India's Pathway to Pokhran II: The Prospects and Sources of New Delhi's Nuclear Weapons Program

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The Prospects and Sources of New Delhi's Nuclear Weapons Program

Šumit Ganguly

On May 11 and 13, 1998, India set off five nuclear devices at its test site in Pokhran in the northwestern Indian state of Rajasthan—its first such tests in twenty-four years. The initial test had been carried out at the same site on May 18, 1974. Not unexpectedly, as in 1974 much of the world community, including the majority of the great powers, unequivocally condemned the Indian tests.[1] The coalition national government, dominated by the jingoistic Bharatiya Janata Party (BJP), knew that significant international pressures would be brought to bear upon India once it breached this important threshold. Yet the BJP chose to disregard the likely adverse consequences and departed from India's post-1974 "nuclear option" policy, which had reserved for India the right to weaponize its nuclear capabilities but had not overtly declared its weapons capability. National governments of varying political persuasions had adhered to this strategy for more than two decades.

A number of seemingly compelling possibilities have been offered to explain India's dramatic departure from its policy of nuclear restraint. None, however, constitutes a complete explanation. Yet each offers useful insights into the forces that led to the Indian nuclear tests. One explanation holds that the chauvinistic BJP-led government conducted the tests to demonstrate both its own virility to the Indian populace and India's military prowess to the rest of the world. A second argument suggests that the BJP conducted the tests to cement its links with contentious parliamentary allies. A third argument con-

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1. For a compendium of official reactions to the 1998 Indian and Pakistani nuclear tests, see "India and Pakistan Nuclear Tests: Details and International Reaction," *Disarmament Diplomacy*, No. 20 (May 1998), pp. 1–20. A small debate has arisen over the number and quality of both the Indian and Pakistani tests. See Robert Lee Hotz, "Tests Were Exaggerated by India and Pakistan," *International Herald Tribune*, September 17, 1998, p. 1; and Raj Chengappa, "Is India's H-Bomb a Dud?" *India Today International*, October 12, 1998, pp. 22–28.

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tends that these tests were designed to bolster India's prestige in the international system. A fourth argument focuses on the role of key Indian scientists in endowing nuclear weapons with mythical significance.

My analysis draws upon components of the various proffered explanations and seeks to develop them in a historically contextualized fashion. I argue in this article that three factors impelled India toward its 1998 nuclear tests: fifty years of critical political choices, influenced by ideology and the imperatives of statecraft; fitful scientific advances in India's nuclear infrastructure; and an increased perception of threat from China and Pakistan since the end of the Cold War.

The debates and decisions pertaining to India's nuclear weapons program can be divided into five distinct phases, each of which brought the country closer to the May 1998 tests. The first phase began with the creation of India's Atomic Energy Commission (AEC) in 1948; the Chinese nuclear test in 1964 marked the beginning of the second phase; the third comprises the buildup and execution of India's first nuclear test, in 1974; the fourth began in the aftermath of that test; and the fifth brought India from the collapse of the Soviet Union in 1991 to the tests in 1998. At each of these stages and, more important, at each of the crucial points where decisions were made to take India closer to nuclear weapons status, the three factors outlined above can explain India's nuclear decisions.[2] India's perceptions of external threats and the reactions of the great powers to its security concerns played a fundamental role in driving the nuclear program. Segments of the scientific community within India, at these critical junctures, not only enabled but encouraged the program's development. Finally, the most critical element involved the political choices made by the Indian national leadership. A sixth section assesses a number of proffered explanations for the Indian tests and discusses the prospects for regional stability.

Phase One: The Origins of India's Nuclear Program

The Indian nuclear program in a sense predates India's independence from the British Empire in 1947. The civilian program can be traced to the work of the Indian physicist Homi J. Bhaba, who had studied with the eminent nuclear scientist Lord Ernest Rutherford at Cambridge University in the 1930s. Upon his return to India, Bhaba persuaded one of India's industrial giants, the Tata

2. India's quest for great power status also, in some measure, contributed to the nuclear tests. But this explanation has received inordinate emphasis, especially in the Western press, to the neglect of other, more compelling explanations. See, for example, Pankaj Mishra, "A New Nuclear India?" *New York Review of Books*, June 25, 1998, pp. 55–64.

family, to contribute money toward the creation of a center for the study of nuclear physics. The Tata Institute for Fundamental Research opened in Bombay in 1945. After India's independence, Bhaba convinced India's first prime minister, Jawaharlal Nehru, of the signal importance of atomic energy research in enabling India to build an industrial base and to tackle the overwhelming problems of entrenched poverty. Bhaba's views impressed Nehru, who had a fundamentally scientific demeanor.[3] From the outset the Indian atomic energy establishment, under the direction of the prime minister, enjoyed a high degree of autonomy and was largely shielded from public scrutiny.[4] Bhaba, as the first head of the Department of Atomic Energy, created on August 3, 1954, worked zealously to preserve the organizational autonomy of India's nuclear energy estate. Shortly after India's independence, the AEC had been established under the Department of Scientific Research, and, in accordance with India's strategy of economic self-reliance, every effort was made to keep the program indigenous. Perforce India had to obtain some assistance in reactor design from the United Kingdom and from Canada.

Publicly, Nehru opposed the development of nuclear weapons, a position that accorded with his deep-seated opposition to the use of force to resolve international disputes.[5] This conviction, in part, stemmed from the Gandhian legacy of the Indian nationalist movement. Nehru's aversion to nuclear weapons also drew from his fundamental fear of the militarization of Indian society.[6] Additionally, his opposition was an outgrowth of his firm beliefs about the role of the use of military force in world affairs.[7] Nehru believed that military spending was, at best, a necessary evil.[8]

3. On this point, see Leonard Beaton and John Maddox, *The Spread of Nuclear Weapons* (New York: Praeger, 1962), p. 136.
4. For particularly strident criticisms of the lack of accountability in the Indian nuclear program, see David Brown, *Nuclear Power in India: A Comparative Analysis* (London: Allen and Unwin, 1983).
5. There has been some speculation during the last decade that, despite his public stance, Nehru wanted to keep India's weapons option open. On Nehru's ambivalence toward nuclear weapons, see Peter Lavoy, "Learning to Live with the Bomb? India and Nuclear Weapons, 1947–74," Ph.D. dissertation, University of California, 1997, especially pp. 153–158.
6. Stephen P. Cohen, *The Indian Army* (Berkeley: University of California Press, 1967).
7. Western commentators have often commented on Nehru's willingness to use force in Kashmir in 1947–48 and subsequently in Goa in 1960. These charges of hypocrisy are largely polemical. The Kashmir war involved the defense of a besieged state. In the Goan case all negotiated attempts to induce the Portuguese to withdraw peacefully from their anachronistic colonial enclave failed. Only under these conditions did Nehru authorize the use of force. The literature on Kashmir's accession to India and the subsequent war is voluminous; for a dispassionate account, see H.V. Hodson, *The Great Divide* (Karachi: Oxford University Press, 1985). For a particularly thoughtful account of the Goa question and India's resort to force, see Arthur Rubinoff, *India's Use of Force in Goa* (Bombay: Popular Prakashan, 1971).
8. Even a quick perusal of his many writings reveals the depth of these convictions. See, for example, Jawaharlal Nehru, *The Discovery of India* (New Delhi: Oxford University Press, 1995).

As prime minister, Nehru enunciated a policy of nonalignment, principally to distance India from the superpower struggle. Both the Western and Soviet blocs derided this doctrine, especially when it was inconsistently applied. Nevertheless, Nehru refused to be swayed. He spoke out vigorously against the growing nuclear arsenals of both superpowers and sought to reduce international tensions in various parts of the world.[9]

Despite his public opposition to nuclear weapons, Nehru granted Bhaba a free hand in the development of India's nuclear infrastructure. Meanwhile, he sought to lay the necessary foundations should a political decision to acquire nuclear weapons be made. In pursuit of this end, Bhaba worked inexorably toward a complete mastery of the nuclear fuel cycle and toward a completely indigenous production process. As early as 1958, Bhaba had a conversation with the British physicist and defense adviser Lord P.M.S. Blackett about his interest in the acquisition of nuclear weapons.[10] Four years later, India's disastrous war with China likely reinforced Bhaba's interest in pursuing the nuclear weapons option.[11]

THE 1962 SINO-INDIAN BORDER WAR AND ITS AFTERMATH

A turning point in the Indian foreign policy establishment's attitude toward defense spending came in the aftermath of the Sino-Indian border war of October 1962. After invading India along the Himalayan border, the Chinese People's Liberation Army routed the ill-equipped and ill-prepared Indian army and came to occupy some 14,000 square miles of Indian territory. Worse still, the Chinese declared a unilateral cease-fire after achieving their territorial objectives, thereby humiliating Nehru and the Indian political leadership.[12] The significance of this war on India's foreign and security policymakers cannot be underestimated. The Chinese attack fundamentally called into question Nehru's varied attempts to court the Chinese and to bring China into the comity of nations: he had expressed the mildest condemnation of the harsh Chinese occupation of Tibet in 1950; had readily ceded India's extraterritorial

9. For a discussion of the philosophical origins of nonalignment and the quest for an alternative world order, see A.P. Rana, *The Imperatives of Nonalignment* (Delhi: Macmillan, 1976). For a discussion of the practice of nonalignment and Nehru's attempt to defuse international tensions in a neighboring region, see D.R. Sardesai, *Indian Foreign Policy in Cambodia, Laos, and Vietnam, 1947–1964* (Berkeley: University of California Press, 1968).

10. See Shyam Bhatia, *India's Nuclear Bomb* (Ghaziabad, India: Vikas, 1979), p. 114.

11. For a discussion of Bhaba's concerns about Chinese capabilities and intentions, see Incoming Telegram, U.S. Department of State, November 14, 1964, available in file "Nuclear Proliferation: India-Pakistan," National Security Archive, Washington, D.C.

12. On this point, see Steven Hoffman, *India and the China Crisis* (Berkeley: University of California Press, 1990).

privileges in Tibet, inherited from the British colonial period, in 1952; and had championed China's entry into the United Nations (UN). Through these measures Nehru had hoped to avoid a conflict with China, which he knew would compel him to increase defense spending. The border war forced Nehru to reappraise his strategy and his most cherished ideals.

Phase Two: The Chinese Test at Lop Nor

The second phase of India's nuclear program started shortly after the first Chinese nuclear test at Lop Nor on October 16, 1964.[13] Following that test, segments of India's political and scientific establishments evinced a greater interest in acquiring nuclear weapons.

By this time Bhaba had begun to articulate the politico-military significance of nuclear weapons: "Nuclear weapons coupled with an adequate delivery system can enable a State to destroy more or less totally the cities, industry, and all-important targets in another State. It is then largely irrelevant whether the State so attacked has greater destructive power at its command. With the help of nuclear weapons, therefore, a State can acquire what we may call a position of absolute deterrence even against another having a many times greater destructive power under its control."[14]

Bhaba's stance toward nuclear deterrence would find many adherents and some critics in India in the wake of the Chinese test. To no one's surprise, the news of the test released a firestorm of controversy across India. China's acquisition of nuclear weapons in the aftermath of the 1962 Sino-Indian border war dealt a further blow to India's national security. Sisir Gupta, one of India's ablest diplomats, spelled out the concerns of most Indian strategists: ". . . without using its nuclear weapons and without unleashing the kind of war which would be regarded in the West as the crossing of the provocation-threshold, China may subject a non-nuclear India to periodic blackmail, weaken its people's spirit of resistance and self-confidence, and thus achieve without a war its major political and military objectives in Asia."[15] Minoo Masani, a leader of the small, pro-Western Swatantra Party, expressed the fears of many of India's leaders: "The Chinese explosion cannot be ignored; it cannot

13. John Wilson Lewis and Xue Litai, *China Builds the Bomb* (Stanford, Calif.: Stanford University Press, 1988).
14. H.J. Bhaba, "Safeguards and the Dissemination of Military Power," paper presented at the Twelfth Pugwash Conference on Science and World Affairs, Geneva, January 27–February 1, 1964.
15. Sisir Gupta, "The Indian Dilemma," in Alastair Buchan, ed., *A World of Nuclear Powers?* (Englewood Cliffs, N.J.: Prentice-Hall, 1966), pp. 55–67, at p. 62.

be written off; it cannot be played down; it is of major significance. We are the country for which it has the most immediate importance."[16]

Masani and other opposition members rebuked the government for not undertaking a more thorough review of the changed security situation on the subcontinent following the Chinese test and for not developing an appropriate response. The Bharatiya Jana Sangh (the forerunner to the BJP) condemned India's policy of nuclear abstinence.[17] Even normally progovernment newspapers questioned the leadership's seeming complacency in the wake of the Chinese nuclear tests.[18]

Nehru, however, remained publicly opposed to the development of nuclear weapons. Nine days before his death, in a television interview in New York on May 18, 1964, he stated, "We are determined not to use weapons for war purposes. We do not make atom bombs. I do not think we will."[19] His defense minister, Y.B. Chavan, however, felt compelled to reaffirm India's commitment to the modernization of its conventional forces in the wake of the Chinese test.[20]

THE QUEST FOR A NUCLEAR GUARANTEE

In December 1964 at a press conference in London, Prime Minister Lal Bahadur Shastri revealed India's efforts to obtain a nuclear guarantee from the nuclear weapons states.[21] He pursued this course even though a number of Indian politicians, including some within the ruling Congress Party, feared that it would compromise their country's nonalignment stance.

At the same time, political analysts with close connections to the government argued that India's credentials for boosting the nuclear disarmament agenda

16. Quoted in *Lok Sabha Debates* 35, November 16–27, 1964 (New Delhi: Lok Sabha Secretariat, 1964), pp. 1239–1240.
17. A representative sample is Eskayji (pseudonym), "Why India Must Have the Bomb," *Organizer* (India), December 28, 1964, p. 5.
18. Editorial, "Time for Rethinking," *Hindustan Standard* (Delhi), October 20, 1964, p. 4.
19. Quoted in G.G. Mirchandani, *India's Nuclear Dilemma* (New Delhi: Popular Book Services, 1968), p. 23.
20. "New Strategy on Defence: Impact of Chinese Atomic Test," *Statesman* (Calcutta), October 20, 1964, p. 1; and Express News Service, "Chavan Urges a Look at the Bomb from Defence Angle: Chinese Threat Not Yet Over," *Indian Express* (Delhi), December 1, 1964, p. 1. See also Incoming Telegram, U.S. Department of State, October 27, 1968, available in file "Nuclear Proliferation: India-Pakistan," National Security Archive, Washington, D.C.
21. On the basis of the limited sources in the public domain, it appears that India's quest for a nuclear guarantee was poorly executed. It is hard to discern what exactly the Indian leadership had in mind when it sought to acquire such a guarantee from the great powers. For a discussion of India's attempts to obtain a nuclear guarantee, see A.G. Noorani, "India's Quest for a Nuclear Guarantee," *Asian Survey*, Vol. 7, No. 7 (July 1967), pp. 490–502.

could be strengthened if the country refrained from developing nuclear weapons even in the face of potential aggression by a nuclear-armed adversary.[22] These sentiments were first aired in a vigorous debate that took place at the All India Congress Committee (AICC) meeting between January 7 and 9, 1965. In the aftermath of the Chinese tests a number of Congress Party members of parliament favored dropping India's rigid stance on questions of disarmament. They forcefully and repeatedly called for a reorientation of India's foreign policy in light of the new perceived threat from China. However, the Congress leadership refused to address their central demand—a fundamental shift in India's nuclear policy—contending that the prohibitive costs of embarking on a nuclear weapons program, India's historic commitment to a nuclear-free world, its belief in Gandhian principles, and misgivings about alienating world opinion undermined the case for the acquisition of a nuclear weapons option.[23] In effect, the AICC chose to defer the question of acquiring nuclear weapons.[24] Interestingly, several individuals upbraided Homi Bhaba at this conference for a recent public statement in which he had spelled out the potential economic costs of developing a modest nuclear force for India.[25]

These sentiments, which rallied against a drastic shift in India's security policy, were again expressed, despite continuing dissension, at the next meeting of the AICC, held on January 8, 1966.[26] The arguments for rejecting the call to nuclear arms were made mostly along moral and ethical lines. One of the more prominent critics of nuclear weapons, senior Congress politician Morarji Desai, led the charge against the proponents of a shift in India's nuclear policies. Desai argued that India should not jettison its moral objections to nuclear weapons at the first sign of danger. At the same time, Prime Minister Shastri argued that the superpowers could not afford to be indifferent to India's plight in the face of a nuclear threat from China; however, he did not completely forswear the nuclear option. Some evidence shows that Shastri allowed

22. Some flavor of the strategic debate within India can be gathered from R.K. Nehru, "The Challenge of the Chinese Bomb," *India Quarterly* (1965), pp. 3–14.
23. Shastri's concerns about the economic burden of pursuing a nuclear weapons program were entirely understandable: he had inherited an unenviable economy legacy. See Michael Brecher, *Nehru's Mantle: The Politics of Succession in India* (New York: Praeger, 1966), pp. 138–150.
24. Thomas W. Graham, "Nuclear Deterrence, Arms Control, and Confidence-Building Measures in South Asia," in Eric H. Arnett, ed., *New Perspectives for a Changing World Order* (Washington, D.C.: American Association for the Advancement of Science, 1991), p. 127.
25. Special Correspondent, "AICC Split on Atomic Issue," *Statesman* (Delhi), November 8, 1964, p. 1.
26. K. Rangaswami, "Atom Bomb to Meet China's Threat: Vigorous Support in AICC for Independent Deterrent," *Hindu* (Madras), January 8, 1965, p. 3.

Bhaba to work toward reducing the time needed to develop nuclear explosives.[27] He concluded that, for the present term, India should strengthen its conventional forces to defend itself against a possible Chinese attack.[28]

Amid these debates, Shastri dispatched Sardar Swaran Singh, his foreign minister, to ascertain the views of the United States, the Soviet Union, and the United Kingdom on India's request for a nuclear guarantee. Swaran Singh's initial assessment suggested that the requisite guarantees would materialize. Subsequently, however, during a debate on May 10, 1965, in the Lok Sabha (the lower house of the Indian parliament), he admitted that the nuclear weapons states had ultimately failed to provide any such guarantees.

APPROACHES TO A NONPROLIFERATION TREATY

During this period the United States and the Soviet Union, exercised by the Chinese nuclear tests, sought to forge a multilateral treaty to stop the further spread of nuclear weapons.[29] Accordingly, in November 1965 the UN Political Committee adopted a resolution detailing the guidelines for a treaty on nuclear nonproliferation. The Indian delegation to the UN had played a key role in drafting the central provisions of the text, which embodied two principles of special significance to India's concerns. First, the draft treaty specified a balance of mutual responsibilities and obligations on the part of the nuclear and nonnuclear powers. It offered the nonnuclear states access to peaceful nuclear technology in return for their agreement not to obtain or develop nuclear weapons. Second, the draft indicated that the attempts to promote nonproliferation would be merely a first step toward the ultimate goal of universal nuclear disarmament. As discussions on the proposed treaty progressed, India added another qualification: nonnuclear states should be able to carry out "peaceful nuclear explosions."[30] The United States firmly opposed this last proposal on the grounds that no meaningful distinction could be made between "peaceful" and "nonpeaceful" nuclear explosions.[31] The various Indian

27. Albert Wohlstetter, Victor Gilinsky, Robert Gillette, and Roberta Wohlstetter, *Nuclear Policies: Fuel without the Bomb* (Cambridge, Mass.: Ballinger, 1978), p. 58.
28. See, for example, Express News Service, "The Bomb to Loom Large at AICC Meet," *Indian Express* (New Delhi), January 5, 1965, p. 4.
29. John Simpson and Anthony G. McGrew, eds., *The International Nuclear Non-Proliferation System: Challenges and Choices* (New York: St. Martin's, 1984).
30. Ashok Kapur, "India's Nuclear Politics and Policy: Janata Party's Evolving Stance," in T.T. Poulose, ed., *Perspectives of India's Nuclear Policy* (New Delhi: Young Asia Publications, 1978), p. 172.
31. For a useful discussion, see Mirchandani, *India's Nuclear Dilemma*, pp. 121–150.

delegations to the Eighteen Nation Disarmament Conference (ENDC) in Geneva in April and June 1965 nevertheless continued to press this distinction.[32] As the proposed treaty started to take shape, Indian diplomats outside the ambit of the ENDC again raised the question of nuclear guarantees for nonnuclear powers but to little avail.[33]

THE 1965 INDO-PAKISTANI WAR

A second Indo-Pakistani war over Kashmir broke out, in September 1965. During this conflict China provided diplomatic support for Pakistan and threatened to open a second front along India's Himalayan border.[34] Although this crude ultimatum was never carried out, Indian decisionmakers, still reeling from the debacle of 1962, took the Chinese warnings seriously and maintained a high level of alert along the Himalayan border. The war ended in a stalemate. As the United States was unwilling to involve itself in promoting an Indo-Pakistani postwar accord, the Soviets stepped in, helping negotiate a settlement in January 1966 at the then-Soviet Central Asian city of Tashkent. Under the terms of the Tashkent agreement the two sides agreed to return to the status quo ante.

Just before the war ended a hundred members of the Lok Sabha wrote to Prime Minister Shastri calling for India to exercise the nuclear weapons option.[35] Amid the growing public and political pressure, Shastri revealed a slight shift in the government's public pronouncements on nuclear weapons. The pressures confronting Shastri were genuine; India faced the possibility of a two-front war.

While answering a question asked in the Rajya Sabha (the upper house of the Indian parliament), Shastri stated that if the Chinese perfected their nuclear delivery systems India would be forced to reconsider its nuclear policies.[36] During this period India's apprehensions continued to mount as increasing evidence emerged about China's growing nuclear capabilities.[37]

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32. Ashok Kapur, *India's Nuclear Option: Atomic Diplomacy and Decision Making* (New York: Praeger, 1976).
33. Mirchandani, *India's Nuclear Dilemma*, p. 139.
34. For a description and analysis of the three Indo-Pakistani wars, see Šumit Ganguly, *The Origins of War in South Asia: The Indo-Pakistani Conflicts since 1947*, 2d ed. (Boulder, Colo.: Westview, 1994).
35. "Time for A-Bomb—Say 100 M.P.'s," *Indian Express*, September 23, 1965, p. 1.
36. Lal Bahadur Shastri, "If China Develops Nuclear Weapons India Will Have to Consider What to Do," *India News* (Washington, D.C.), December 3, 1965, p. 4.
37. See, for example, Hanson W. Baldwin, "China's Atomic Potential," *New York Times*, March 15, 1966, p. 3.

Shastri died in January 1966 shortly after negotiating the postwar accord with Pakistan. His successor, Nehru's daughter, Indira Gandhi, continued the quest for a nuclear guarantee from the major powers against a future Chinese threat. To this end, she dispatched a distinguished senior bureaucrat, Laxmi Kant Jha, to Moscow and Washington, D.C., in April 1967 to discuss the possibility of a guarantee designed to deter a possible Chinese attack. Despite India's pleas the United States would only offer a guarantee that included significant qualifications. Among other matters, the guarantee would not have had the force of law because it would not be formally ratified by the U.S. Senate.[38] The Soviets were even less forthcoming. At best, they were prepared to make a joint declaration under UN auspices not to employ nuclear weapons against nonnuclear powers.[39] In the event, the qualified guarantees that both sides offered failed to satisfy India's requirements.

BACK TO THE NONPROLIFERATION TREATY

The discussions under way at the ENDC to formulate a nonproliferation treaty had a significant impact on India's disarmament and security plans. The country's earlier emphasis on the pursuit of global nuclear disarmament had been based upon fundamental moral premises. Now the terms of discourse at the international level shifted markedly. This movement was clearly reflected in the positions that India adopted at various multilateral forums. Three shifts were evident in India's negotiating stance: a reduced sense of urgency about the need for international agreements in disarmament matters, a withdrawal from an active role in international arms control negotiations, and the pursuit of more traditional goals of statecraft (such as national security based upon military power, as opposed to reliance on the force of moral arguments).[40]

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38. Noorani, "India's Quest for a Nuclear Guarantee," pp. 498–499. Interestingly, U.S. government analysts not only were cognizant of the Chinese threat to India but also concurred that "the military security argument for an independent Indian nuclear deterrent to a Chinese attack is a particularly powerful one, given the looseness of India's collective security arrangements." See "Background Paper on Factors Which Could Influence National Decisions Concerning Acquisition of Nuclear Weapons," SECRET/NOFORN Background Paper from the Committee on Nuclear Proliferation, January 21, 1965, available in file "Nuclear Proliferation: India and Pakistan," National Security Archive, Washington, D.C.

39. Richard B. Freund, "Indian-Soviet Discussion of Nuclear Guarantees," Memorandum of Conversation, February 16, 1965, available in file "Nuclear Proliferation: India and Pakistan," National Security Archive, Washington, D.C.

40. Michael J. Sullivan, III, "Re-orientation of Indian Arms Control Policy, 1969–1971," paper presented at the annual meeting of the Pennsylvania Political Science Association, Philadelphia, April 14, 1972.

When the major powers agreed on a draft treaty, India was quick to register its opposition. On January 18, 1968, the Soviet Union and the United States presented identical drafts of the treaty to the ENDC. Three of the great powers—the United States, the United Kingdom, and the Soviet Union—signed the treaty on July 1, 1968. The Nuclear Nonproliferation Treaty (NPT) came into force on March 5, 1970. The government of India refused to accede to the terms of the treaty because it failed to address India's misgivings; specifically, the continued nuclear abstinence of the nonnuclear states was not linked to explicit reciprocal obligations by the nuclear weapons states.[41] Although India's argument was couched in moral terms, a more pragmatic consideration—namely, keeping its nuclear weapons option open—guided its decision not to sign the treaty.[42]

Phase Three: The Road to Pokhran I

The third phase of India's nuclear program began with its first nuclear test, in May 1974. Both structural and proximate factors led up to this decision. The repeated failure of the great powers to address India's security concerns and the emergence of a different brand of political leadership within India caused important, if subtle, shifts in its nuclear policies. Prime Minister Indira Gandhi, while repeating the platitudes of nonalignment, reoriented India's foreign policy, basing it less on adherence to moral principles and more on the imperatives of statecraft. In place of her predecessors' carefully forged equidistance from the superpowers, she steadily tilted in a pro-Soviet direction, especially after significant policy differences with the United States arose in 1967 on trade, investment, and foreign aid issues.[43] Furthermore, some Indian analysts argue that U.S. pressure on India during the 1971 Indo-Pakistani War also convinced Indira Gandhi of the signal importance of developing India's military nuclear capabilities.[44]

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41. Sisir Gupta, "India and Non-Proliferation: Hard Choices Ahead," *Times of India* (Delhi), January 29, 1968, p. 6.
42. K. Subrahmanyam, "India: Keeping the Option Open," in Robert M. Lawrence and Joel Larus, eds., *Nuclear Proliferation: Phase II* (Lawrence: University of Kansas Press, 1973).
43. For a discussion of the sources of discord, see Šumit Ganguly, "Of Great Expectations and Bitter Disappointments: Indo-U.S. Relations during the Johnson Administration," *Asian Affairs*, Vol. 15, No. 4 (Winter 1988–89), pp. 212–219. For an analysis of the pro-Soviet tilt, see Robert Horn, *Soviet-Indian Relations: Issues and Influence* (New York: Praeger, 1982).
44. Subrahmanyam, "India: Keeping the Option Open."

While insisting upon India's adherence to the principles of nonalignment, Prime Minister Gandhi signed a twenty-year treaty of "peace, friendship, and cooperation" with the Soviet Union in August 1971. Article 9 of the treaty virtually included a Soviet security guarantee.[45] Although the influence of this treaty is often overlooked in Western strategic analyses of India's security, it greatly assuaged India's fears about military pressures on its borders from a recalcitrant and nuclear-armed China.

India's failure to influence the creation of a global regime that would address its security concerns pushed the country further down the nuclear path. Subsequent events bolstered the Indian elite's commitment to acquire nuclear weapons. In 1971 India and Pakistan became embroiled in a third war, which resulted in the breakup of the Pakistani state and the emergence of Bangladesh in place of the former East Pakistan. In the aftermath of this war India emerged as the preeminent power on the subcontinent.

In the interim, after Homi Bhaba's death in 1966, his successor, Vikram Sarabhai, continued to broaden India's nuclear infrastructure.[46] On May 25, 1970, Sarabhai in a public document spelled out the key features and goals of India's nuclear and space programs for the coming decade. Specifically, the document called for important developments in the arena of space research, including a commitment to develop rocket systems capable of placing 1,200-kilogram payloads into geosynchronous orbit, the development of flight guidance systems for rockets, and the construction of large solid-propellant blocks.[47] The discovery of uranium deposits in northern India had also helped boost India's nuclear programs.[48]

Thus at the start of the 1970s India had both the capability and the political motivation to conduct a nuclear test. The only question that remained about weaponization was the political decision to proceed based upon some assessment of the likely external costs of such a test. In an effort to bolster India's

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45. For an analysis of the significance of this article, see Linda Racioppi, *Soviet Policy towards South Asia since 1970* (Cambridge, U.K.: Cambridge University Press, 1994).
46. For a discussion of India's weapons-making capabilities, see Brahma Chellaney, "South Asia's Passage to Nuclear Power," *International Security*, Vol. 16, No. 1 (Summer 1991), pp. 43–72. For a more skeptical view of India's nuclear infrastructure, see Ravindra Tomar, "The Indian Nuclear Power Program: Myths and Mirages," *Asian Survey*, Vol. 20, No. 5 (May 1980), pp. 517–531.
47. Vikram Sarabhai, "India's Nuclear and Space Programs: A Design for Decade 1970–80," *Institute of Defence Studies and Analysis Journal* (Delhi), Vol. 3, No. 1 (July 1970), pp. 90–91.
48. David Gosling, "India on Way to Nuclear Independence," *Statesman* (New Delhi), November 23, 1971, p. 8.

newfound political status in South Asia after its victory in the 1971 war, Indira Gandhi authorized a nuclear test. The precise timing of the test, however, had much to do with her sagging domestic popularity in the aftermath of the 1973 oil crisis induced by the Organization of Petroleum Exporting Countries.

THE FIRST NUCLEAR TEST

India carried out its first nuclear test on May 18, 1974. Billed as a "peaceful nuclear explosion," the test had a 15-kiloton yield.[49] Subsequently, Defense Minister Jagjivan Ram argued that the test had few or no military implications and was simply part of India's ongoing attempts to harness the peaceful uses of nuclear energy.[50] The two scientists closely associated with the nuclear test, R. Chidambaram and R. Ramanna, maintained the same public posture.[51]

India's explanation of the test found few adherents abroad, however. Of the great powers, only France congratulated the Indians on their success.[52] The Chinese and Soviet reactions were muted, but critical. The United States and Canada cut off all nuclear cooperation with India. Canada accused India of having diverted nuclear materials from a Canadian-supplied reactor to make the bomb.[53] The U.S. reaction, however, was the most severe: in 1976 Congress introduced the Symington amendment to the foreign aid bill, thereby cutting off certain forms of economic and military assistance to countries that received enrichment or reprocessing equipment, materials, or technology without full-scope International Atomic Energy Agency safeguards.[54] Further restrictions soon followed under the Carter administration, which had made nonproliferation one of the key elements of its foreign policy platform. Most important, the Carter administration introduced and passed the Nuclear Nonproliferation Act, omnibus legislation designed to severely curb nuclear sales to recalcitrant nations.[55] The United States also undertook significant efforts to limit prolif-

49. The slightest doubt of the military significance of the test was effectively ruled out in October 1997 when Raja Ramanna, one of the key scientists involved in conducting the test, explicitly stated that the 1974 test was that of a nuclear weapon. See Adirupa Sengupta, "Scientist Says Bomb Was Tested in '74," *India Abroad*, October 17, 1997, p. 14.
50. On this point, see "Indian Rules Out Atomic Arms' Use," *New York Times*, May 23, 1974, p. 5.
51. R. Chidambaram and R. Ramanna, "Some Studies on India's Peaceful Nuclear Experiment," *Peaceful Nuclear Explosions IV* (Vienna: International Atomic Energy Agency, 1975).
52. "New Delhi Assailed at Parley in Geneva for Atom Explosion," *New York Times*, May 22, 1974, p. 3.
53. Robert Trumbull, "Canada Says India's Blast Violated Use of Atom Aid," *New York Times*, May 21, 1974, p. 4.
54. Brahma Chellaney, *Nuclear Proliferation: The U.S.-Indian Conflict* (New Delhi: Orient Longman, 1993), pp. 74–75.
55. For a detailed discussion, see ibid., pp. 56–66.

eration at the multilateral level, taking the lead in the formation of the London Suppliers Group, which sought to coordinate and limit the sales of sensitive and dual-use technologies to countries outside the ambit of the NPT.

The raft of legislation that the U.S. Congress passed after the Indian nuclear test significantly hobbled India's ability to further its nuclear weapons program. The sharpness of international reactions and the variety of nuclear export restrictions that the major industrial powers placed on India came as a surprise to the Indian political elite. This body of restrictive legislation also had a perverse and unintended consequence, however: it made the Indian program increasingly indigenous.

Despite the initial wave of domestic support following the test, pressing internal concerns diverted the public's attention from the pursuit of a nuclear weapons option. In fact, within two years of the test Indira Gandhi had declared a "state of emergency" to avoid prosecution for a number of minor electoral violations. With her personal political survival at stake, she could ill afford to devote significant time and resources to the nuclear question.

Phase Four: A Period of Restraint

The next stage in India's nuclear program was marked by little progress in attaining nuclear weapons status, even though there was increasing public and military (and even some political) support for acquiring nuclear weapons. Two factors explain this restraint. At one level, Indira Gandhi had taken stock of the adverse international reactions to India's nuclear test. At another level, a robust Indo-Soviet strategic relationship assuaged India's security concerns.

In 1977 Indira Gandhi ended the state of emergency and called for fresh national elections. Her sycophantic advisers convinced her that she would win by a wide margin at the polls. Their expectations were completely belied when the Indian electorate turned against her and the Congress Party. An eclectic collection of political parties and leaders who had been opposed to the draconian features of the state of emergency, when personal rights and civil liberties had been dramatically curtailed, formed a coalition government.[56] Morarji Desai, a senior Gandhian and former Congress politician, assumed the prime ministership. Long an opponent of nuclear weapons, primarily on moral grounds, Desai reversed the direction of Indian nuclear planning. He even

56. For a discussion of the "state of emergency," see Henry Hart, ed., *Indira Gandhi's India: A Political System Re-Appraised* (Boulder, Colo.: Westview, 1978).

derided the potential scientific or technological benefits of "peaceful nuclear explosions" and publicly pledged that under his regime India would not conduct nuclear tests.[57]

Desai's term in office lasted only until July 1979. His anti-Congress coalition split amid conflicting ideologies and personal predilections. The caretaker regime of Prime Minister Charan Singh altered Desai's ironclad commitment not to acquire nuclear weapons, holding that the decision was a sovereign Indian prerogative. Many in New Delhi also believed that the incoming Congress government would reverse Desai's policy.[58] In January 1980, when new national elections were held, Indira Gandhi and the Congress Party returned with a significant majority.

THE SOVIET INVASION OF AFGHANISTAN

The Soviet Union's occupation of Afghanistan in late December 1979 had important ramifications for the security of South Asia. In particular, the resulting transformation of U.S.-Pakistani relations was nothing short of dramatic. Under the Carter administration Pakistan had been scorned because of its poor human rights record and its clandestine quest to acquire nuclear weapons. Following the Soviet invasion, the Carter administration's offers of a limited arms and economic assistance package to Pakistan were dismissed by General Mohammed Zia-ul-Haq, the Pakistani military dictator, as "peanuts." In the Reagan administration, Pakistan's relations with the United States entered new territory.

General Zia managed to turn the potentially destabilizing civil war across the Afghan border to his advantage, becoming the beneficiary of significant American largesse in the process. Specifically, the Reagan administration offered his regime a package of concessionary loans and grant aid totaling $3.2 billion over five years. In return, the Pakistani regime was to give the Central Intelligence Agency a largely unrestricted hand in organizing, training, and arming the Afghan resistance. In addition, to assuage Pakistani fears of Indo-Soviet collusion, the Reagan administration agreed to sell Pakistan several squadrons of F-16 fighter jets.

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57. On this issue, see Prime Minister Morarji Desai, "Statement on Peaceful Nuclear Explosions," Rajya Sabha, July 31, 1978, Official Text (New Delhi: Press Information Bureau, Government of India).

58. Mohan Ram, "The South Asian Arms Race," *Far Eastern Economic Review*, November 16, 1979, pp. 38–39. For an analysis of the mounting pressures on the Indira Gandhi regime to weaponize, see Rajiv Desai, "Nuclear Shadow on Subcontinent," *Chicago Tribune*, August 17, 1981, p. 21.

India, as expected, vehemently lobbied against the sale of the F-16s to Pakistan, but with little success. Unhappy with the potential transformation of the South Asian security situation, India turned to the Soviet Union for military assistance.[59] The Soviets were extraordinarily forthcoming in providing arms at concessional rates, but at another price: India had to refrain from publicly criticizing the Soviet invasion and abstain from the UN General Assembly resolutions condemning the Soviet invasion and occupation of Afghanistan.

As the arms transfer relationship between the United States and Pakistan was renewed and India's conventional military superiority eroded, the clamor for India to exercise the nuclear weapons option resumed. Prominent newspaper commentators and security analysts argued that India needed to have a nuclear edge over Pakistan to cope with the emerging security situation in the region. The earlier preoccupation with Chinese nuclear capabilities was redirected toward Pakistan's growing nuclear status. The argument ran along the following lines: the United States, with full knowledge of Pakistan's nuclear ambitions, was nevertheless supplying Pakistan with sophisticated weaponry and potentially nuclear-capable aircraft. Growing evidence of Chinese collusion in the Pakistani nuclear weapons program fueled Indian concerns.[60] Under these changed security circumstances India had to reevaluate its nuclear policies.[61]

ACQUIRING GREATER CAPABILITIES

In the early 1980s the clamor for the acquisition of a nuclear option grew as, ironically, U.S. sources increasingly provided evidence of Pakistan's quest for nuclear weapons and the Chinese supply of a nuclear weapons design to Pakistan.[62] India's bomb-making capabilities also expanded during this period.[63] Specifically, in February 1983 reports surfaced of India's ability to reprocess plutonium to weapons grade.[64] Also in 1983 the Defense Research and Development Organization (DRDO) was given increased funding and a new

59. For a discussion of the Soviet willingness to transfer advanced weaponry to India, see G.S. Bhargava, *South Asia after Afghanistan* (Lexington, Mass.: D.C. Heath, 1983).
60. William E. Burrows and Robert Windrem, *Critical Mass* (New York: Simon and Schuster, 1994).
61. See, for example, Jonathan Power, "Mrs. Gandhi's Nuclear Nuances," *International Herald Tribune*, December 18, 1981, p. 5.
62. K. Subrahmanyam, "Pak Bomb in Basement," *Times of India*, November 7, 1986, p. 5.
63. Suman Dubey, "India, Keeping Its Nuclear Options Open, Monitors Arms Program in Neighboring Pakistan with Concern," *Wall Street Journal*, November 26, 1984, p. 36.
64. Clyde H. Farnsworth, "India Now Producing Plutonium of Arms Grade at Bombay Plant," *New York Times*, February 21, 1983, p. 7.

mandate, the Integrated Guided Missile Development Program (IGMDP).[65] A space scientist, A.P.J. Abdul Kalam, who had previously worked for the civilian Indian Space Research Organization, was shifted to the DRDO and placed in charge of the IGMDP.[66] Kalam's transfer to the military component of India's rocketry program was significant, because he had a personal passion for the development of indigenous ballistic missile technology.[67] Indira Gandhi's faith in Kalam's ability was not misplaced. Under his leadership the DRDO developed and successfully test-fired India's first intermediate-range ballistic missile, the Agni (the name literally means "fire") on May 22, 1989, from a test range at Chandipore in the eastern coastal state of Orissa. Since then, the DRDO has developed a panoply of short- and medium-range ballistic missiles.[68]

In the wake of Indira Gandhi's assassination in October 1984, her son, Rajiv Gandhi, assumed the prime ministership. During Rajiv's tenure in office India pursued contradictory policies on the nuclear question.[69] On the one hand, he proposed a comprehensive plan for the gradual elimination of nuclear weapons, popularly referred to as the Rajiv Gandhi Action Plan. This plan, which he presented in an address to the UN General Assembly, called for the elimination of all nuclear arsenals by the year 2010. It spelled out particular stages and targets that were to be achieved by all nuclear weapons states and imposed reciprocal restrictions on all nuclear-threshold powers.[70] It is not entirely clear whether this proposal was merely symbolic or whether it represented a serious effort by the government to reclaim its Nehruvian roots. In the event, the great powers showed scant attention to the proposal. Also during Rajiv's term, India and Pakistan reached an accord not to attack each other's nuclear facilities.[71] This treaty was not formally ratified, however, until 1991.

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65. Significantly, these changes came about when allegations of Chinese nuclear assistance to Pakistan had gathered steam.
66. Chris Smith, *India's Ad Hoc Arsenal: Direction or Drift in Defence Policy?* (Oxford, U.K.: Oxford University Press, 1991), p. 201; and Burrows and Windrem, *Critical Mass*, pp. 372–373.
67. On this point, see Sunil Dasgupta, "A Quiet Launch," *India Today International*, June 30, 1994, p. 93.
68. Smith, *India's Ad Hoc Arsenal*, pp. 199–203.
69. A particularly thoughtful discussion of the contradictions in India's *declaratory* nuclear weapons policy can be found in Bhabani Sen Gupta, "The Nuclear Option: Ambivalent Stand," *India Today International*, May 31, 1985, p. 47. See also K. Subrahmanyam, "Indian Nuclear Policy, 1964–1998: A Personal Recollection," in Jasjit Singh, ed., *Nuclear India* (New Delhi: Knowledge World, 1998), pp. 26–53.
70. Rajiv Gandhi, "Address to the Third Special Session on Disarmament," United Nations General Assembly, New York, June 9, 1988.
71. Steve Coll, "India, Pakistan Pursue Peace by Creating Nuclear Standoff," *Washington Post*, December 29, 1990, p. A13.

On the other hand, despite this renewed attempt at multilateral diplomacy and some movement on the bilateral front with Pakistan, the scientific-military establishment received a considerable boost under Rajiv. A newspaper account based upon a conversation with M.R. Srinavasan, the chairman of the AEC and a prominent Indian antinuclear activist, confirmed that India had made substantial progress toward the acquisition of a nuclear weapons capability. Specifically, the report stated that India had stockpiled between 100 and 200 kilograms of plutonium, sufficient to build between twelve and forty weapons.[72]

Furthermore, a belated realization that hortatory efforts toward encouraging multilateral disarmament were next to meaningless influenced Rajiv's decision to boost India's nuclear capabilities. K. Subrahmanyam, a key participant in many of the critical decisions of India's nuclear weapons policy, argues along these lines in a work published shortly after the 1998 Indian nuclear tests. According to Subrahmanyam, it was under Rajiv Gandhi that India made the decision to acquire the missiles and other technology to form an effective nuclear deterrent.[73]

Rajiv's interest in India's military modernization may have also contributed to South Asia's first nuclear crisis in 1987, in the wake of a major military exercise code-named "Brasstacks."[74] The precise dimensions of the nuclear component of this crisis remain somewhat murky.[75] It is known, however, that toward the end of the crisis, in late January 1987, Abdul Qadeer Khan, widely known as the "father" of the Pakistani nuclear program, gave an interview to a prominent Indian journalist, Kuldip Nayar. In this interview, Khan made clear to Nayar that Pakistan had succeeded in producing weapons-grade uranium.[76] There is little or no question that the Indian political leadership took Khan's claim about uranium enrichment seriously.

THE 1990 CRISIS

Within three years India became embroiled in another crisis with Pakistan—one with an obvious nuclear dimension. This crisis, unlike the 1987 Brasstacks

72. Steven R. Weisman, "India's Nuclear Energy Policy Raises New Doubts on Arms," *New York Times*, May 7, 1988, p. 1.
73. Subrahmanyam, "Indian Nuclear Policy, 1964–1998," p. 44.
74. For a detailed description and analysis of the Brasstacks crisis, see Kanti Bajpai, P.R. Chari, Pervaiz Iqbal Cheema, Stephen P. Cohen, and Šumit Ganguly, *Brasstacks and Beyond: Perception and the Management of Crisis in South Asia* (New Delhi: Manohar, 1994).
75. See Lawrence Lifshultz, "Doom Thy Neighbour," *Far Eastern Economic Review*, June 4, 1998, pp. 30–34.
76. Steven R. Weisman, "Pakistan Stiffens on Atomic Program," *New York Times*, March 22, 1987, p. A4.

crisis, stemmed directly from the outbreak of a secessionist, ethnoreligious insurgency in the disputed state of Jammu and Kashmir.[77] Soon Pakistani infiltrators began crossing the porous border to join forces with the Kashmiri insurgents.[78] The dramatic rise in the incidence of violence within the Kashmir valley, the principal locus of the insurgency, is widely believed to have led Indian decisionmakers to consider deep strikes into Pakistani territory to destroy insurgent training camps and sanctuaries. Pakistani intelligence sources, it is asserted, learned of India's plans and, fearing a wider invasion, placed key portions of the Pakistani air force on alert. Pakistani decisionmakers also allegedly considered resorting to the use of nuclear weapons in the event of a concerted Indian incursion into Pakistan's heartland.[79] As the crisis peaked in May 1990, on the basis of reports from U.S. intelligence agencies, President George Bush sent Robert Gates, the deputy national security adviser, to India and Pakistan. In New Delhi Gates counseled restraint. In Islamabad he warned Pakistani decisionmakers that in every war-game scenario that the Pentagon had developed, Pakistan emerged as the loser. Consequently, he argued, it was not in Pakistan's interest to provoke India.[80]

In October President Bush invoked the Pressler amendment to the Foreign Assistance Act, stating that he could not certify to Congress that Pakistan did not possess a nuclear explosive device.[81] This conclusion led to a cutoff of the substantial U.S. economic and military assistance that had been flowing to Pakistan since the beginning of the civil war in Afghanistan.[82] Despite the

77. Šumit Ganguly, "Political Mobilization and Institutional Decay: Explaining the Crisis in Kashmir," *International Security*, Vol. 21, No. 2 (Fall 1996), pp. 76–107.
78. On Pakistan's involvement in the insurgency, see Edward Desmond, "Pakistan's Hidden Hand," *Time*, July 22, 1991, p. 23; and John Ward Anderson and Kamran Khan, "Pakistan Shelters Islamic Radicals," *Washington Post*, March 8, 1995, pp. A21–A22.
79. It is not entirely clear whether the Pakistani air force squadrons were equipped with nuclear weapons. The initial tocsin was sounded by Seymour Hersh in "On the Nuclear Edge," *New Yorker*, March 29, 1993, pp. 56–73. For a more temperate analysis of the crisis, see Stephen P. Cohen, "1990: South Asia's Useful Nuclear Crisis," paper presented at the annual meeting of the American Association for the Advancement of Science, Chicago, February 6–7, 1992, pp. 2–10. See also Michael Krepon and Mishi Faruqee, eds., *Conflict Prevention and Confidence-Building Measures in South Asia: The 1990 Crisis*, Occasional Paper No. 17 (Washington, D.C.: Henry L. Stimson Center, April 1994).
80. Mitchell Reiss, *Bridled Ambition: Why Countries Constrain Their Nuclear Capabilities* (Washington, D.C.: Woodrow Wilson Center Press, 1995).
81. The amendment, formally known as the International Security and Development Cooperation Act of 1985, required the president of the United States to certify that Pakistan did not possess a nuclear device.
82. Michael R. Gordon, "Nuclear Issue Slows U.S. Aid to Pakistan," *New York Times*, October 1, 1990, p. A3.

cessation of aid the Pakistani nuclear program proceeded apace, and the Chinese continued to support Pakistan's efforts to acquire nuclear weapons.[83] Within the next two years Pakistani political leaders as well as diplomats openly confirmed that Pakistan had acquired the ability to manufacture a nuclear bomb.[84] These developments were carefully noted in New Delhi.

Phase Five: The Collapse of the Security Guarantee

The final phase of the Indian nuclear program started in the aftermath of the Soviet collapse in 1991, which had profound implications for India's security and foreign policies. It meant the loss of the support of a veto-wielding power in the UN on the critical question of Kashmir. It also brought to an end a highly favorable arms-transfer relationship. But most important, from the standpoint of Indian security, it resulted in the loss of a critical counterweight to the Chinese threat: the security guarantee implied in the 1971 treaty with the Soviet Union disintegrated with the Soviet collapse; Russia is now too debilitated to provide much reassurance to India.

THE NONPROLIFERATION TREATY RENEWAL

In 1995 the NPT came up for its twenty-five-year review. The United States, one of the principal proponents of the NPT regime, sought an "unconditional and indefinite extension" of the treaty. India, which had chosen to stay outside the NPT regime, decided not to participate in the proceedings in New York during April–May 1995 and did not even seek observer status.[85] The Indian hope was that the United States would fail to cobble together a coalition that would unconditionally and indefinitely extend the treaty. Such expectations and fears were belied, as able and relentless American diplomacy ensured the achievement of the U.S. goal.[86] After the treaty was extended, only India, Pakistan, and Israel remained outside its scope. The U.S. success came as a

83. Steven A. Holmes, "China Denies Violating Pact by Selling Arms to Pakistan," *New York Times*, July 26, 1993, p. 6.
84. Stefan Wagstyl, "A Damaging Diversion," *Financial Times*, August 26, 1994, p. 7.
85. India's reservations about the NPT regime can be found in Rakesh Sood, "The NPT and Beyond," paper presented at a seminar entitled "Non-Proliferation and Technology Transfer," University of Pennsylvania, October 3–6, 1993, pp. 1–20. In this paper, Sood, the director of the Disarmament and International Security Division of India's Ministry of External Affairs, traces some of the early history of the NPT negotiations and discusses the possibilities of expanding the scope of the regime to address India's concerns.
86. Lewis A. Dunn, "High Noon for the NPT," *Arms Control Today*, Vol. 25, No. 6 (July/August 1995), pp. 3–9.

dramatic shock to the Indian security policy establishment, which now realized that India would come under acute pressure to sign the NPT or at least to agree to full-scope safeguards on its nuclear power plants, including those of indigenous origin.

THE BROWN AMENDMENT

In the fall of 1995 the Clinton administration sought to obtain some leverage over Pakistan to contain its quest for nuclear weapons. Specifically, the administration, in concert with Senator Hank Brown (R-Colo.), introduced legislation designed to override the provisions of the Pressler amendment. The Brown amendment allowed the provision of economic and some military assistance to Pakistan without any attached conditions. Despite vigorous opposition from senators committed to nonproliferation, the amended bill passed.[87]

THE "NEAR TEST"

The extension of the NPT and the passage of the Brown amendment, which led to a renewal of up to $368 million in U.S. military assistance to Pakistan, inevitably provoked Indian security concerns.[88] At one level, the Indian leadership under Prime Minister Narasimha Rao feared, justifiably or not, that the renewal of American arms transfers to Pakistan would lead to a larger U.S. security relationship with Pakistan. On another level the Indians were anxious about the pressures that would be brought upon them in the wake of the extension of the NPT. Additionally, moves toward the finalization of the Comprehensive Test Ban Treaty (CTBT) were also under way at the United Nations Disarmament Conference (UNDC) in Geneva. It is reasonable to infer that the Indian government believed that its window of opportunity was rapidly closing. It is in this politico-strategic context that Prime Minister Rao permitted the preparations for carrying out a nuclear test in December 1995.[89] The test was stymied when U.S. reconnaissance satellites picked up signs of activity at the test site and, in response, the U.S. ambassador to India, Frank Wisner, prevailed upon the infamously indecisive prime minister to call off the tests.[90]

87. Elaine Sciolino, "Despite Nuclear Fears, Senate Acts to Lift Pakistan Curbs," *New York Times*, September 22, 1995, p. 4.
88. Aziz Haniffa, "Arms for Pakistan Near Passage; India Hurt," *India Abroad*, November 3, 1995, p. 14.
89. The Indian "near test" of December 1995 decisively shows the fallacy of the "domestic imperatives" argument for the Indian tests of 1998. Obviously, the 1998 tests briefly boosted the BJP's domestic ratings. Larger security concerns propelled the BJP, however, just as they had driven the Narasimha Rao regime less than two years earlier.
90. Vipin Gupta and Frank Pabian, "Investigating the Allegations of Indian Nuclear Test Preparations in the Rajasthan Desert," *Science and Global Society* (1996), pp. 101–189. Some allegations also

THE CTBT LOOMS

In 1996, following two years of extensive negotiations, the CTBT process gathered steam in Geneva.[91] Although India had been one of the principal sponsors of the treaty in its initial form, it had three objections to the treaty as negotiated in Geneva. First, the Indians insisted that they would accede to the treaty only if the nuclear weapons states agreed to a time-bound plan for universal nuclear disarmament. For the most part, this position was little more than a ploy; Indian policymakers knew only too well that none of the nuclear weapons states would agree to this proposition. Consequently, the inevitable failure to include such a time-bound objective would give India the option to remain outside the treaty.

The second objection stemmed from the demand of some states that the treaty could come into force only after forty-four countries that had ongoing nuclear research and power facilities ratified the treaty. Again, although the argument against the "entry into force" clause was questioned on the grounds of fairness, India's interest in challenging the clause was purely pragmatic. As a state with an ongoing but largely untested nuclear weapons program, India would come under enormous pressure to accede to the CTBT.[92]

The third Indian objection was more substantive:[93] it dealt with the treaty's allowance of computer simulations of nuclear tests and hydronuclear tests. In the Indian view, the failure to close these two technological loopholes undermined the larger goal of taking steps toward the elimination of nuclear weapons. In the end, India could not block the reporting of the treaty from the UNDC to the General Assembly in New York.[94] Its efforts to modify the treaty text or to prevent its adoption by the General Assembly also proved fruitless. The treaty was passed on September 10, 1996, by an overwhelming majority of the member states.[95]

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suggest that India toyed with another nuclear explosion in early 1982. On this issue, see Shubharrata Bhattacharya, "Another Nuclear Blast at Pokhran?" *Sunday* (Calcutta), May 12, 1982, pp. 12–14.

91. For an analysis of India's negotiating stances at the UNDC, see C. Raja Mohan, "India and the CTBT: Time to Quit," *Hindu*, June 10, 1996, p. 11. For discussions of subsequent developments, see John F. Burns, "Old Foe of Atom Arms, India Now Blocks Test Ban," *New York Times*, August 17, 1996, p. 2; and Barbara Crossette, "India Vetoes Pact to Forbid Testing of Nuclear Weapons," *New York Times*, August 21, 1996, p. A1.

92. Stephen W. Young, "A Test Ban Treaty That Doesn't Ban Tests," *BASIC Reports* (Washington, D.C.: British-American Security Information Council, September 23, 1996), pp. 1–2.

93. K. Subrahmanyam, "The CTBT Puzzle," *Economic Times* (Bombay), June 8, 1996, p. 5.

94. Tarun Basu, "Nation Ignores Veiled Threats, Blocks CTBT," *India Abroad*, August 23, 1996, p. 4.

95. Jim Wurst, "Comprehensive Test Ban Overwhelmingly Adopted," *Disarmament Times* (New York, September 20, 1996), p. 1. The treaty passed with 158 votes in support, 3 opposed, and 5 abstentions.

Two factors explain the Indian shift from support to rejection of the CTBT. At one level, as has already been discussed, the Indians were acutely concerned about the "entry into force" clause and the likely effects of this upon their nuclear weapons program. The other concern dealt with the spate of Chinese nuclear tests just prior to China's accession to the CTBT. The Indian strategic community correctly inferred that the Chinese were willing to accede to the treaty only because they had reached such a level of competence in their weapons development that they felt no need to test further.[96]

RETURNING TO POKHRAN

The years 1997–98 proved momentous for India in terms of its domestic politics. Within the span of one year three different governments ruled the country.[97] With the collapse of the shaky United Front coalition government in December 1997, new national elections were called for February–March 1998. In these elections, the BJP emerged as the largest single party within parliament and, with the support of a number of regional parties, it assumed power.

The BJP's election manifesto had spoken of the perceived need to "induct" nuclear weapons into India's arsenal along with a "strategic review" of India's security environment. Most Western analysts, however, had dismissed the BJP's electoral promise as bluff and bluster meant for domestic political consumption.[98] Yet a more careful perusal of the BJP's public stance toward perceived security threats from Pakistan and China, as well as its position on defense spending and nuclear weapons, should have suggested otherwise.[99] Given the BJP's hawkish proclivities and the substantial scientific, military, and public support for the nuclear program, only a triggering event was necessary to propel the BJP to break from India's long-standing policy of nuclear abstinence.

This trigger came in the form of Pakistan's test of an intermediate-range ballistic missile, code-named Ghauri, on April 6, 1998. The Ghauri, built with either Chinese or North Korean technology, has a range of 1,500 kilometers and can carry a payload of 750 kilograms. Its range would enable Pakistan to

96. Seth Faison, "China Sets Off Nuclear Test, Then Announces Moratorium," *New York Times*, July 30, 1996, p. 4; and Sanjay Suri, "Chinese Test Seen behind Indian CTBT Stand," *India Abroad*, August 23, 1996, p. 8.
97. Šumit Ganguly, "India in 1997: Another Year of Turmoil," *Asian Survey*, Vol. 38, No. 2 (February 1998), pp. 126–134.
98. Tim Weiner, "Every Nation's Just Another U.S.," *New York Times*, June 7, 1998, p. 5.
99. See the section entitled "Our Nation's Security," in the BJP's 1998 election manifesto, http://bjp.org.

target twenty-six cities in India.[100] This new Pakistani capability reinforced prior perceptions in India about the deterioration of India's immediate security environment. For example, in 1997 even under the United Front government, the Ministry of Defense's annual report had expressed considerable misgivings about China's support for Pakistan's nuclear and ballistic missile programs as well as China's own growing ballistic missile capabilities.[101] Any remaining qualms about the wisdom of carrying out nuclear tests were set aside in the aftermath of the Ghauri test. Between May 9 and 10, 1998, Prime Minister Atal Behari Vajpayee informed key ministers and the highest-ranking bureaucrats as well as the three service chiefs of his decision to proceed with the nuclear tests.[102]

It is tempting to argue that a different Indian regime would not have acted with similar alacrity to the Ghauri test. To this question there can be no definitive answer. It is well known, however, that several previous governments had made careful preparations for a nuclear test. In fact, had U.S. reconnaissance satellites not discovered India's nuclear test preparations, it is likely that Prime Minister Narasimha Rao would have given the word to proceed in 1995.

Explanations of India's Nuclear Behavior

Three factors drove India's decision to test it nuclear weapons in 1998. The first was the incremental and fitful acquisition of the capability to manufacture nuclear weapons. This process was haphazard, discontinuous, and ridden with setbacks. Nevertheless, from the outset of the civilian nuclear program, Homi

100. A debate has arisen about the precise sources of the technology used in the manufacture of the Ghauri. Some argue that it is of Chinese origin. Others contend that it is based on North Korean technology. Muhammad Najeeb, "After Ghauri, It Is Long-Range Ghaznavi's Turn," *India Abroad*, April 24, 1998, p. 18; Pratap Bhanu Mehta, "India: The Nuclear Politics of Self-Esteem," *Current History*, Vol. 97, No. 623 (December 1998), pp. 403–406; and Tim Weiner, "U.S. and China Helped Pakistan Build Its Bomb," *New York Times*, June 1, 1998, p. A6. For a detailed discussion and analysis of the Chinese role in supporting Pakistan's nuclear and ballistic missile programs, see Nayan Chanda et al., "The Race Is On," *Far Eastern Economic Review*, June 11, 1998, pp. 20–22.

101. Ministry of Defense, *Annual Report, 1996–1997* (New Delhi: Government of India, 1997). See also International Institute for Strategic Studies (IISS), *The Military Balance, 1997–98* (London: Oxford University Press, 1997), p. 164.

102. One could well ask why the BJP did not simply declare India to be a nuclear weapons state without actually testing five nuclear devices. Two plausible answers can be suggested. First, India's nuclear weapons establishment would not feel that they possessed the requisite confidence in their weapons designs short of a series of tests. Second, if the press reports are accurate, one of the devices tested was thermonuclear. A thermonuclear device requires a nuclear triggering device. See Manoj Joshi, "Nuclear Shock Waves," *India Today*, May 25, 1998, pp. 12–20.

Bhaba harbored aspirations to make India a nuclear weapons state. His successors moved the program along to varying degrees, depending on their personal predilections and based upon political directions from New Delhi.

Second, the fitful movement toward a nuclear weapons capacity closely followed the shifting calculations of Indian leaders, who responded to a mix of ideology (initially a force for restraint), statecraft, and domestic pressures reflecting security concerns.[103] The evolution of the nuclear program and the 1998 tests were the product of calculated political choices based upon considerations of national security. Certain regimes and specific political leaders brought definite ideas about India's national security needs to office and acted upon those beliefs and assumptions. In large part, decisions, sometimes secret or subtle, made by Indian prime ministers advanced the nuclear weapons program without a full-fledged commitment to develop weapons.

The third factor was the perception of external security threats and the absence of security guarantees from friendly nuclear states. Perceived threats from China and Pakistan repeatedly accelerated the program, with the period of the Soviet security guarantee providing an interlude.

Many foreign and several Indian political commentators have dismissed the security imperatives underlying the Indian nuclear weapons program as well as the Indian tests, while privileging other explanations based on considerations of status, prestige, and the short-term exigencies of domestic politics.[104] Worse still, much of the conventional wisdom dismisses India's felt security needs and blithely asserts that India would be better off without nuclear weapons. The purveyors of this perspective, with important exceptions, had evinced little or no interest in India's security concerns prior to the nuclear

103. Ideological beliefs, on occasion, acted as forces for restraint. For example, Prime Minister Morarji Desai, a staunch Gandhian, opposed India's development of nuclear weapons. The BJP-led government that came to power in March 1998, however, included a number of individuals who believed that the acquisition of nuclear weapons was critical to India's security. On Desai's beliefs, see Kapur, *India's Nuclear Option*.

104. For an Indian feminist critique of the tests, see Madhu Kishwar, "BJP's Wargasm," *Manushi* (New Delhi), No. 106 (May–June 1998) available at <<http://www.arbornet.org:81/~radhika/manushi/issue106/wargasm.html>>. For other dissenting voices from India, see Vinod Mehta, "How a 'Tired' PM Became a 'Bold' PM," *Outlook* (New Delhi), June 8, 1998, pp. 28–29. For an extraordinarily shallow American analysis of the dynamics of Indian politics ridden with factual errors, see Peter Beinart, "The Return of the Bomb," *New Republic*, August 3, 1998, pp. 22–27. In this article, for example, the author asserts that Prime Minister Narasimha Rao attempted to revive secularism in India. In fact, he did nothing of the sort. It was during his tenure in office that Hindu fanatics destroyed the Babri mosque in Uttar Pradesh on December 6, 1992. Rao also did little to control the anti-Muslim rioting that followed in the wake of the mosque's destruction.

tests.[105] Yet ample evidence suggests that India's security misgivings did play an important role in the evolution of the program as well as in precipitating the nuclear tests of May 1998.

Indeed, most of the explanations proffered to date for the tests are inadequate in part because they disregard one or more of the fundamental elements I have discussed. One argument suggests that the decision to carry out the tests can be directly attributed to the rise of the BJP to dominance in India's government in March 1998.[106] The argument holds that the BJP leaders, many of whom are virulently anti-Pakistani, wish to craft a strong, virile India to dominate the subcontinent. The demonstration of India's nuclear capability would send a message of India's enormous military power and prowess to its long-term adversary and recalcitrant neighbor and, in turn, would instill a degree of Pakistani restraint on the nettlesome Kashmir dispute. This argument has some merit but is nevertheless inadequate. Segments of the BJP leadership do have a profoundly chauvinistic bent and are indeed enamored of India's nuclear status. Moreover, the BJP election manifesto explicitly states that one of the party's intentions upon assuming power was to "induct nuclear weapons" into India's arsenal.[107] Yet this argument ignores two critical pieces of evidence. First, the BJP government was heir to the huge scientific-military nuclear infrastructure that previous regimes of vastly divergent political persuasions had forged. The BJP-led government could not have carried out the May tests in the absence of this well-established nuclear program. Second, this argument ignores India's perceived security threats from growing Chinese military capabilities and arms transfers to Pakistan. The most immediate provocation, of course, was Pakistan's launch in March 1998 of the Chinese-assisted Ghauri missile. The only compelling feature of this argument is that it underscores the BJP's more aggressive stance on questions pertaining to national security.

A second argument holds that India's 1974 and 1998 tests were conducted to divert attention from the nation's crippling social and economic problems

105. An important exception is Stephen P. Cohen, "India's Strategic Misstep," *New York Times*, June 3, 1998.
106. The pioneering study of the BJP's origins, ideology, and organization remains Bruce Graham, *Hindu Nationalism and Indian Politics: The Origins and Development of the Bharatiya Jana Sangh* (Cambridge, U.K.: Cambridge University Press, 1990). See also John Cherian, "The BJP and the Bomb," *Frontline* (Madras), April 24, 1998, pp. 4–9.
107. On this point, see the BJP's 1998 election manifesto.

and to bolster the sagging fortunes of the ruling party.[108] This argument clearly has some merit if one focuses on the *timing* of the 1974 test. Prime Minister Indira Gandhi did face a number of apparently intractable domestic problems that had eroded her popularity after the 1971 war against Pakistan. Consequently, the popularity of the nuclear test did provide her a brief political respite. Nevertheless, this argument is far from unproblematic. It can explain the occurrence of a discrete event but cannot account for the long-term investments in nuclear infrastructure that enabled her to order the nuclear test. Even worse, those who resurrect this argument to account for the 1998 tests demonstrate remarkable insensitivity to the nuances of the contemporary Indian political landscape. The BJP-led government could hardly use this dramatic demonstration of India's nuclear capabilities to cement its ties with its fractious parliamentary allies. The coalition's differences stem from the quintessentially regional and parochial concerns of its members, cleavages that the nuclear decision will do little, if anything, to contain.

A third argument posits that the tests reflect India's attempt to meet its unrequited goals for prestige and status in the international system.[109] The exponents of this view hold that India has long sought and failed to find adequate recognition of its status in global affairs. Indian decisionmakers, according to this logic, feel slighted by the most powerful states in the international community despite India's size, economic potential, and civilizational heritage. The tests, it is contended, were designed to confer on India great power status. As Indians themselves have argued, it is no accident that the five permanent members of the UN Security Council possess nuclear weapons. But this argument fails to explain why previous regimes had not taken the same decision. If India's ebbing prestige had so concerned its elites, the tests should have come much earlier, especially in the waning days of the Cold War, when the country found itself adrift in the international order.[110]

A fourth argument suggests that members of the scientific-bureaucratic establishment infused nuclear weapons with an almost mythical status, because they *believed* that nuclear weapons would enhance India's security. On

108. See the argument developed about the motivations underlying the 1974 test in Scott D. Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," *International Security*, Vol. 21, No. 3 (Winter 1996/97), pp. 65–69. On the 1998 tests, see Mehta, "How a 'Tired' PM Became a 'Bold' PM."
109. Amitav Ghosh, "Countdown," *New Yorker*, October 26–November 2, 1998, pp. 186–197.
110. Šumit Ganguly, "South Asia after the Cold War," *Washington Quarterly*, Vol. 15, No. 4 (Autumn 1992), pp. 173–184.

the other hand, they could not causally demonstrate how India's security would be greater through their acquisition.[111] As Peter Lavoy argues, "The identity, skill, and political power of the proponents of these myths . . . also play a crucial role in shaping policy."[112] This argument, however, overlooks the structure of political decisionmaking in India. There is little question that it was under the tutelage of Homi Bhaba that the foundations of India's nuclear infrastructure were put in place in the first two decades after independence. But not all of his successors shared his level of enthusiasm for the acquisition of nuclear weapons. Some willingly followed the directions of their political masters in New Delhi; others were opposed to the development of nuclear weapons and made few efforts to boost India's weapons program.[113] Thus the scientific-bureaucratic community did constitute a significant pressure group. They protected the program from an excess of scrutiny and, on occasion, sought to mythologize the significance of nuclear weapons. However, the fundamental political decisions and strategic choices remained in the hands of political leaders in New Delhi, not in those of "mythmakers" in the AEC.

Conclusion

Two key questions confront India's political leadership. First, where are India's nuclear and ballistic missile programs headed? Unfortunately, few scholars or security analysts have devoted much thought to the development of a strategic doctrine for India.[114] Only now, in the wake of the abrupt decision by the BJP government to test, have India's strategic minds begun to grapple with this difficult issue. In the absence of a clear-cut strategic doctrine, domestic scientific and technological capabilities and bureaucratic pressures are likely to drive the Indian nuclear and ballistic missile programs. Thus far, the political

111. Peter Lavoy, "Nuclear Myths and the Causes of Nuclear Proliferation," *Security Studies*, Vol. 2, Nos. 3/4 (Spring/Summer 1993), pp. 192–212.
112. Peter Lavoy, "South Asian Military Programs: Characteristics, Trends, Implications," paper presented at a conference entitled "The Impact of the South Asia Nuclear Crisis on the Nonproliferation Regime," Carnegie Endowment for International Peace, Washington, D.C., July 16, 1998.
113. For the views of the second chairman of the AEC, Vikram Sarabhai, about nuclear weapons and disarmament, see Sarabhai, "Security of Developing Countries," in Kamla Chowdhry, ed., *Science Policy and National Development* (New Delhi: Macmillan, 1974). For the divergent views of various AEC chairmen, see Raja Ramanna, *Years of Pilgrimage: An Autobiography* (New Delhi: Penguin, 1991).
114. George K. Tanham, *Indian Strategic Thought: An Interpretive Essay* (Santa Monica, Calif.: RAND, 1992). For a thoughtful discussion of a possible strategic posture for India in the aftermath of the nuclear tests, see Kapil Kak, "Strategic Template for Nuclear India," *Times of India*, August 11, 1998, p. 6.

leadership and most sections of India's strategic community have eschewed any interest in developing a second-strike capability. Instead they have argued that a "minimum deterrent" of some thirty to forty bombs that can be delivered by air would constitute a sufficient deterrent.[115]

Second, would such a deterrent suffice against potential Chinese and Pakistani threats and contribute to stability in the region? Despite U.S. and other international pressures, for now neither India nor Pakistan is likely to eschew its nuclear weapons program. Consequently, instead of focusing upon unrealistic and chimerical goals, it may be more useful for all parties to discuss ways to bring some stability to the region. Three distinct forms of stability—strategic stability, crisis stability, and arms race stability—deserve discussion.

Strategic stability occurs when both sides are assured that each has a secure second-strike capability—that is, adequate numbers of invulnerable nuclear weapons to inflict unacceptable damage after sustaining a nuclear attack. Crisis stability exists when neither side fears a preemptive strike. And finally, arms race stability reigns when neither side has concerns that its adversaries are trying to build weapons that undermine either strategic or crisis stability.[116]

To what extent do these conditions now obtain on the subcontinent?[117] India's concerns in these three realms involve two potential adversaries, China and Pakistan. Strategic stability does exist between India and Pakistan. Neither side can be certain that its extant capabilities will enable it to carry out a decapitating first strike. Consequently, a condition of mutual vulnerability will exist. Similarly, crisis stability is also likely to endure because neither side would be confident of destroying a substantial portion of the other's forces in a preemptive strike. The question of arms race stability is more vexing. The growth of ballistic missile capabilities on both sides may endanger strategic or crisis stability. Consequently, one of the principal priorities of the proponents of nuclear nonproliferation should be the development of measures to ensure arms race stability. To this end, India and Pakistan need to discuss missile production and deployment issues and move toward the creation of an arms control regime.

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115. Raj Chengappa and Manoj Joshi, "Future Fire," *India Today International*, May 25, 1998, pp. 22–24. See also Kapil Kak, "Command and Control of Small Nuclear Arsenals," in Singh, *Nuclear India*, pp. 266–285.

116. On this point, see the discussion in Leon V. Sigal, "Warming to the Freeze," *Foreign Policy*, No. 48 (Fall 1982), pp. 54–65.

117. I am grateful to Ashley Tellis of RAND for suggesting the application of these categories to the subcontinental nuclear context. The particular interpretations developed in this article are mine, however.

India's conventional forces are more than a match for China's capabilities. China's substantial nuclear and ballistic missile capabilities present problems for Indian defense planners, however. The current Sino-Indian relationship fails to meet the demands of strategic stability. India does not yet possess ballistic missile capabilities to target significant Chinese military or civilian assets. China, on the other hand, can inflict unacceptable damage on India. Crisis stability may be a bit stronger in this relationship, however. Given the acute secrecy surrounding the Indian nuclear weapons program and its dispersed assets, few Chinese decisionmakers would contemplate a disarming preemptive strike. India, on the other hand, lacks the capability to similarly strike China. Finally, arms race stability between India and China is also problematic. The Chinese already possess intermediate-range ballistic missiles that can target portions of the Indian heartland.[118] India, in turn, is developing the Agni II, which would be able to reach targets in southern China. The extant Chinese capabilities and incipient Indian capabilities threaten arms race stability. Thus, once mutual recriminations about the nuclear tests subside, it is imperative that India and China start discussions in conjunction with Pakistan about future force levels, deployments, and acquisitions. Now that the nuclear genie has escaped the bottle in South Asia, an arms control regime that involves China may offer the best hope of containing the genie's reach.[119]

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118. IISS, *The Military Balance, 1997–98*.
119. For a thoughtful discussion of Chinese perspectives on arms control prior to the conclusion of the CTBT negotiations and the Indian nuclear tests, see Banning N. Garrett and Bonnie S. Glaser, "Chinese Perspectives on Nuclear Arms Control," *International Security*, Vol. 20, No. 3 (Winter 1995/96), pp. 43–78.