would be effective enough to disarm its opponent and preclude a devastating retaliatory response.[4] Fundamentally, both countries are restricted to use their nuclear forces to threaten countervalue targets such as cities and other nonmilitary assets; thus, neither side has risked escalation during a militarized crisis due to the potential for catastrophic civilian casualties and massive infrastructure losses.

In the years leading to the nuclear tests, Pakistan limited its involvement in the Kashmir dispute to supporting armed militants opposing Indian rule in the region.[5] However, after the 1998 nuclear tests and the acquisition of an overt nuclear capability, Pakistan took more aggressive, albeit indirect, actions against India. Both the Pakistani incursion at Kargil on the Indian side of the Line of Control (LOC) in 1999 and Islamabad's

complicity in the 2001–02 terrorist attacks against India signaled a newfound boldness to pursue its political-military objectives without provoking a large-scale Indian conventional response. Paul Kapur notes that the "Pakistanis believed that their new, overt nuclear status would enable them to deter the Indians even more effectively than their de facto nuclear capability had previously done."[6]

Stability-Instability Paradox and Two Subcontinent Crises

Robert Jervis observed presciently over a decade before India's and Pakistan's nuclear tests 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] This view of the stability-instability paradox ostensibly played out during the Kargil crisis and the crises precipitated by Pakistan-backed terrorist attacks against India in 2001 and 2002.[8] In each case, India demonstrated remarkable restraint. While India's army deployment pattern constrained its reactions to some extent, its leaders were nonetheless hesitant to initiate moves that could result in escalation.[9] Although world opinion, a desire to be perceived as a responsible actor, or perhaps other reasons may account for Indian restraint, "if it were the case that a large-scale conventional conflict was very unlikely to escalate to the nuclear level, Indian leaders would be less likely to be deterred from launching a major conventional response to end Pakistani aggression,"[10] Kapur concludes. Yet in 1999 and again in 2001–02 India was indeed deterred from large-scale conventional reprisals against Pakistan, fearing nuclear escalation.

The Kargil crisis began in March 1999 when Pakistani forces infiltrated and occupied five sectors in the region previously vacated by Indian forces for the winter.[11] The Pakistanis used various ruses to attempt to convince the international community that the fighters were militants, not Pakistani military, but "an operation of this magnitude could only be planned at the highest level in Pakistan with complete approval of the government."[12] Initial operations by the Indian army to dislodge the intruders involved fighting under difficult high-altitude terrain and weather conditions, with India incurring significant casualties.[13] The Indian army and air force launched major offensive operations in late May, although the air force was ordered by India's civilian leaders not to cross the LOC.[14] Additionally, India mobilized its army in other parts of its territory, including

along the international border with Pakistan, and prepared its navy for offensive and blockading operations. A major breakthrough finally occurred in late June, and the Indian army began clearing Pakistani forces. Facing a declining military situation and pressure from the United States, Pakistan began withdrawing its forces in mid July. In late July, India announced that all intruders had vacated occupied territory and the crisis ended. Post-conflict evidence recovered by India revealed that Pakistani soldiers from the 2nd, 3rd, 4th, 5th, and 6th Battalions of the Northern Light Infantry, augmented by Afghan veterans and Islamic militants, had conducted the Kargil intrusion.[15]

The Kargil incursion marked a significant move; Pakistan had clearly decided to pursue more-ambitious plans in the Kashmir region. Had Pakistan retained control of Kargil, this position would have enabled it to interdict the Srinagar-Leh Road and interfere with India's movement of supplies along this route; to block the Zojila Pass and threaten India's hold in the Kashmir Valley; to control a part of the Himalayan Range to facilitate insurgent movement into the Kashmir Valley and the Doda District in the State of Jammu and Kashmir; and to "outflank the Indian army deployed on the LOC in northwestern Kashmir and the Siachen glacier through the Shyok valley."[16] In spite of the 1972 Simla Agreement, signed by India's then–prime minister Indira Gandhi and Pakistan's former president Zulfiqar Ali Bhutto, that the LOC "shall be respected by both sides" and that "both sides further undertake to refrain from the threat of the use of force in violation of this line," Pakistan took a highly provocative step by crossing the LOC and occupying Indian territory.[17]

Although the deployment pattern and configuration of the Indian army hindered its quick mobilization and movement to confront limited aggression, Pakistan's nuclear-weapon capability cannot be excluded from the decision calculus of Indian leaders.[18] Sumit Ganguly has argued that "the principal source of Indian restraint was Pakistan's overt possession of a nuclear arsenal. Indian policymakers, cognizant of this new reality, were compelled to exercise suitable restraint for fear of escalation to the nuclear level."[19] Thus, beyond constraints on Indian conventional forces, Pakistan's nuclear weapons undoubtedly induced caution in New Delhi and introduced a new variable into the Indo-Pakistani political-military relationship. As if to acknowledge the importance of this new variable, one consequence of the Kargil crisis was that both countries "ramped up their production of nuclear weapons and missile delivery systems."[20]

Indo-Pakistani tensions rose further on 1 October 2001 when insurgents killed 38 people in an attack on the Jammu and Kashmir State Assembly in Srinagar on the Indian side of the LOC.[21] Jaish-e-Mohammed, a Pakistan-backed group listed by the US State Department as a foreign terrorist organization (FTO), claimed responsibility for the attack.[22] India protested and demanded Islamabad ban the group. Then, on 13 December 2001, terrorists struck again, this time at the Indian parliament in New Delhi, killing several guards. Evidence gathered by India implicated Jaish-e-Mohammed and Lashkar-e-Toiba, also a Pakistan-backed militant group on the FTO list. India protested again, demanding Pakistan outlaw both groups, extradite 20 alleged terrorists, and halt all infiltration by militants into Indian territory.[23] Additionally, several days after the attack, India mobilized its military forces—Operation Parakram—moving three strike corps closer to Pakistan, activating air force units, and shifting its Eastern Fleet to join the Western Fleet to blockade Pakistan.[24] Pakistan replied by moving large military forces to both the LOC and the international border. President Musharraf defused the situation on 12 January when he stated publicly that "no organization will be allowed to indulge in terrorism in the name of Kashmir" and "anyone found [to be] involved in any terrorist act would be dealt with sternly."[25] Later in the speech he banned Jaish-e-Mohammed and Lashkar-e-Toiba. Despite popular anger over the attack and India's initial bravado, New Delhi trimmed its forces' operational tempo, and India once again refrained from attacking Pakistan.

Crisis erupted once more on 14 May 2002 when terrorists attacked the Indian army camp at Kaluchak and murdered family members of assigned military personnel.[26] In response, India planned to use its three strike corps to draw Pakistan's two strike corps into the Thar Desert and inflict heavy losses on them. However, before India could act, the United States intervened and persuaded President Musharraf to "permanently end infiltration across the Line of Control into the Indian State of Jammu and Kashmir," which Indian foreign minister Jaswant Singh called a "step in the right direction."[27] India began withdrawing its forces from the LOC and the international border several months later.

Were Pakistan's nuclear weapons the key reason why India hesitated to respond more forcefully against bold and repeated attacks? Ganguly contends that "Pakistan's acquisition of a nuclear weapons capability may well have emboldened its leadership, secure in the belief that India had no good options to respond."[28] He adds that India "has been grappling

with an effort to forge a new military doctrine and strategy to enable it to respond to Pakistani needling while containing the possibilities of conflict escalation, especially to the nuclear level."[29] The next section evaluates the proposition that India was constrained from a more forceful response to Pakistani provocations because its conventional forces were not configured for such a response and it feared triggering escalation to the strategic nuclear level. India's attempt to revise its military doctrine and to adopt a new conventional force configuration is an effort to change this situation to respond to Pakistani "needling" while precluding the risk of nuclear escalation.

The Sundarji Doctrine and Beyond

The eponymous Sundarji doctrine was developed during a period of military modernization in the mid 1980s under then–chief of army staff Gen Krishnaswamy Sundarji. It incorporated modern tanks, armored fighting vehicles, artillery, missile and air defense systems, and India's first attack helicopters.[30] The doctrine was organized around seven defensive holding corps deployed near the international border with Pakistan to check the advance of enemy forces.[31] If Pakistan attacked, three offensive strike corps deployed in central India well away from the border would counterattack once the holding corps stopped Pakistani forces; then the strike corps would penetrate deep into Pakistan to destroy its two strike corps.[32] Because it was designed to confront a full-scale Pakistani attack, the Sundarji doctrine was ill suited to confront limited, indirect threats.[33] The long mobilization time, 10–21 days, gave Pakistan enough time to prepare a military response and for American crisis intervention to preclude escalation.[34] In short, India's military doctrine proved "too crude and inflexible a tool to respond to terrorist attacks and other indirect challenges." Moreover, "mobilizing the entire military was not an appropriate policy to pursue limited aims. A new approach was needed."[35]

India announced in early 2004 that it was developing a new military doctrine that stressed "smaller, mobile and integrated units . . . moving forward quickly."[36] Under the new doctrine, known as Cold Start, India would use as many as eight integrated battle groups (IBG), consisting of armor, mechanized infantry, and artillery integrated with close air support that could be mobilized from a standing start in three to four days from positions near the border with Pakistan to drive only 20–80

kilometers into Pakistani territory.[37] The objectives of Cold Start are to attrite Pakistani forces, to use seized territory for postconflict bargaining, and to preclude nuclear escalation by limiting the depth of the Indian advance.[38] Although Indian military planners undoubtedly believe the limited objectives sought under Cold Start when it is fully implemented would confine the violence, the key—and potentially unknown—variable is Pakistan's reaction; that is, could India undertake conventional operations envisioned under Cold Start without provoking a nuclear response?[39]

Unlike India, which has promulgated, albeit unofficially, its nuclear doctrine, Pakistan has articulated no such doctrine.[40] In fact, "public discussion on nuclear strategy and, more generally, on all things nuclear is scarce."[41] What little is known about Pakistan's nuclear "redlines" was gleaned during an interview several years ago with Lt Gen Khalid Kidwai, director general of the Strategic Plans Division, the country's dedicated nuclear organization. During the interview, he articulated the circumstances of deterrence failure when Pakistan would use nuclear weapons: "India attacks Pakistan and conquers a large part of its territory (space threshold), India destroys a large part either of its land or air forces (military threshold), India proceeds to the economic strangling of Pakistan (economic strangling), [and/or] India pushes Pakistan into political destabilization or creates a large-scale internal subversion in Pakistan (domestic destabilization)."[42] When the interviewers observed that the conditions outlined by Kidwai were "too broad and too vaguely defined," he replied that the "possibility [of nuclear war] has been discarded on the basis of the fact that rational decision making will keep both countries away from the nuclear brink."[43] However, as Walter Ladwig has noted, "As India enhances its ability to achieve a quick military decision against its neighbor in a future conflict, Pakistan will come under increasing pressure to rely on its nuclear arsenal for self-defense."[44]

Pakistan acted recently to blunt the Cold Start doctrine in a way that suggests it may be prepared to use nuclear weapons early in a conflict with India.[45] On 19 April 2011, Pakistan conducted the first test of the newly developed mobile Hatf-9 SRBM capable of carrying a nuclear warhead and with a reported range of 60 kilometers.[46] Regarding this new capability, a Pakistani defense analyst stated that "India has always felt that Pakistan had a loophole in terms of lacking short-range battlefield nuclear weapons, which it could exploit on the assumption that it made little sense for Pakistan to respond to such conventional attacks with strategic nuclear

weapons. With [Hatf-9], Pakistan has plugged that loophole. Indian dreams of a limited war against Pakistan . . . have been laid to rest."[47] The Hatf-9 adds another component to an Indo-Pakistani political-military relationship increasingly characterized by a search for an escalation process that each side believes it can control.

A Dangerous New Era

Rational decision making occurs when a person evaluates the desirability of an outcome from a particular action against his or her current position and either takes action to change (i.e., improve) that position or desists from acting if the potential outcome is too costly. In deterrence relationships, at least as traditionally understood, actors have two choices, each with an outcome: mutual cooperation to sustain the status quo or military aggression to change the status quo to improve one's position. If an actor is deterred from aggressive behavior because it believes an opponent possesses both the capability to impose a heavy cost for aggression and the will to execute the threat, then deterrence is successful. The potential aggressor is said to have made a rational choice not to act because the perceived loss due to an action outweighs conceivable gain.

In their classic study on decision making, Daniel Kahneman and Amos Tversky demonstrated phenomena that deviate from rational choice, notably that people do not always act rationally.[48] One of Kahneman and Tversky's principal findings about decision making under an alternative construct they named "prospect theory" is that people are risk averse in the domain of gain and risk acceptant in the domain of loss; that is, people are more inclined to take risks to rectify losses than to make gains because "losses hurt more than a gain feels good."[49] This finding stands in stark contrast to rational decision making, which makes the opposite prediction. Accordingly, prospect theory more readily explains than rational choice why decision makers in a loss domain often accept risks that otherwise are unacceptable.[50] Jeffrey Berejikian adds,

> In nuclear deterrence, it may be that the potential costs of aggression are so large that they do in fact overwhelm the framing effect.[51] This raises an important distinction between total versus limited nuclear war as deterrents. The notion of a limited nuclear war suggests that the costs of conflict are not beyond consideration. Therefore, it may be that [prospect theory] is appropriate for analyzing limited war deterrents while rational choice is a better guide to understanding total war threats.[52]

On the basis of this argument, the Indo-Pakistani nuclear deterrence relationship since 1998 has been stable at the total-war level because both countries' decision makers recognize that the cost of large-scale aggression is so great that it outweighs any conceivable gain. As rational choice predicts, during the Kargil and 2001–02 crises, leaders on both sides ostensibly acknowledged the limits on using conventional force and stepped back from the brink before those limits were crossed. For its part, Pakistan's incursion at Kargil, while highly provocative, was confined to a single area, and the attacks against the Srinagar and New Delhi legislatures and the Kaluchak army camp, while egregious, were isolated events using proxy forces. India, on the other hand, responded to those provocations cautiously by taking steps to demonstrate its resolve but without taking actions that could escalate the violence. Undoubtedly the long shadow cast by the threat of nuclear war induced circumspection on both parties, while India's limited ability to calibrate responses for indirect threats tempered its reaction. However, the margin of safety against escalation may be shrinking for reasons best explained by prospect theory.

In a future military confrontation, Pakistan could decide that the smaller, more mobile units envisioned under Cold Start would be difficult to attack effectively with its available conventional munitions; thus, its leaders may perceive no alternative to nuclear strikes on the battlefield. In this scenario, Pakistan's decision to use nuclear weapons would depend on how it frames its territorial and military losses, as well as internal political and economic conditions, following an Indian attack. Since Islamabad has not provided insight into the specific meaning of the redlines outlined by General Kidwai, Pakistan could decide to use battlefield nuclear weapons to destroy India's IBGs to rectify a territorial loss, for example. Ominously, because Pakistan does not have a nuclear "no first use" policy, it is possible that it would use nuclear weapons early in a conflict. Although Indian losses would be confined to the battlefield, perhaps even on Pakistani territory, New Delhi could frame the loss of its conventional offensive punch in a way suggested by prospect theory and engage in risky escalatory behavior, perhaps to the nuclear level, to rectify destruction of its IBGs. Thus, like Pakistan, India too could be risk acceptant in a loss domain.

South Asia—Danger Ahead?

According to one view, an advantage of Cold Start over the Sundarji doctrine is that its limited objectives deny "Pakistan the 'regime survival' justi-

fication for employing nuclear weapons in response to India's conventional attack."[53] However, if India uses the Cold Start doctrine it could cross one or more of Pakistan's redlines, and even though it does not threaten regime survival, Pakistan could respond in a way predicted by prospect theory. For example, an Indian drive 20–80 km into Pakistan could be framed by authorities in Islamabad as a loss worthy of an escalation risk because it violates the "space threshold." Since Pakistan has not defined what constitutes the conquest of "a large part of its territory," India would not know it had crossed this threshold until Pakistan reacted. The same problem applies to Pakistan's other ill-defined redlines. Similarly, losses incurred by India unknowingly crossing one or more redlines could induce its leaders to accept a gamble they would otherwise deem unacceptable, namely escalation, to deter further Pakistani actions. However, deterring additional Pakistani moves could be contingent upon how Islamabad defines its losses.

The "firebreak" that has existed heretofore between strictly conventional war and devastating countervalue nuclear attacks is dissipating as each side tries to outmaneuver the other at the operational level of war. The more predictable deterrent relationship explained by rational choice is yielding to a political-military balance characterized by far greater ambiguity and potential risk-taking behavior that is explained by prospect theory. Cold Start and the Hatf-9 are moving India and Pakistan from mutual deterrence built around a clear firebreak between conventional and full-scale nuclear war to a search for escalation dominance by each side. India believes the limited objectives sought under Cold Start will not precipitate a Pakistani nuclear response, while Pakistan believes the use of the Hatf-9 would not provoke a full-scale conventional war with escalatory potential or even nuclear retaliation.[54] The mutual deterrence that has characterized the Indo-Pakistani balance since 1998 is giving way to a potentially dangerous relationship wherein a future conflict may be shaped less by leaders' rational choices in the tempest of mounting losses than by both sides framing their losses in a way that causes them to accept risks they otherwise would reject, and with potentially catastrophic consequences.

The ramifications for the United States and other countries are clear. Given the developments discussed above, the potential exists for a future militarized crisis on the subcontinent to escalate rapidly to the nuclear level, including devastating countervalue strikes by both countries that would result in a humanitarian disaster with millions killed and millions more injured.[55] In addition to massive infrastructure losses that could

doom the survivors, radioactive fallout across the region could injure or kill people outside India and Pakistan and severely hamper external efforts to deliver relief. Moreover, it is possible that the severe effects of nuclear war on the subcontinent would not remain confined to the region. A study by the National Academy of Sciences in the United States predicted that a nuclear war fought with 100 Hiroshima-size weapons exploded over cities in the northern subtropics "might pose an unprecedented hazard to the biosphere worldwide" affecting both human health and agricultural production, perhaps for years.[56] It is estimated currently that India and Pakistan possess between 130 and 170 operational strategic nuclear warheads.[57] In light of the regional and possibly global consequences of nuclear war between India and Pakistan, the United States should engage now to forestall a potential catastrophe rather than wait to mediate a militarized dispute that could escalate too rapidly for crisis intervention. SSQ

Notes

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1. See, for example, Vipin Narang, "Posturing for Peace? Pakistan's Nuclear Postures and South Asian Stability," *International Security* 34, no. 3 (Winter 2009/10): 38–78; Dinshaw Mistry, "Complexity of Deterrence among New Nuclear States: The India-Pakistan Case," in *Complex Deterrence: Strategy in the Global* Age, ed. T. V. Paul, Patrick M. Morgan, and James J. Wirtz (Chicago: University of Chicago Press, 2009), 183–203; Mistry, "Tempering Optimism about Nuclear Deterrence in South Asia," *Security Studies* 18, no. 1 (January–March 2009): 148–82; Sumit Ganguly, "War, Nuclear Weapons, and Crisis Stability in South Asia," *Security Studies* 17, no. 1 (January–March 2008): 164–84; Bruce Riedel, "South Asia's Nuclear Debate," *Survival* 50, no. 2 (April–May 2008): 107–26; Ganguly, "Nuclear Stability in South Asia," *International Security* 33, no. 2 (Fall 2008): 45–70; S. Paul Kapur, "Ten Years of Instability in a Nuclear South Asia," *International Security* 33, no. 2 (Fall 2008): 71–94; Michael Quinlan, "India-Pakistan Deterrence Revisited," *Survival* 47, no. 3 (Autumn 2005): 103–16; Waheguru Pal Singh Sidhu, "Regional Dynamics and Deterrence: South Asia (1)," *Contemporary Security Policy* 25, no. 1 (April 2004): 166–78; Naeem Ahmad Salik, "Regional Dynamics and Deterrence: South Asia (2)," ibid., 179–201; and Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate Renewed* (New York: W. W. Norton, 2003), 88–124.

2. I apply prospect theory to this situation because, as Tversky and Kahneman point out, it provides a richer texture than rational choice regarding the human psychology of decision making. See Amos Tversky and Daniel Kahneman, "The Framing of Decisions and the Psychology of Choice," *Science* 211 (30 January 1981): 453–58. Additionally, the rich body of work on escalation theory could be applied to this case to further assess the potential of nuclear war between India and Pakistan during future militarized crises. I thank Gary Schaub of the Air War College for this suggestion.

3. Robert T. Batcher, "The Consequences of an Indo-Pakistani Nuclear War," *International Studies Review* 6, no. 4 (December 2004): 140n10. Also, excellent discussions about the 1998 tests are available in Sumit Ganguly, "India's Pathway to Pokhran II: The Prospects and Sources of New Delhi's Nuclear Weapons Program," *International Security* 23, no. 4 (Spring 1999): 148–77; and Samina Ahmed, "Pakistan's Nuclear Weapons Program: Turning Points and Nuclear Choices," ibid., 178–204.

4. Stephen Cohen and Sunil Dasgupta quote a senior Indian official who averred that India cannot risk attacking Pakistan because it does not know the location of Pakistani military assets. Presumably Pakistan encounters a similar limitation that also compels restraint. See Cohen and Dasgupta, *Arming without Aiming: India's Military Modernization* (Washington: Brookings Institution Press, 2010), 63.

5. S. Paul Kapur, "India and Pakistan's Unstable Peace: Why Nuclear South Asia Is Not Like Cold War Europe," *International Security* 30, no. 2 (Fall 2005): 144.

6. Ibid.

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

8. The basic concept for the stability-instability paradox is Glenn H. Snyder, "The Balance of Power and the Balance of Terror," in *Balance of Power*, ed. Paul Seabury (San Francisco: Chandler Publishing Co., 1965), 185–201. Kapur, "India and Pakistan's Unstable Peace," 131, identifies two interpretations of the stability-instability paradox in the literature: one interpretation wherein "the possibility of lower-level conflict spiraling to the nuclear threshold facilitates regional violence" and an interpretation wherein "the paradox allows lower-level violence in South Asia through a lack of escalatory potential."

9. Kapur, "India and Pakistan's Unstable Peace," 138.

10. Ibid., 141.

11. A superb discussion of the Kargil conflict, its causes and consequences and lessons learned, is available in Peter R. Lavoy, ed., *Asymmetric Warfare in South Asia: The Causes and Consequences of the Kargil Conflict* (Cambridge, UK: Cambridge University Press, 2009). The brief discussion of the conflict in this paragraph draws on Peter Lavoy's essay in this book.

12. Maj Gen Afsir Karim, retired, "Kargil—The Pakistan Gamble," in *Kargil Blunder: Pakistan's Plight, India's Victory*, ed. Maj Gen Y. Bahl, retired (New Delhi: Manas Publications, 2000), 121.

13. See, for example, John H. Gill, "Military Operations in the Kargil Conflict," in *Asymmetric Warfare in South Asia*, 121–22.

14. P. R. Chari, Pervaiz Iqbal Cheema, and Stephen P. Cohen, *Four Crises and a Peace Process: American Engagement in South Asia* (Washington: Brookings Institution Press, 2007), 122.

15. Karim, "Pakistan Gamble," 123.

16. Afsir Karim, "Pakistan's Aggression in Kashmir," in *Kargil Blunder*, 37.

17. Simla Agreement, 2 July 1972, http://www.jammu-kashmir.com/documents/simla.html.

18. Kapur, "India and Pakistan's Unstable Peace," 138.

19. Ganguly, "Nuclear Stability in South Asia," 59.

20. Peter R. Lavoy, "Introduction: The Importance of the Kargil Conflict," in *Asymmetric Warfare in South Asia*, 22.

21. Chari et al., *Four Crises and a Peace Process*, 150.

22. Ganguly, "Nuclear Stability in South Asia," 59.

23. Ibid., 61.

24. Chari et al., *Four Crises and a Peace Process*, 153.

25. President Pervez Musharaf's Address to the Nation, 12 January 2002, http://www.satp.org/satporgtp/countries/pakistan/document/papers/2002Jan12.htm.

26. Chari et al., *Four Crises and a Peace Process*, 154; and S. Paul Kapur, "Ten Years of Instability in a Nuclear South Asia," *International Security* 33, no. 2 (Fall 2008): 81.

27. Celia W. Dugger, with Thom Shanker, "India Sees Hope as Pakistan Halts Kashmir Militants," *New York Times*, 9 June 2002, sec. 1.

28. Ganguly, "Nuclear Stability in South Asia," 65.

29. Ibid.

30. Cohen and Dasgupta, *Arming without Aiming*, 55.

31. Walter C. Ladwig III, "A Cold Start for Hot Wars," *International Security* 32, no. 3 (Winter 2007/08): 159–60.

32. Ibid., 160.

33. Ibid., 162.

34. Vipin Narang, "Posturing for Peace: Pakistan's Nuclear Postures and South Asian Stability," *International Security* 34, no. 3 (Winter 2009/10): 74.

35. Ladwig, "Cold Start for Hot Wars," 162–63.

36. Cohen and Dasgupta, *Arming without Aiming*, 60.

37. See ibid.; Narang, "Posturing for Peace," 74; and Kapur, "India and Pakistan's Unstable Peace," 89.

38. Kapur, "India and Pakistan's Unstable Peace," 89.

39. I use the term *fully implemented* because the current operational status of Cold Start is not clear. Although Cohen and Dasgupta state (p. 61) that "there is evidence that offensive units are now forward deployed, and that supporting infrastructure for the Integrated Battle Groups is being built," India's army chief stated as recently as December 2010 that India does not "have anything called 'Cold Start.' " Quoted in Francisco Aguilar, Randy Bell, Natalie Black, Sayce Falk, Sasha Rogers, and Aki Peritz, *An Introduction to Pakistan's Military* (Boston: Belfer Center for Science and International Affairs, July 2011), 11. Since Cold Start may not be fully implemented, this could account, at least in part, for India's military restraint following terrorist attacks by Lashkar-e-Toiba in 2008 against targets in Mumbai that left 160 people dead. Or, India's civilian leaders may yet be reluctant to use conventional military force against Pakistan for indirect attacks fearing escalation.

40. See the *Draft Report of the National Security Advisory Board on Indian Nuclear Doctrine*, 17 August 1999, http://www.pugwash.org/reports/nw/nw7a.htm. An update of this doctrine was provided in a press release on 4 January 2003 by the Cabinet Committee on Security Reviews, http://girder.docuweb.ca/India/news/pr/pr-0301.html.

41. Paolo Cotta-Ramusino and Maurizio Martinelli, *Nuclear Safety, Nuclear Stability and Nuclear Strategy in Pakistan* (Como, Italy: Landau Network, 21 January 2002), 6.

42. Ibid., 5. Scant information is available from Pakistan about its nuclear doctrine. An article in *Dawn* on 15 July 2011 referred to a handout provided after a meeting of the National Command Authority (NCA), stating only that Pakistan would "continue to pursue its policy of credible minimum deterrence" and that the "NCA expressed satisfaction at the security and safety of Pakistan's strategic programmes and facilities, and operational readiness of weapons." See "N-deterrence to be Pursued," http://www.dawn.com/2011/07/15/n-deterrence-to-be-pursued.html.

43. Cotta-Ramusino and Martinelli, *Nuclear Safety,* 6.

44. Ladwig, "Cold Start for Hot Wars," 169.

45. Some anticipated this move long ago. See, for example, Ladwig, "Cold Start for Hot Wars," 169; and Air Commodore Tariq M. Ashraf, Pakistan Air Force, "Doctrinal Reawakening of the Indian Armed Forces," *Military Review* 84, no. 6 (November–December 2004): 58.

46. "Pak Test Fires Hatf-9 N-capable Missile," *Indian Express*, 20 April 2011, http://www.indianexpress.com/story-print/778505/.

47. "Pakistan Tests Short-Range Ballistic Missile," *Hindu*, 19 April 2011, http://www.thehindu.com/news/international/article1709352.ece?css=print.

48. Daniel Kahneman and Amos Tversky, "Prospect Theory: An Analysis of Decision under Risk," *Econometrica* 47, no. 2 (March 1979): 263–92.

49. Jeffrey D. Berejikian, "A Cognitive Theory of Deterrence," *Journal of Peace Research* 39, no. 2 (March 2002): 170.

50. Kahneman and Tversky, "Prospect Theory," 287.

51. The framing effect is illustrated in data obtained from participants in experiments related to risk acceptance and risk avoidance. Tversky and Kahneman found that a framing effect shaped respondents' choices in ways that are contrary to rational choice theory. They routinely found that respondents' choices correlated strongly with how they framed problems. For example, in experiments conducted at Stanford University and the University of British Columbia, some students were given the following scenario:

> Imagine the United States is preparing to respond to an Asian disease expected to kill 600 people. Two alternative programs are available to respond to the disease:
>
> (1) If Program A is adopted, 200 people will be saved, or
>
> (2) If Program B is adopted there is a 1/3 probability that 600 people will be saved.
> Although the outcome of either program is identical, 72 percent of the respondents chose Program A because they framed their choice in terms of the certain prospect of saving 200 people versus the more "risky" prospect of a 1/3 chance of saving 600. This framing effect illustrates risk aversion in a gain domain.
>
> Another group of respondents was given the same scenario, but with a different framing of choices:
>
> (3) If Program C is adopted, 400 people will die, or
>
> (4) If Program D is adopted, there is a 1/3 probability that nobody will die.
> Although the outcome of either program is identical, 78 percent of the respondents chose Program D because they framed their choice in terms of 400 certain deaths being less acceptable than a 2/3 chance that 600 will die.
>
> This framing effect illustrates risk acceptance in a loss domain. The only difference between the two scenarios is that the first is framed by the number of lives saved and the second by the number of lives lost.
>
> See Tversky and Kahneman, "The Framing of Decisions," 453–58.

52. Berejikian, "Cognitive Theory of Deterrence," 174n13.

53. Ladwig, "Cold Start for Hot Wars," 166.

54. Ibid.; and Ruhee Neog, *Pakistan's Nuclear Posturing: Is Hatf-9 a Response to Cold Start?* (New Delhi: Institute of Peace and Conflict Studies, 20 June 2011), http://www.ipcs.org/print_article-details.php?recNo=3439.

55. The results of nuclear war on the subcontinent would be devastating. The Natural Resources Defense Council (NRDC) developed two scenarios to illustrate the consequences of

nuclear war in South Asia. In the first scenario, 10 Hiroshima-size explosions occur over five Indian and five Pakistani cities with no fallout. In this scenario, nearly two million people in India would be killed, and slightly more than one million would die in Pakistan. Additionally, nearly three million Indians would receive varying levels of injuries, while nearly two million Pakistanis would be injured. In the second scenario, 12 25-KT weapons are detonated at ground level in Indian cities, and the same number and yield weapons are detonated at ground level in Pakistani cities. Since the fireballs from these weapons would touch the ground, large amounts of terrestrial material would be vaporized, irradiated, and carried aloft, ultimately returning to Earth as radioactive fallout. The NRDC study estimated that in addition to millions killed directly in these attacks, tens of millions would die or be sickened due to radiation poisoning. Robert Batcher assumes 50-KT weapons "will be attainable in the near term," and "these weapons will be reserved for population targets." See Batcher, "Consequences of an Indo-Pakistani Nuclear War," 140. The NRDC scenarios were developed in 2002, so population growth and density in the target areas would undoubtedly result in higher deaths and injuries today. See NRDC, "The Consequences of Nuclear Conflict between India and Pakistan," 4 May 2002, http://www.nrdc.org/nuclear/southasia.asp.

56. See Michael J. Mills, Owen B. Toon, Richard P. Turco, Douglas E. Kinnison, and Rolando R. Garcia, "Massive Global Ozone Loss Predicted Following Regional Nuclear Conflict," *Proceedings of the National Academy of Sciences* 105, no. 14 (8 April 2008): 5307–12.

57. International Institute for Strategic Studies, *The Military Balance: 2011* (London: Routledge, March 2011), 469.