Chapter Three

ASSESSING ALTERNATIVE INDIAN NUCLEAR POSTURES

This analysis has thus far suggested that a variety of external and internal pressures will force a shift in India’s nuclear posture in the years ahead. The May 1998 tests, in fact, represented merely the beginnings of change, and the culmination of this sequence is not yet clear despite the many rhetorical flourishes that have issued from New Delhi. At the same time, even if India were to move further in the direction of weaponization, as the last chapter suggested will be the case, it is worth remembering that weaponization represents not a step but a process. This process embodies many constituent moves, some of which may be unobservable to casual viewers both in India and abroad and many of which will actually be disguised even as they occur. The very prospect of such movement, however, has energized the United States; operating on the assumption that weaponization in any form is deleterious to South Asia’s stability, U.S. diplomats and policymakers have begun earnest discussions with their Indian and Pakistani counterparts in the hope first that weaponization itself may be eschewed and ultimately that the nuclear programs themselves will be terminated in both countries.1

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1This intention has been expressed most clearly in John Holm’s speech to the Defense Special Weapons Agency (DSWA) International Conference on Controlling Arms, Philadelphia, Pennsylvania, June 10, 1998, available at http://www.acda.gov/speeches/holm/dswahol.htm. For a later statement, see Ramesh Chandran, “U.S. Has Not Accepted India’s Need for Nuclear Deterrent: Holm,” The Times of India, December 11, 1999, which quotes Holm as stating that “the U.S. has not accepted the idea that India needs to have a credible minimum nuclear deterrent in its arsenal. . . . A core point of our dialogue with India has been our belief that every country determines its own security requirements. But we think that from our perspective,
These objectives, consistent as they are with the larger U.S. interest in nonproliferation, once again raise the question of the choices facing New Delhi (and, for that matter, Islamabad). This chapter seeks to identify and assess the various strategic nuclear options facing New Delhi, some of which entail weaponization and some of which do not. The purpose of this exercise is primarily heuristic but nonetheless has important policy-related implications. By analyzing the full range of alternatives facing India, it seeks to understand which choices remain fundamentally unacceptable to New Delhi and why, and which options will be pursued in the future and how. Therefore, scrutiny of even those alternatives already rejected by South Block is necessary because it sheds light on how India will orient its preferred choices to service those problems which made the discarded alternatives unacceptable to begin with. Only then will it be possible in any analytical sense to identify what the operational predicates of India’s preferred future posture will be.

In consonance with this logic, this chapter identifies five distinct nuclear postures from amid a continuum of possibilities, each with varying degrees of acceptability to India (see Figure 1). These postures, referring to critical equilibrium points along that continuum, are conceived primarily as Weberian “ideal types.” An ideal type, in Weber’s sociology, is an artificially created mental construct that attempts to order diffuse and complex phenomena by isolating and accentuating certain key characteristics into a distinct but internally consistent conceptual representation. Each of the alternatives described below therefore focuses on making explicit the “unique particularity” inherent in a given nuclear posture and, as such, remains an “exaggerating abstraction” created by systematically isolating one unique facet of that posture and carrying it to its logical

India’s security requirements are . . . best served without a nuclear capability. . . . [Consequently, the United States does not] acquiesce in or accept [India’s emerging nuclear capability].” It is still not clear whether remarks such as these are meant to communicate the “true” and perhaps hidden contours of U.S. policy toward India (and Pakistan, for that matter) or whether they are intended mainly to signal to the international community that, whatever accommodation Washington may reach with India and Pakistan, the United States remains committed to upholding the architecture of the global nonproliferation regime. At the very least, they signal that the Clinton administration had not conclusively resolved the internal debates between the nonproliferation and regional bureaucracies with respect to American strategies for dealing with India’s nuclear weapon program.
### Denuclearization vs. Nuclearization

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Figure 1—Alternative Indian Nuclear Postures

extreme. Consequently, the five alternatives—when treated separately—are heuristic fictions but are nonetheless necessary fictions insofar as they provide a means of identifying the range of choices open to India, analyzing the extent of change likely in India’s future posture, and explicating the content through which such change might be manifested.

**Alternative I: Unilaterally renounce the nuclear option after obtaining positive and negative security guarantees.** This alternative implies that India would formally “give up” its sovereign right to develop a nuclear arsenal after (1) obtaining from each declared nuclear power negative security guarantees—i.e., that nuclear weapons would never be used against India; and (2) obtaining from at least some of the existing nuclear weapon states positive security guarantees—i.e., that a nuclear umbrella would protect India in the event of a nuclear threat. India’s formal renunciation of the option to create a nuclear arsenal would not necessarily entail actually signing the NPT, even though in principle that remains Washington’s long-term goal. Indeed, India could decline to become an NPT signatory, thereby

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symbolically affirming its traditional concerns about legitimizing nuclear inequality. This alternative would, however, require that India place all of its nuclear facilities under safeguards and subject its entire fissile-material inventory to strict accounting. Alternative I would therefore appear to make India a de facto signatory to the NPT even if it chose to formally remain outside what it considers to be a discriminatory regime. In a strict sense, however, this alternative does not actually do so because the renunciation it demands does not involve any legal commitments to the international community to eschew the production of nuclear weapons; it simply involves a national decision to renounce the development of nuclear arms, with the accession to international safeguards being primarily a guarantee of good faith on New Delhi’s part. Alternatively, India could simply choose to sign the NPT as a non-nuclear weapon state, but because this would imply a symbolic acquiescence to an “unequal” global regime, the weaker of the two variants is selected for consideration here.

Alternative II: Orchestrate a regional nuclear control regime that obviates the need for developing a nuclear arsenal. This alternative would also require that India renounce its right to develop operational nuclear capabilities, but such a renunciation would not be unilateral. Instead, it would be part of a regional nuclear management regime that would aim to reduce the threat each of the participating countries—India, Pakistan, and China—posed to each other and, to the degree possible, reduce the costs of a potentially open-ended arms race, especially between India and Pakistan. This alternative, which has been conceptualized as viable “in conjunction with some definite moves on the global scale toward substantial nuclear arms reduction and disarmament,” would require negotiated and verifiable agreements that committed both India and Pakistan to eschewing the development of nuclear weaponry while simultaneously constricting both the pattern and type of Chinese nuclear deployments in proximity to the subcontinent. Such a limited nuclear arms

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3 This and other variants of nuclear foreclosure are discussed in P. R. Chari, “India’s Nuclear Option: Future Directions,” in P. R. Chari, Pervaiz Iqbal Cheema, and Iftekharuzzaman (eds.), Nuclear Non-Proliferation in India and Pakistan (New Delhi: Manohar, 1996), pp. 60–86.

control regime could consist of either multiple bilateral arrangements or a single trilateral agreement that in effect binds all three states to the maintenance of a South Asian nuclear-free zone supported, if necessary, by security guarantees and/or other political commitments from the other nuclear powers. Strictly speaking, this nuclear-free zone would result only in India’s and Pakistan’s eschewing the production and deployment of nuclear weaponry; China would remain a nuclear weapon state but would undertake binding obligations that would diminish the nuclear threat it posed to India in the context of an overall resolution of the current Sino-Indian territorial dispute. China’s residual nuclear capabilities would then by implication be reserved only for contingencies involving the United States and Russia and their treaty-bound allies in Asia. While a nuclear-free zone of this sort has never been formally tabled for discussion at the diplomatic level, the idea that this alternative embodies has been advocated by some Indian analysts who oppose nuclearization. It also underlies the occasional calls that have emerged for a “five-party or multilateral conference” on nuclear issues in South Asia, and it therefore merits consideration as a nonunilateral option to Alternative I.

Alternative III: Maintain the nuclear option *qua* option indefinitely. This alternative simply requires that India maintain the status quo as it existed prior to May 11, 1998, without any revision. Under this alternative, India would neither exercise its option to create a nuclear arsenal nor renounce its sovereign right to develop such an arsenal in circumstances of grave national danger. Maintaining the nuclear option implies that India would continue to produce weapons-grade plutonium at the relatively low rates it has in the past; engage in theoretical work relating to nuclear weapon design and perhaps continue to develop or even produce the nonnuclear SAF mechanisms required by a nuclear weapon; and research and develop various delivery systems as technology demonstrators. This

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7 The logic and limitations of these calls have been discussed in Chari, *Indo-Pak Nuclear Standoff*, p. 82ff.
alternative also implies, however, that India would not create an arsenal of standardized, completed nuclear weapons; deploy dedicated nuclear delivery systems; configure dual-use systems for nuclear delivery; or develop the supporting infrastructure necessary for preplanned nuclear operations. Such an approach would no doubt result in the creation of certain latent capabilities but, from the perspective of nuclear operations, would embody the potential for a nuclear arsenal rather than a ready capacity for discrete nuclear use or sustained nuclear war fighting.

By constituting the entry point to that part of the decision spectrum pertaining to nuclearization, Alternative III can be seen to possess a certain fuzzy and uncertain quality. This is because “maintaining the option”—understood as “continuing the . . . nuclear ambiguity despite its unsatisfactory aspects”\(^8\)—essentially involves a posture that cannot be independently verified save for its more obvious elements, such as producing and deploying dedicated nuclear delivery systems. Nonetheless, this alternative may be summarized as denoting a posture best described by the phrase “no operational nuclear force.” As such, it constitutes an equilibrium point worthy of examination because it can resolve some kinds of strategic problems facing India and because it appears to have been a relatively stable political preference for most of the post-1974 period.

Alternative IV: Develop a “recessed deterrent” as part of maintaining a credible option to create a full-fledged nuclear arsenal if required. This alternative requires that India move beyond simply maintaining a set of latent, and in some areas embryonic, nuclear capabilities. Instead, it would place India on a path leading to the development of a nuclear arsenal without actually arriving at that goal. This alternative presumes that effective nuclear capabilities derive not merely from the possession of a small number of nuclear weapons but rather from an integrated capability that includes actual nuclear weapons and their delivery systems as well as supporting technologies such as a C\(^3\)I apparatus, procedural systems that regulate the custody and release of nuclear weapons, and ideational systems that define the doctrines governing both the acquisition and

\(^8\)Ibid., p. 82.
use of nuclear weapons as well as strategies for war termination. As such, Alternative IV would require that India put in place the plans, procedures, and organizations that are necessary for effective nuclear operations in an emergency; for example, it would permit the continued design and cold testing of nuclear weapons and their components under laboratory conditions and would allow for the continued design and testing of various delivery vehicles. At the same time, however, it would prohibit the fabrication of completed nuclear weapons, the production and/or deployment of dedicated or dual-capable nuclear delivery systems, and the mating of weapons with delivery systems that are then maintained even at low levels of readiness. In effect, Alternative IV would bequeath on India an incipient nuclear capability that would derive from its having developed the various parts necessary for an effective deterrent, but it would not produce a standing force capable of carrying out nuclear operations immediately. This alternative may thus be summarized as denoting a posture best described by the phrase “operational nuclear force available in months” in that its effectiveness derives from the fact that it could be constituted into a viable nuclear arsenal under deteriorating political circumstances—and because this capability is recognized as such, it can serve to deny even stronger adversaries the freedom to use their strength exploitatively.  

**Alternative V: Initiate development of a robust and ready nuclear arsenal immediately.** This alternative would carry the strategy of maintaining recessed nuclear capabilities to its maximal conclusion. Under this posture, India would in effect work toward acquiring the kinds of nuclear capabilities the declared nuclear powers possess

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9 As early as 1957, Henry Kissinger noted in his seminal work *Nuclear Weapons and Foreign Policy* (New York: Harper & Brothers, 1957), p. 197, that “it is important to distinguish . . . between the possession of nuclear weapons and their strategic effectiveness. By themselves, nuclear weapons have a considerable nuisance value. But, unless they are coupled with sophisticated delivery means, highly complex communications systems and appropriate tactics, it will be difficult to utilize them effectively. Unless the whole military establishment is geared to nuclear tactics, nuclear war becomes a highly dangerous adventure.”

10 One variant of this alternative has been advocated most persuasively by one of India’s most respected strategic commentators, Jasjit Singh, in his essay “A Nuclear Strategy for India,” in Jasjit Singh (ed.), *Nuclear India* (New Delhi: Knowledge World, 1998), pp. 306-324.
and would create a sizable inventory of nuclear weapons with varying yields ready for immediate use when sanctioned by the national command authority. This alternative may in fact be summarized by the phrase “ready and operational nuclear force available now.” Having such capabilities implies that the relevant delivery systems, be they aircraft or missile, would be acquired as well and that such systems would be readily available for any combat missions together with all the diverse enabling capabilities that are necessary to transform a nuclear weapon stockpile into a credible nuclear arsenal. By further implication, this alternative would require that India’s nuclear deterrent be “militarily serviceable”\(^1\) and thus within the immediate reach of the armed services, who would maintain it at the high levels of readiness demanded of any technology intended for the conduct of prompt operations. Possessing such a robust set of capabilities, however, does not necessarily imply that the arsenal would be visible and transparent. To the contrary, these capabilities, even when acquired, could well be hidden under a veil of opacity. Consequently, it is important to distinguish between the fact of an arsenal’s existence and its disposition; while the creation of an arsenal in the systemic sense understood above would present several telltale signs that disclosed its existence, it could still remain highly enigmatic with respect to its force architecture, doctrinal underpinnings, and command-and-control arrangements—especially in their details. Therefore, the creation of the full-fledged, fully deployed nuclear arsenal that this alternative entails does not require that India reveal its force structure and deterrence doctrine (although neither of these alternatives is precluded) even if it has already proclaimed itself to be a “nuclear weapon state.”

Assessing India’s future direction on the basis of the alternatives presented above requires an analysis of how New Delhi would view each option in the context of three specific criteria. First, does the specified alternative increase India’s security? Security in this context would imply enhancing India’s physical safety and decisional autonomy, which in turn speaks to the question of managing current as well as future threats that may result from the selection of a given alternative. Second, does the specified alternative bequeath strategic

flexibility to India's security managers? Strategic flexibility in this context implies the ability to change or even reverse course at a relatively low cost should the exigencies of international politics so demand. Third, does the specified alternative promise to improve India's status? Status in this context implies at least preserving, if not bettering, the country's relative standing in international politics.

ALTERNATIVES INVOLVING DENUCLEARIZATION

Viewed in the context of the three questions posed above, Alternatives I and II are greeted with skepticism in New Delhi today. By contrast, the United States—driven by a desire to buttress the global nonproliferation order—still espouses a policy that is at least formally anchored in encouraging India and Pakistan to adopt one or the other of these alternatives. And while the intensity of this pressure has varied as a function of the personalities on both sides, the political atmosphere in South Asia, the competing demands on Washington's time and attention, and the overall status of U.S.-Indian (and U.S.-Pakistan) relations, the United States remains committed, at least in principle, to shepherding both India and Pakistan into joining the NPT regime as non-nuclear weapon states. To be sure, there have been many changes with respect to how this goal has been pursued over the past decade, but America's general commitment to it is a logical by-product of its desire to preserve a robust global nonproliferation order—a desire that is reinforced by the belief that nuclear weapons do little to resolve and much to exacerbate the security challenges facing India (and, for that matter, Pakistan). 12 New Delhi, as might be expected, disagrees vehemently with this judgment, but most Indian analysts have failed to systematically assess precisely how nuclear capabilities can enhance (or subvert) the three objectives—security, flexibility, and status—identified earlier. To the contrary, most local analysts have simply been content to assert the benefits of nuclear weaponry without in any way attempting to determine whether these benefits are uniform or, given India's grand strategic objectives, are worth the trade-offs

they demand.\textsuperscript{13} When a systematic analysis of the kind conducted below is completed, however, it becomes evident that New Delhi may have good reasons to reject denuclearization, although these reasons are much narrower than commonly supposed and are in fact somewhat ambiguous on the margins.

Alternative I: Renounce the Nuclear Option

To begin with, Alternative I—although generally mocked within India as an idealistic Gandhianism that has no place in modern international politics—does not subvert the three criteria identified above as readily as is often imagined. This is particularly true if this alternative, once adopted, is accompanied by the striking of certain strategic bargains with existing nuclear powers such as the United States and Russia, which have a substantial stake in maintaining a stable global nonproliferation regime. Before Alternative I is even contemplated, however, New Delhi must assume a number of characteristics of the international system to be increasingly valid. First, New Delhi must assume that nuclear weapons are of decreasing value in the international arena and that all actions furthering this trend—including its own—are by definition in its national interests. This perception would enable New Delhi to realistically expect Pakistan to renounce its nuclear option in tandem with India, thereby diminishing the range of threats India faced even if not quite eliminating them. Second, New Delhi must assume that nuclear weapons have real utility only in situations where the homeland of a state is threatened, and not as instruments for the extraction of political concessions. This expectation would allow India to see nuclear weapons in the hands of its potential adversaries as being less useful than is often feared, thereby permitting New Delhi to proceed with

\textsuperscript{13}Oddly, serious analyses of this kind today have been undertaken mostly by Indian “doves” who invariably conclude that India’s security, far from being enhanced, is only compromised by its acquisition of nuclear weapons. For good examples of such work, see Kanti Bajpai, “Secure Without the Bomb,” \textit{Seminar}, 444 (August 1996), pp. 57–60, and Kanti Bajpai, “The Fallacy of an Indian Deterrent,” in Amitabha Mattoo (ed.), \textit{India’s Nuclear Deterrent} (New Delhi: Har-Anand Publications, 1999), pp. 150–188. The few exceptions at the other end of the Indian political spectrum are Nair, \textit{Nuclear India}, and Karnad, “A Thermonuclear Deterrent,” pp. 108–149, where the differences in premises and logic vis-à-vis the arguments of the Indian doves are clearly evident.
its act of renunciation with far less “fear and trembling” than might otherwise be the case.

At present, however, many influential Indian strategic analysts are not convinced that either of these conditions applies. On the first issue, for example, K. Subrahmanyam has emphatically argued that nuclear weapons continue to be the “currency of global power”—and that although these weapons “are not military weapons” in the conventional sense, their value derives precisely from the fact that they are instruments of high politics and are therefore the means by which power and prestige are allocated in the global order. Consequently, Subrahmanyam notes, India has no choice but to acquire these weapons to the extent that it “wants to be a player and not an object of this global nuclear order.”14 On the second issue, another prominent Indian analyst, Bharat Karnad, has argued that irrespective of whether nuclear weapons have operational utility for war fighting, they are eminently useful for what Carl von Clausewitz once called “such warfare as consists in a mere threatening of the enemy and in negotiating.”15 So long as nuclear weapons are seen to retain their utility for such forms of strategic coercion—an issue that greatly exercises Indian analysts of all political stripes—the likelihood that the country will endorse denuclearization, either unilaterally or regionally, becomes highly remote.

In any event, and irrespective of whether these two expectations obtain among policymakers in New Delhi, a potential decision on India’s part to renounce its nuclear capabilities would be plausible only if it were accompanied by several strategic, albeit perhaps tacit, agreements with important actors like the United States and Russia to the effect that New Delhi would be given preferential access to political and financial resources as well as to a range of advanced civilian, dual-use, and military technologies. To be effective, these technologies should not only allow India to adequately defend its national interests in the absence of nuclear weapons but also enable it to improve its relative power position in the international arena. At

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15Cited in Bharat Karnad, “Politics of ‘Militarised’ States,” Hindustan Times, January 22, 1983. This article also has an extensive discussion on the utility of nuclear weapons for strategic coercion.
the very least, then, access to such resources and technologies must enable India to advance its developmental goals more efficiently than before. Moreover, if such an outcome is to be consummated, it must be reinforced by India’s accretion of increased status in international politics and by greater accommodation of its preferences in those great-power activities which affect New Delhi’s interests and sensitivities. Indeed, only a “grand bargain” of this sort—i.e., one that trades India’s renunciation of nuclear weapons for both positive and negative security guarantees as well as enhanced access to great-power resources in the form of either a seat on the U.N. Security Council or preferential access to high technology—would stand some chance of securing India’s consideration.\(^{16}\) Whether New Delhi would ultimately find such a bargain acceptable, however, is unclear. Thus, it is worth exploring whether a unilateral renunciation of nuclear weapons—in the form described earlier and accompanied by just such bargains—would be deleterious to India’s security, its desire for strategic flexibility, and ultimately its status.

**Security Considerations.** It is clear that both now and in the foreseeable future, India will face only two major strategic threats: a nuclear-armed Pakistan and a nuclear-armed China. To be sure, some Indian strategists have argued that nuclear developments in more remote areas like the Middle East and Northeast Asia—as well as those of the established nuclear weapon powers, especially the United States—may affect Indian security as well.\(^{17}\) However, these claims are generally somewhat tenuous, based as they are on the theoretically plausible but practically inconsequential proposition that “anarchy is seamless.” In fact, the best theoretical work that has addressed this issue has concluded that “security complexes” defined by regional amity-enmity considerations will continue to be the principal drivers of threat planning—and that although more

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\(^{16}\) Such a deal has, in fact, been proposed by two American scholars. See Harrison, “Cut a Regional Deal”; Harrison, “The United States and South Asia: Trapped by the Past?”; and Stephen P. Cohen, “A Way Out of the South Asia Arms Race,” *Washington Post*, September 28, 1992. Another American scholar argued that the opportunities offered by formally accepting nonproliferation for the attainment of (nonnuclear) great-power capabilities remain precisely the reasons why India ought to have signed the NPT. See Raju G.C. Thomas, “Should India Sign the NPT/CTBT?” in Raju G.C. Thomas (ed.), *The Nuclear Non-Proliferation Regime* (New York: St. Martin’s Press, 1998).

generalized security challenges might well arise, such challenges will rarely if ever be salient enough to warrant serious programmatic responses by countries other than the great powers. In India's case, this implies that the nuclear capabilities now becoming evident in the Levant and Northeast Asia as well as those in Europe and the Americas are less relevant for assessing how nuclear weapons might resolve New Delhi's security dilemmas and, as such, can be disregarded for now. One Indian analyst, Vijai Nair, summed up this more restricted criterion of adequacy succinctly when he noted that while the U.S. deterrent philosophy is complex and directed to achieve a large number of variable objectives...this philosophy is not applicable to the Indian nuclear deterrent, which is required purely as a defensive instrument to ensure that no outside power is tempted to coerce the country or initiate a nuclear strike in a conflict situation. Therefore, the size (numbers) and capability (range) of [India's] strategic forces need to be limited to deterring regional nuclear powers by holding hostage to nuclear retaliation, major assets in those states [italics added].

The threats emanating from regional nuclear powers like Pakistan and China must therefore be accorded the most serious consideration, especially given the rivalries that exist between each of these two states and India. These threats could be manifested in three ways. First, both states could threaten to use nuclear weapons either to avert battlefield defeat or to accelerate battlefield victory in the context of a local conventional war. Second, they could engage in blatant nuclear blackmail in the context of some crisis (or even outside a crisis) in efforts to force India to make political concessions. Third, they could exploit the perceived immunity conferred by their nuclear arsenals to engage in low-intensity conflicts with India, secure in the knowledge that New Delhi could not threaten nuclear or perhaps even conventional retaliation.

19 Nair, "The Structure of an Indian Nuclear Deterrent," p. 83.
20 This premise forms the explicit basis of Vijai Nair’s interesting book on Indian nuclear strategy. See Nair, *Nuclear India*, pp. 7–77.
21 These three categories of nuclear threats essentially span the spectrum that defines the utility of these weapons. The first contingency incorporates the notion of nu-
1. Averting defeat or accelerating victory in a conventional war. The effects of each of these contingencies would be different in the case of Pakistan and China thanks to differences in their relative capabilities vis-à-vis India, and hence they must be considered separately in the context of how they could threaten the denuclearized India that would be assumed to exist under Alternative I. As far as Pakistan is concerned, it is unlikely that the first form of threat—the use of nuclear weapons to either avert defeat or accelerate victory in the context of a conventional war of unlimited aims—would acquire any real significance because of the generally low probability that such premeditated conflicts will arise in South Asia today. Indeed, since 1971 the declining utility of unlimited-aims war in the region has slowly become a strategic fact of life that has been widely acknowledged both by the U.S. government and by the strategic elites in South Asia, if not by some Western commentators. The logic underlying this phenomenon has already been articulated elsewhere and hence will not be repeated here except for two summary statements bearing on this issue: First, rapidly diminishing political incentives in both India and Pakistan interact with conditions of high defense dominance on both sides to make premeditated wars of unlimited aims only a remote possibility. Second, fears about operational ineffectiveness on both sides coupled with concerns about the inability to enforce war termination at the desired moment interact to minimize clear weapons as effective war-fighting instruments; the second contingency involves the idea of nuclear weapons as tools of coercion; and the third contingency refers to nuclear weapons as umbrellas that could engender instability at lower levels of conflict. The fourth contingency would refer to nuclear weapons as pure deterrents against attack. This contingency is not addressed here because nuclear weapons in the hands of Pakistan and China would be oriented toward deterring Indian threats, and as such this category is more relevant when analyzing Islamabad’s and Beijing’s decisions to maintain an arsenal rather than New Delhi’s. To the degree that this issue is relevant to New Delhi’s decision to denuclearize, its relevance is grounded mainly in the benefits that Indian nuclear weapons would have in deterring those Pakistani and Chinese nuclear attacks aimed at decisively eliminating India as a competitor. To the degree that such attacks are aimed at securing certain specific political goals short of outright elimination, they are analyzed under the rubric of the three contingencies noted above. Other kinds of hypothetical attacks, including those intended to definitively obliterate India’s existence as a politico-physical entity, are so beyond the pale of possibility as to merit no systematic consideration whatsoever.

22Tellis, Stability in South Asia, pp. 2–33 and 53–62.
the probability of most though not all premeditated conflicts of limited aims.\textsuperscript{23} 

The localized conflict at Kargil in 1999 remains an apt example of the kind of limited-aims war that could still occur under conditions of "ugly stability."\textsuperscript{24} in South Asia. Unlike most limited-aims wars, which are aimed at securing finite portions of intrinsically valuable territory, Pakistan's military operations at Kargil may well have focused at least as much on precipitating international intervention in support of its claims over Kashmir as they did on securing marginal pieces of Indian territory. If this was in fact the case, the Kargil crisis could well be viewed as a good example of nuclear-shadowed brinkmanship aimed at securing foreign intervention in an ongoing dispute rather than a purely limited-aims war as it is traditionally understood in the literature.\textsuperscript{25} This peculiar kind of conflict, which might be termed "catalytic war" in that it is deliberately initiated with the intent of inveigling third parties to enter the fray in order to force the resolution of an ongoing political dispute, could recur in the future if the power transitions currently under way within the Indian subcontinent continue to gather force. Under such conditions, Pakistani desperation coupled with factors such as decreasing state capacity, the rise of a risk-acceptant national leadership, and the prospect of serious international attention could combine to create conditions in which premeditated catalytic conflicts might actually become an attractive option.\textsuperscript{26} 

The opportunities for such types of limited war, however, would constantly fluctuate, since the background conditions required to spark such conflicts are likely to remain persistently in flux. As a result, the "ugly stability" that normally defines strategic interactions in the Indian subcontinent could be interrupted by intense and episodic "crisis slides" that—if all went well—would gradually abate, returning both competitors to their preexisting pattern of "ugly

\textsuperscript{23}Ibid. 
\textsuperscript{24}Ibid., pp. 30–33. 
\textsuperscript{26}For more on these possibilities, see Teltis, *Stability in South Asia*, pp. 56–59.
stability” (which may subsist, however, at higher and higher plateaus of relative violence in the aftermath of each successive crisis). Yet while all these crises will certainly have tense and unsettling moments, perhaps including limited conventional military operations of some intensity, they are unlikely to precipitate the actual use of nuclear weapons—as opposed to nuclear signaling or nuclear brandishment—mainly because the likely initiator of these crises, Pakistan, recognizes that none of its desired political goals is worth a nuclear war.27 Clearly, Islamabad’s (and, for that matter, New Delhi’s) ability to prevent such a war from resulting from inadvertence, miscalculation, misperception, or accident in the midst of a crisis may be suspect, but it is reasonable to conclude—at least at the level of intentionality—that neither Pakistan nor India would stand to gain much if the crisis they precipitated for whatever reason degenerated into an all-out war involving the actual use of nuclear weaponry. Since this recognition is likely to inhibit both sides’ risk-taking propensities, the possibility of escalation to actual nuclear use is likely to be minimal even though the prospect for acute political crises and some limited conventional military operations may well increase in the future. This reality, in turn, immediately reduces the opportunities for Pakistan to engage in any nuclear use vis-à-vis India, either to avert battlefield defeat or to accelerate battlefield victory in the context of a local conventional war.

Even if this conclusion is held in abeyance, however, it is clear that Pakistan’s incentives to actually use nuclear weapons have always been somewhat constrained. Indeed, the use of nuclear weapons to accelerate the prospects of a battlefield victory in an otherwise conventional war is all but impossible for Pakistan given the relative balance of power in South Asia; Islamabad is simply too weak to reach out for victory in a war of unlimited aims, and while it could attain early if transient success in some kinds of limited-aims conflicts (e.g., the operations at Kargil), it is unclear how nuclear weapons as warfighting instruments would contribute to such success in these contingencies.28 Even in the few instances where Pakistan’s use of

nuclear weapons would actually bequeath it some clear operational advantages—as, for example, in interdicting the Banihal tunnel to prevent Indian reinforcements from reaching northern and western Kashmir during a surprise attack—India would have at its disposal a variety of conventional solutions that could prevent Islamabad from exploiting the fruits of such discrete operational use. At the very least, India could simply prolong the war, mobilize to amass the requisite force superiority over time, and destroy the flower of Pakistan’s military capabilities, perhaps irrevocably.

To prevent just such an outcome, any Pakistani effort to harness nuclear weaponry for purposes of ensuring a conventional victory on the battlefield would have to be comprehensive, involving the widespread use of such weapons on several strategic and multiple battlefield targets. At the very least, it would require a readiness to employ nuclear weapons extensively in order to produce militarily significant operational effects. If, for example, Pakistan sought to destroy even a single Indian armored division advancing along a frontage of 15 km with its constituent elements spread out to a depth of 25 km—that is, to destroy at least 50 percent of the 500-odd armored vehicles within the formation—it would need to employ between 436 and 257 nuclear weapons of 15-kt yield, depending on the hardness estimates selected for armored vehicles. Even if Pakistan settled for killing merely 50 percent of the division’s personnel in their vehicles as opposed to destroying the vehicles themselves in order to secure a “mission kill” rather than a “hard kill,” it would require about 37 nuclear weapons of 15-kt yield just to operationally disable a single Indian armored division. This calculation of weapon expenditures is in fact conservative because it is predicated on the assumption of perfect circular-error-probable (CEP), zero weapon failure rates and on relatively modest frontages derived from the historical example of the First Indian Armored Division’s advance in the Shakargarh sector during the 1965 war. If any of these assumptions are altered in the direction of greater realism, the number of Pakistani nuclear weapons required to either destroy or disable even a single Indian armored formation would be even greater.29

29If, for example, it is assumed that Pakistan possesses only 8-kt weapons as opposed to the 15-kt devices used in the calculation above, the number of weapons required to destroy an armored division increases considerably—all other assumptions
It must be noted, however, that Pakistan today simply does not possess a nuclear arsenal of the size that would make these employment options possible, and it is unlikely to acquire the capabilities that would enable it to do so at any point in the future. Further, it seems doubtful that Pakistan has any political interests in South Asia—including those linked to recovering disputed territories such as Kashmir—that would warrant either the comprehensive use of nuclear weapons or the readiness to escalate such use in the face of initially discrete nuclear applications. This is especially relevant in situations where even a nonnuclear India could respond by altering its war aims, invoking external security guarantees, or simply fabricating nuclear weapons in an emergency and using them to destroy Pakistan despite having absorbed what may be its consequential first strike(s). This hypothetical conclusion assumes, of course, that Pakistan’s nuclear arsenal would remain a small one given the presumption of a unilaterally denuclearized India of the sort called for by Alternative I. The presumption of a small Pakistani nuclear arsenal here is justified simply by the expectation that Islamabad would have no incentive to produce anything more than a token nuclear force—primarily for political reassurance—if India did in fact divest itself of its nuclear weaponry through the adoption of comprehensive safeguards over its nuclear facilities and a full accounting of its past fissile-material and weapon inventory.

The contingency of Pakistan using nuclear weapons as war-fighting instruments to prevent a battlefield defeat is somewhat more plausible, but there are no political reasons today—and few that can be envisaged for the future—why New Delhi would want to place Islamabad in a position where, fearing for its very survival, it must use nuclear weapons to prevent strategic defeat. Indeed, the evolution of such a contingency presupposes great rapacity on New Delhi’s part, and while India could conceivably become more bellicose in the future, it is difficult to imagine such bellicosity taking the form of a war

held constant. With 8-kt devices in its inventory, Pakistan would need to expend between 663 and 391 weapons in order to destroy 50 percent of the armored vehicles and some 57 weapons in order to kill 50 percent of the personnel in their vehicles. The bottom line therefore remains the same: if nuclear weapons are to be employed in war fighting for purposes of achieving specific operational-tactical ends, a large number of weapons is necessary. The calculations here were performed using psi requirements for damage; if vulnerability numbers are used instead, the number of nuclear weapons varies somewhat but the general conclusions remain unchanged.
initiated by New Delhi to threaten the survival of the Pakistani state. This would be all the more true if Pakistan was known to have nuclear capabilities, implying that the very factors that could force the use of such capabilities would not be presented by India. This, at any rate, appears to be the assumption underlying the current Indian discussion about the possibility of waging a limited war in South Asia. Precisely because they recognize that nuclear weapons in South Asia deter all-out war, Indian security managers are struggling to escape from the straitjacket of self-deterrence, since it is widely believed that Pakistan’s possession of nuclear weaponry has in fact provided Islamabad with the license to needle New Delhi without fear of Indian military counterresponses. The underlying premises of this new debate in India clearly suggest that avoiding most if not all of the contingencies that would precipitate Pakistan’s defensive use of nuclear weapons is well within New Delhi’s control, at least in theory. Hence it is not unreasonable to presume that if an India possessing nuclear capabilities has been so careful to prevent nuclear deterrence breakdown from coming to pass, an India that unilaterally renounced its nuclear option would become more careless and thereby precipitate the same undesirable outcome it has avoided thus far.

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31 Mohan, "Fernandes Unveils 'Limited War' Doctrine."
32 Ibid.
34 It should be noted, however, that this discussion about Indian control over the possibilities of Pakistani nuclear use is predicated on the standard assumptions of rational deterrence theory and focuses only on the purposeful use of nuclear weapons in the context of deliberate wars that can be imagined in the region. It is not intended to suggest that a denuclearized India would be immune to every Pakistani nuclear-use contingency imaginable. Thus, for example, a collapsing Pakistan may still choose to use nuclear weapons as part of a vengeful attack on India even if New Delhi had little or no role in the failure of the Pakistani state. Alternatively, Pakistan could use nuclear weapons on India because its strategy of nuclear brinkmanship—the attempt to invoke international intervention by deliberately precipitating conventional or subconventional military crises with India—results in a substantial Indian military riposte that Islamabad then mistakes for an unlimited-aims war justifying recourse to its strategic reserves. Contingencies of this type obviously cannot be neutralized by an India that adopts Alternative I as its preferred strategy, and as a later discussion in this section will establish, it remains an important reason New Delhi cannot comply with the international desire for denuclearization in the form represented by this.
A similar set of considerations applies to contingencies involving China. There is little doubt that many Indian policymakers fear China's intentions over the long term, and the prospect of a powerful China "returning" to complete its "national reunification" agenda with respect to its territorial disputes with India remains disconcerting to New Delhi.\footnote{Subrahmanyam, "India: Keeping the Option Open," p. 118; "SAPRA Backgrounder: The China Poser," pp. 2–6; Jasjit Singh, "Why Nuclear Weapons?" in Jasjit Singh (ed.), \textit{Nuclear India} (New Delhi: Knowledge World, 1998), pp. 14–20; and Mohan, "India, China Power Equations Changing."} Indeed, it is in this context that China's possible use of nuclear weapons in South Asia becomes relevant. A closer examination of this issue, however, reveals that there are in fact few circumstances under which China's use of nuclear weapons as warfighting instruments would be either plausible or advantageous to it in the context of a conventional conflict with India. This judgment essentially hinges on an assessment of the Sino-Indian military balance that exists along the Himalayan border separating India from China. This military balance cannot be discussed in detail here, but its general condition can be summarized in the following terms. Unlike 1962, when the Indian Army was completely outclassed by the Chinese People's Liberation Army (PLA) with regard to both equipment and performance, the situation today has shifted substantially in India's favor. It is in fact possible to assert that India now enjoys relative superiority to China—not necessarily in numbers because that is affected by both sides' ability to bring in reinforcements from outside the theater, but clearly as far as the quality of its personnel, training, infrastructure, and logistics is concerned.\footnote{Jasjit Singh, "Nuclear Diplomacy," in Jasjit Singh (ed.), \textit{Nuclear India} (New Delhi: Knowledge World, 1998), p. 290.} More important, India possesses unqualified superiority in tactical airpower, and it is likely that at least for the next decade, the Indian Air Force will be able to secure complete air supremacy along the Himalayan frontier within a few days of the outbreak of conflict.\footnote{“Defending India's Frontiers,” \textit{Air International}, 33:6 (December 1987), pp. 267–296. The only circumstance under which this conclusion would be weakened is in the case of a simultaneous high-intensity, two-front war vis-à-vis China and Pakistan. India would require about two weeks to establish air superiority against Pakistan alone, and this timetable would certainly be disrupted if key strike assets must be simultaneously allocated to the Himalayan theater. While such contingencies are al-
The nature of India’s general military superiority must, however, be qualified with reference to the objectives New Delhi seeks to attain—for while India’s combat forces in the theater, both land and air, are superior to their Chinese counterparts where defending territorial interests is concerned, such forces are for all practical purposes incapable of conducting any sustained offensives aimed at capturing new territories at significant distances from the forward edge of the current frontier. At the same time, this limitation holds equally for Chinese forces already deployed or intended for deployment along the border. Thanks to the terrain, weather, and general levels of military preparedness on both sides, the net result of this symmetry is that an extremely robust condition of defense dominance prevails along the Sino-Indian border. The nature of this defense dominance is in fact even sturdier than that along the Indo-Pakistani frontier because unlike the latter case, where New Delhi would gradually acquire an offensive edge in the event of a lengthy conflict, no comparable transmutation is likely to occur even in an extended Sino-Indian border war for a variety of operational and technical reasons. This implies that both India and China have highly durable defensive capabilities that are unlikely to erode at any time soon. Indeed, even when China’s war-fighting capabilities improve several decades from now as a result of its current military modernization, this condition of defense dominance is unlikely to change, as the Himalayan frontier will remain as foreboding as ever. Moreover, even if New Delhi fails to secure all the military technologies it desires from the United States and Russia—its presumptive conditions for nuclear renunciation—the Indian military will certainly not stand still as the PLA improves its capacity to prosecute limited high-technology wars. In fact, the weather, the terrain, and the advantages accruing to the defense will all interact to ensure that even with incremental improvements in force capability, the Indian Army and Air Force will be more than capable of offsetting any advanced technological capabilities.

ways possible, the Indian Air Force has never seriously planned a full-blown offensive counterair campaign against both China and Pakistan simultaneously because it has judged—correctly—that such a collusive attack is highly improbable in the post-1971 environment.

38See Tellis, Stability in South Asia, pp. 19–22.
that the PLA might acquire as a result of China’s growing economic prowess.\textsuperscript{39}

Taken together, all these judgments imply that although a Chinese invasion might result in a battlefield defeat for the PLA, the latter would be deprived of the value of any battlefield nuclear use so long as the Indian Army did not attempt to exploit its successful forward defense through pursuit at the operational level deep behind China’s front lines. Since India does not possess and lacks the political interests to develop the logistical capacity for such actions—assuming that they can in fact be executed in the terrain concerned—the situational necessity for Chinese nuclear use even in the context of a battlefield defeat is unlikely to materialize. Hence, given the exceedingly conservative operational goals that characterize India’s forward defense strategy in the Himalayan theater, the fears some Indian military officers have expressed that “China may use TNWs [tactical nuclear weapons] in the defensive mode to neutralise China’s own lifelines such as the Aksai Chin highway or the arterial roads supplying Tibet”\textsuperscript{40} would appear to be overstated.

China’s use of nuclear weapons to advance the prospects of a battlefield victory is just as unlikely. The Himalayan battlefield is often said to lend itself to effective discrete nuclear use in that its numerous valleys and watersheds form enclosed spaces that could maximize the operational effects of nuclear weapons while simultaneously containing radioactive fallout. At the same time, however, the employment of nuclear weapons to destroy entrenched Indian formations\textsuperscript{41} presumes that the PLA’s war-fighting objectives in some future conflict are not restricted to making marginal gains along the existing frontiers but are aimed instead at invading and occupying all of the disputed territories—including, for example, the entire state of Arunachal Pradesh in the Indian northeast.

\textsuperscript{39}Singh, “Nuclear Diplomacy,” pp. 289–291. This issue also remains the subject of current research at RAND.

\textsuperscript{40}Arun Sahgal and Tejinder Singh, “Nuclear Threat from China: An Appraisal,” Trishal, 6(2) (1993), p. 32.

\textsuperscript{41}Nuclear weapon effects on a mountain battlefield are illustrated in Sundarji, Effects of Nuclear Asymmetry on Conventional Deterrence, pp. 12–13.
Assuming this to be the case for the moment, the use of Chinese tactical nuclear weapons in this context would most likely take place during breakthrough battles in the high mountain passes\textsuperscript{42}—but even in this situation the advantages of nuclear use, although theoretically attractive, are less than clear. This is because the problem of transiting through heavily contaminated chokepoints is compounded by the fact that the features of this complex terrain may shield large groups of defenders from weapon effects in relatively close proximity to ground zero. Such defenders could thus offer effective resistance despite the previous use of nuclear weapons by their adversary, with the result that actual nuclear employment might have to be much more extensive than initially intended so as to suppress resistance both quickly and irrevocably.\textsuperscript{43} It is unclear whether the PLA is capable of conducting such offensive combat operations on a nuclear battlefield. Moreover, even if one assumes that China’s nuclear capabilities—especially tactical—would indeed suffice to neutralize the heaviest concentrations of Indian defenders en route to the plains, they would still be unequal to the principal operational challenge the PLA would face after its initial success: effectively sustaining both a war-fighting force and an occupation regime in the conquered territories situated far from their bases of support at a time when Indian special forces and regular small-unit detachments could exploit their knowledge of the terrain to unleash a reign of terror on their Chinese adversaries. In such circumstances, the Indian Air Force, operating from secure bases in both the lower northeast and the Gangetic plains, would only add to the PLA’s difficulties in sustainment and control.

If all of these threats are to be neutralized, Chinese nuclear weapons—as in the Pakistani contingency considered above—would have to be employed not merely on battlefield targets but on strate-

\textsuperscript{42}One Indian military analysis has claimed that “as per unconfirmed information, 203-mm guns with 5-kt warheads are distributed in 90 artillery battalions. The PLA also has S-23 Soviet-type 180-mm artillery and T-5 short-range ballistic missiles . . . 10-kt bombs are [also] carried by A-5 fighter bombers and M-series missiles (M-9, M-11) carry tactical nuclear warheads,” all of which presumably could be used for securing tactical gains on the Himalayan battlefields. See Sahgal and Singh, “Nuclear Threat from China: An Appraisal,” p. 31.

gic ones as well. As one Indian military analysis argued, these weapons “could be used to facilitate offensive designs [and to] neutralise enemy threat[s] and target communication centers”\textsuperscript{44}—which, in the context of a ground offensive against India, would entail a large number of Chinese strikes in the Sikkim, Arunachal Pradesh, and Ladakh sectors as follows:

**Sikkim Sector.** The strategic aim would be to slice the northeast from the rest of India by linking up with Bangladesh through the strategic Chumbi Valley. Bagdogra airfield could be a quasi-strategic target. Tactical nuclear strikes could be launched on important localities.

**Arunachal Pradesh.** The strategic aim could be to block the Siliguri Corridor by a nuclear strike on a suitable road-rail bottleneck. The rest of the tactical scenario could be the same as for the Sikkim sector.

**Ladakh Sector.** Routes into Ladakh could be blocked by suitable low-yield TNWs, thus severely restricting the Indian Army’s ability to reinforce forward localities. A Sino-Pak collusion in this sector cannot be ruled out.\textsuperscript{45}

While such contingencies are certainly within the realm of possibility when viewed at an abstract level, they do invoke the question previously raised about proportionality: Which of China’s political interests in South Asia demand the use of strategic nuclear weaponry and toward what end? Even assuming that the existing nuclear powers do not intervene in such a context—thereby going against both their own self-interest and the negative and positive security guarantees accorded to India as part of its decision to renounce nuclear acquisition—China’s actual use of nuclear force in either a battlefield or a strategic context for the purpose of increasing the prospects of conventional victory borders on the incredible given its marginal territorial interests in South Asia. It is therefore the character of these interests more than any other that serves to nullify Indian claims

\textsuperscript{44}Sahgal and Singh, “Nuclear Threat from China: An Appraisal,” p. 32.

\textsuperscript{45}Ibid.
asserting that the "Chinese threat of low-yield nuclear weapons usage on the Himalayan battlefield is real."46

It should also be noted that in all contingencies relating to Pakistani or Chinese nuclear use or to the threats thereof, the international community—especially the other established nuclear powers—would have compelling reasons to intervene on behalf of a nonnuclear India in the event of a conflict. This is not because the latter would simply invoke its security guarantees—as is loosely presumed by Alternative I—but more significantly because it is in the great powers' interests to prevent nuclear coercion so as to ensure the viability of the global nonproliferation regime. Any nuclear use or threats thereof would imperil the existing nonproliferation order, and any successful use or threats thereof would imperil it even more. Consequently, the great powers would have substantial cause to intervene on behalf of a nonnuclear state threatened by another not merely out of political or legal obligation but also out of fundamental self-interest.47 An India that renounced its nuclear option—as would be required by Alternative I—would therefore preserve its security first by maintaining robust conventional capabilities but second by exploiting the great powers' interest in preserving an international order in which nuclear weapons have diminished significance.

This conclusion is vulnerable, of course, to two kinds of criticisms: first, that a nonnuclear India would be placed at a disadvantage simply because no matter how substantial the interests of the great powers might be, New Delhi could never be certain that they would intervene—and that in effect would restrict India's security choices. Second, even if India could obtain ironclad guarantees of intervention (assuming that all the reliability issues connected with such


guarantees are resolved *ex hypothesi*), the character and extent of this intervention would become clear only as a crisis evolved. The uncertainties associated with this process, especially if India is not an active part of some alliance, would be disconcerting to New Delhi and would thus make nuclear renunciation less attractive than it first appeared even in the presence of security guarantees. Both of these difficulties, it must be recognized, are essentially grounded in the *levels of risk* India appears willing to bear. This issue will be discussed again later, but the important point is that New Delhi would not be unambiguously vulnerable to nuclear weapons as war-fighting instruments even if it renounced the right to develop such weapons in the face of comparable capabilities possessed by its adversaries.

2. *Engaging in blackmail for political concessions.* If the first kind of threat to security—the use of nuclear weapons in the context of war—is seen on balance to be less serious than is sometimes imagined, the second kind of threat is more problematic, for it is indeed possible, at least theoretically, that either Pakistan or China could engage in certain blatant forms of nuclear brandishing for purposes of blackmail in the context of a political crisis with India. In the most extreme version of this scenario, a risk-acceptant Pakistani or Chinese decisionmaker might demand that India settle some outstanding political dispute such as Kashmir or the status of the McMahon line on terms issued by the former—or else risk the loss of some major Indian city. Even lesser threats could possibly prove unnerving, as Major General Som Dutt, in one of the earliest and most prescient Indian discussions about the utility of nuclear weapons in the context of a Chinese threat, noted:

Admittedly, it would hardly be necessary for China actually to use nuclear weapons to achieve such limited aims; but both China and India value a position of influence in Asia, and a process of competition could ensue in which the border states might be a focal point. Thus if China has strategic options which India does not have—or denies herself—then not only is China likely to win the psycho-political game, but she could precipitate a crisis over the border states or elsewhere in which India could be blackmailed into paralysis.\(^{48}\)

\(^{48}\)Dutt, *India and the Bomb*, p. 1.
Given that Pakistan could easily be substituted for China throughout this passage with no harm to the author’s intent, it is obvious that as early as the 1960s several thoughtful analysts were already concerned about the threat of blackmail emanating “from two directions”—challenges that “might develop separately or could combine in a single dangerous threat, in which case India would find herself in an extremely difficult position.”

While the problem of nuclear blackmail is indeed serious, the difficulties it would pose should not be overstated, especially in the context of “compellance” strategies geared toward the pursuit of limited aims. In fact, an India that renounced nuclear weapons under the terms of Alternative I could respond to even the most extreme intimidation in one or more ways. To begin with, it could simply disregard such blackmail and challenge its assailants to make good on their threats. Alternatively, it could respond by declaring that any use of nuclear force by either state would be dealt with “appropriately”—which, in the case of Pakistan, could involve a conventional response that would end only with the permanent subjugation and occupation of Pakistan itself. A Pakistani decisionmaker who proceeded to act on his threat in the face of such a counterthreat may not be deterred by an Indian nuclear arsenal either, and hence deterrence breakdown in this instance may not be a product of New Delhi’s renunciation of its nuclear option. Whether Pakistan’s efforts at compellance are deterred in this instance would admittedly be a function of the size and character of Islamabad’s nuclear arsenal in relation to India’s conventional capabilities, India’s nuclear defense preparedness, and, finally, the balance of resolve present on both sides.

A Chinese nuclear threat, however, could not be dealt with in a similar manner because an Indian counterthreat that proposed conventional retaliation in response to Beijing’s nuclear brandishing would simply be meaningless. In this instance, India would therefore need to invoke the positive security assurances derived from the

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nuclear-armed great powers—the condition that made its nuclear renunciation operative in the first place—to checkmate China’s efforts at blackmail. Such an option would of course be available even in a contingency involving Pakistan, but the need to invoke such protection would be less pressing in the case of Pakistan than for China. Here again, a prudent Indian security manager who might otherwise justifiably doubt the credibility of such guarantees would have less cause to do so for two reasons.

First, it should be obvious that since the success of nuclear blackmail would seriously undermine the stability of the global nonproliferation regime, this is one instance in which the established nuclear powers—especially the United States—would have a vested interest in intervening on India’s behalf. Indeed, successful Chinese or Pakistani blackmail would simply provide an object lesson to other states, including those already within the existing nonproliferation regime, that acquiring nuclear weapons pays off—i.e., that such weapons do in fact allow certain desired political objectives to be attained, and that any renunciation of these weapons must therefore be reconsidered in light of the potential benefits that can be derived from their acquisition.

Second, so long as positive security guarantees are secured from states more powerful and capable than either China or Pakistan, there should be every reason for India to expect such guarantees to be credible. Indeed, the problem with extended deterrence in general lies not in the extension of nuclear guarantees per se but rather in whom those guarantees are directed against. U.S. nuclear guarantees to Europe during the Cold War, for example, became less and less credible over time because the assailant the United States sought to contain gradually grew more and more powerful, finally reaching parity with the United States at least as far as its nuclear capabilities were concerned.51 By contrast, neither China nor Pakistan is likely to reach parity with the United States or, for that matter, with Russia in the foreseeable future, assuming that one or both of these states would in fact serve as guarantors of India’s security if the latter decided to renounce its nuclear weapon option under Alternative I.

In these circumstances, extended deterrence would not be implausible, but the assumption would be that both the United States and Russia would continually preserve their existing nuclear superiority vis-à-vis a rising China. This could prove more problematic than it appears, however, because it could require that both great powers violate one of the assumptions inherent in India’s choice of Alternative I—i.e., that both the United States and Russia accelerate the pace of reductions in their nuclear arsenals.\footnote{This is in fact one of the principal arguments advanced in the United States against nuclear abolition. See, for example, Kathleen C. Bailey, “Proliferation: Implications for U.S. Deterrence,” in Kathleen C. Bailey (ed.), Weapons of Mass Destruction: Costs Versus Benefits (New Delhi: Manohar, 1994), pp. 133–143.} Choosing Alternative I thus requires that India accept the fact that decreasing the size and capabilities inherent in some nuclear stockpiles may not be so desirable after all—which of course suggests in turn that there is at least one less reason for New Delhi to choose Alternative I to begin with.

In any event, this analysis suggests that coping with nuclear blackmail in the absence of one’s own nuclear capabilities remains a thorny problem for India. To be sure, the most extreme forms of nuclear brandishing by China or Pakistan could be dealt with, but only if India’s leadership remained sufficiently risk-acceptant to challenge either assailant to make good on their threats. If China in particular were to carry through with these threats, however, India would simply lose, since it would possess no conventional or nonconventional countervailing capability to punish China in return—at least immediately. Because India possesses significant conventional punishment capabilities vis-à-vis Pakistan, coping with the maximal threats that could emerge from Islamabad could be a lesser problem for New Delhi so long as Pakistan’s nuclear arsenal remained minuscule. This would not be the case, however, if Pakistan’s nuclear capabilities were to increase over time or if India’s leadership turned out to be susceptible to paralysis in the event of a crisis. A steely resolve and strong conventional forces would thus be essential for coping with blatant coercion on the part of either China or Pakistan, but in both cases India would remain relatively vulnerable if it lacked nuclear weaponry of its own. India could even win some “games of chicken” in these circumstances, but it is unlikely that its leadership would be
content with the kind of security that would derive primarily from self-restraint exercised by its adversaries.53

Where less-than-maximal threats are concerned, the issue of New Delhi’s immunity to coercion is equally problematic. To be sure, India does possess the requisite conventional capabilities that would deny either of its adversaries the gains it might seek on the battlefield, but the effectiveness of this force in the presence of even modest nuclear threats is limited.54 India’s current land and air forces do not possess the intelligence, mobility, protection, and reconstitution capabilities at the operational level that would allow them to maintain high levels of war-fighting effectiveness even in the face of limited nuclear threats. Therefore, neutralizing such threats would again require that India gamble on its advantages (if any) in the balance of resolve or, more significantly, rely on external guarantees to ensure its safety. Only durable external support could decisively resolve the problem of blackmail in such circumstances—but as Indian policymakers are acutely aware, relying on such assistance brings with it a new set of uncertainties while also implying the loss of political autonomy—a prospect that is not at all attractive to India, given its considerable size and past experience of colonialism.55

3. Low-intensity conflicts. The third form of manifested threat—subtle nuclear coercion through low-intensity conflict, waged with the expectation that New Delhi could not threaten nuclear or possibly even conventional retaliation—further illustrates the tensions inherent in relying on extended deterrence. Nuclear-shadowed low-intensity conflicts represent a highly subtle form of strategic coercion in that they do not exemplify manifest nuclear threats; rather, they involve the support of domestic dissidence in the targeted country, with the assailant’s nuclear capabilities serving primarily as the strategic cover preventing the targeted state from directly retaliating

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53 On the logic of such games, see Schelling, Arms and Influence, pp. 116-120.
54 This, at any rate, appears to be the dominant view in the Indian military, as expressed through the arguments found in Sundarji, Effects of Nuclear Asymmetry on Conventional Deterrence.
through conventional or nuclear means because of the unacceptable costs that such retaliation would presumably entail. Both China and Pakistan have engaged in such unconventional conflicts with India in the past: China supported various insurgency groups in the Indian northeast until about the 1980s, and Pakistan supported the Sikh insurgency in the Punjab during the mid- to late 1980s, subsequently shifting its support to the Kashmiri insurgency that continues to the present day.56

India’s traditional response to such unconventional challenges has consisted primarily of a reactive strategy. This strategy, which has included a combination of co-optation and coercion, is distinctive because all the violence the latter element entails has been directed exclusively toward the insurgents and not toward their foreign supporters. Therefore, India’s reactive strategy has always involved a conscious effort to maintain peace at the interstate level, even as frenetic military operations are conducted domestically.57 This activity, which has consisted mainly of small-unit operations within Indian territory alone, deliberately precludes cross-border operations of any kind. To be sure, these operations have often been accompanied by cross-border exchanges of fire, especially in the context of insurgencies receiving support from Pakistan—but such exchanges have been primarily a function of larger Indo-Pakistani disputes and not simply a tactical consequence of the counterinsurgency operations themselves. An India that chose to renounce its nuclear capabilities as required by Alternative I would not find itself handicapped with respect to the pursuit of a reactive strategy in the context of any future

56 India too engaged in low-intensity conflicts (though not nuclear-shadowed low-intensity conflicts) vis-à-vis China and Pakistan in the past. The most prominent example of such activity versus China remains the Indian support (with the collaboration of the CIA) of the Khampa rebellion in the late 1950s and early 1960s in Tibet, and the best example of such activity versus Pakistan remains the assistance offered to the Mukti Bahini in the months leading up to the 1971 war. Since then, however, Indian activities vis-à-vis these two countries appear to have been more restrained; although it is often alleged, especially in Pakistan, that India has supported dissidence both in the Sind and in Karachi, no clear-cut evidence of these activities has publicly surfaced thus far.

57 An analysis of the larger strategy, including the co-optational political efforts mandated by it, can be found in Gupta, India Redefines Its Role, pp. 23–33. The military dimensions of the strategy are well described in Rajesh Rajagopal, "Restoring Normalcy: The Evolution of the Indian Army’s Counterinsurgency Doctrine," Small Wars and Insurgencies, 11:1 (Spring 2000), pp. 44–68.
unconventional challenges. This is because India’s possession of nuclear weapons would play little role in such a strategy, which hitherto has been dictated primarily by political factors. In fact, to the extent that India’s renunciation of nuclear weapons results in increased economic and conventional military capabilities—flowing from increased cooperation with friendly great powers—New Delhi’s ability to execute such a reactive strategy might actually be enhanced.

Against this beneficial effect of renunciation, however, arise two possibly deleterious consequences that must also be considered. First, India’s renunciation of its nuclear option may lead its adversaries to increase the pace or level of their support to dissidents within India. This course of action may in fact become attractive if the ongoing security competition in South Asia leads India’s adversaries to conclude that increased unconventional challenges can now be pursued without any fear of nuclear retaliation and—to the degree that the absence of Indian nuclear capabilities would strip New Delhi of its strategic cover against an adversary’s nuclear threats—with less fear of conventional retaliation as well. To be sure, no adversary is likely to increase its unconventional challenges merely because India has renounced its nuclear option. However, India must reckon with the possibility that its adversaries would now possess more opportunities to engage in unconventional conflicts without fear of retaliation than might have been the case had it continued to nurture some kinds of nuclear capabilities. Second, India’s renunciation of the nuclear option implies that New Delhi could never shift away from its reactive counterinsurgency strategy in the direction of a more proactive one even if required to do so in extremis. Besides merely increasing the intensity of violence directed against the insurgents domestically, a proactive strategy could include cross-border operations such as “hot pursuit” as well as punitive retaliation or shallow joint and combined-arms penetrations into enemy territory. Lacking the requisite nuclear cover, India would be unlikely to contemplate such operations against either a nuclear Pakistan or China without assuming a relatively high degree of risk because it would now be placed in the position of deliberately

58 The reasons beneath the Indian preference for a reactive as opposed to a proactive strategy are explored in Tellis, Stability in South Asia, pp. 47–50.
escalating a conflict even if strategic necessity so dictated. It is uncertain whether the positive security guarantees offered by friendly great powers, which are assumed to exist under Alternative I, would be considered operative in the face of such a contingency or even if the negative security assurances previously offered by potential adversaries such as China would be deemed to hold in the context of some hypothetical Indian conventional counterinsurgency operations on Chinese territory.\(^{59}\)

When the security dimensions of a possible nuclear renunciation by India are therefore taken into account, an apparently paradoxical outcome obtains. Specifically, India appears to be more safe at the high-intensity end of the conflict spectrum than at the low-intensity end: It is safest when an adversary might be tempted to use nuclear weapons as war-fighting instruments in the context of conventional military operations against India; it is less safe when nuclear threats are used as instruments of blackmail; and it is least safe when nuclear weapons become subtle tools of coercion by abetting unconventional conflicts. Renouncing nuclear weapons thus places India at a lesser disadvantage where pure conventional conflicts are concerned and at a greater disadvantage at the level of political crises and unconventional, low-intensity conflicts. On reflection, however, this should not be surprising in that the evolution in political attitudes toward nuclear weapons since the end of World War II has resulted in the diminishing credibility of nuclear use for any contingencies other than stark homeland defense.\(^{60}\) Since India is unlikely to be confronted by such a contingency, the utility of a nuclear capability is thus lowest in this regard. No evolution in political attitudes, however, can reduce the value of nuclear weapons as more or less subtle instruments of coercion in the context of both unconventional conflicts and political interactions between states. As Paul Bracken noted, “More than anything else, weapons of mass destruction use intimidation and threat for their effect. As in the first nuclear age, brandishing them for political uses is their most potent effect. It

\(^{59}\)For other arguments relating to this issue, see Subrahmanyam, “India: Keeping the Option Open,” pp. 133–134.

is this political effect that is so troubling." What may be more problematic, however, is that nuclear weapons may not even have to be formally brandished in order to secure certain desired political effects; in many instances, their mere presence may suffice to express threats, convey signals, enlarge freedom of action, and bestow psychological advantages on their possessors. As Bracken has correctly argued,

The Asian states have learned from the West. They have learned how to use nuclear weapons without actually detonating them in an attack, for political maneuvers, implicit threats, deterrence, signaling, drawing lines in the sand, and other forms of psychological advantage. The United States now forgets how it "used" nuclear weapons for forty years to reshape international politics to its advantage—when it deterred Soviet conventional attack on Europe, for instance, or when it went on high alert during the Cuban Missile Crisis and the 1973 Middle East War. The same pattern is appearing in Asia. North Korea uses its (implied) nuclear weapons to thwart outside pressure for reform and to extort free food and oil from the West. India uses nuclear weapons to send a wake-up signal to the United States about its relationship with China, its refusal to accept second-class status among the world's powers. Israel uses nuclear weapons to intimidate the Arabs and to play on their subconscious sense of inferiority. Whether these uses are successful or prudent is beside the point.  

What is very much to the point, however, is that the capacity for using nuclear weapons in these subtle but politically effective ways derives from the "residual" potentialities inherent in the possession of nuclear weapons—and consequently it is not surprising that the coercive advantages accruing merely from the ownership of such instruments are manifested more conspicuously when the level of actual violence is itself otherwise restricted.

Concerns about physical safety—half of the security problem—are exacerbated by difficulties with respect to political autonomy, the other dimension of security for all states in the international system. Clearly, nuclear abdication, as defined under the terms of Alternative

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62 Ibid., p. 97.
I, reduces India’s autonomy in a number of ways: It makes New Delhi dependent on the choices, actions, and policies of others, however well intentioned they may be, for its safety; it limits India’s own freedom to pursue policies that it may want to undertake for various reasons; and it may even limit India’s choice of allies, since not many states are both willing and able to provide the kinds of guarantees that would be necessary to make nuclear abdication a worthwhile option for India. This last consideration is not a trivial one because even the United States—the country most capable of providing nuclear guarantees to India—has historically declined to do so for New Delhi even when the latter was eager to explore this alternative in lieu of developing its own nuclear deterrent (e.g., during the 1960s).  

Indeed, the preoccupation with autonomy continues to dominate policymaking in New Delhi with respect to nuclear issues. In part, this is because of the country’s legacy of colonialism, which reinforces India’s determination never to become subject again to the control of outsiders—but it is also a function of New Delhi’s perceptions of India’s size and potential power, which, taken together, reinforce its basic beliefs about the country’s greatness and claims to recognition. Together, these factors combine to make a return to dependence on others distasteful—and hence any alternative that entails a loss of autonomy, in addition to the foregoing concerns about safety, is unlikely to dominate the decision space with respect to future nuclear capabilities in India. India’s Foreign Minister, Jaswant Singh, reaffirmed this conclusion in the following words:

We cannot have a situation in which some countries say, “We have a permanent right to these symbols of deterrence and of power; all of the rest of you . . . do not have that right. We will decide what your security is and how you are to deal with that security.” A country the size of India—not simply a sixth of the human race, but also an ancient civilization—cannot in this fashion abdicate its responsibility.  

64 Mike Shuster, interview with Jaswant Singh. *All Things Considered*, National Public Radio, June 11, 1998. Not surprisingly, similar sentiments are held by other nuclear powers who have perceived their nuclear weaponry as providing, besides strategic deterrence and political prestige, the ultimate guarantee of political independence.
Recognizing these myriad considerations with respect to physical safety and political autonomy is finally important for one additional reason that is of particular significance to this book: that India’s perceptions of its vulnerabilities will define the kinds of nuclear capabilities New Delhi will seek to develop, and perhaps make manifest, in the future. In that sense, understanding the nature of the multiple challenges India faces with respect to nuclear abdication provides a good indication of the ends to which its future nuclear efforts are likely to be directed, especially if the second alternative involving denuclearization—a regional nuclear weapon-free zone (to be discussed below)—is also perceived to be untenable.

**Flexibility.** If the security implications of nuclear renunciation embodied in Alternative I are thus seen to be something of a mixed bag, how does this alternative hold up when measured against the criterion of strategic flexibility? Here the answer is as unambiguous as it should be reassuring to New Delhi: India’s strategic flexibility is abundantly preserved under Alternative I. Under this alternative, India can continue to produce plutonium for its fissile-material stockpile; can continue to develop various delivery systems and even deploy some of them, if necessary, with advanced conventional warheads; and can continue to think about and debate the conditions that may require a reversal of its nuclear policy, even as it could begin to develop the enabling systems that would increase its nuclear effectiveness if such a breakout becomes necessary. Thus, India’s renunciation of the nuclear option under the terms of Alternative I does not in any sense strip it of its nuclear capabilities permanently. In fact, choosing this alternative may not materially alter very much in comparison to India’s condition of being a de facto nuclear state, at least as that was expressed between 1974 and 1992. India will retain physical possession of its nuclear materials, its research establishment, and its development complexes. It will simply subsist as a “virtual nuclear power” like Japan or Germany today—i.e., as a state that has the ability to rapidly develop a nuclear arsenal but that chooses not to do so for political reasons.65 If strategic necessities

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65These states were in fact presumed to be prime examples of “latent proliferation” in the 1970s, and concerns about their “latent arsenals” occasionally surface to this day. See Ted Greenwood, Harold A. Feiveson, and Theodore B. Taylor, Nuclear
demand it, this posture can always be reversed. While a decision to that effect should not and certainly would not be made lightly, it would not violate any international agreements; it would merely entail a reversal of national policy. And while such a reversal may not be cost-free, depending on the circumstances under which it is made, it nonetheless does not involve any permanent constraints on India’s freedom of action with respect to nuclear choices—something New Delhi is always suspicious about—except those it voluntarily accedes to and that in the larger framework of international politics cannot be truly permanent anyway.

**Status.** Although Alternative I does not constrain India’s strategic flexibility, it would not necessarily result in a clear improvement of India’s status in the international system. The claim that this proposition embodies should not be misunderstood. An India that renounces nuclear weapons—as is sought, for example, by the traditional U.S. policy toward South Asia—can improve its status in international politics, but a great deal depends both on whether the existing great powers are capable of supporting a redefinition of global preeminence and on India’s own domestic achievements in the interim. Since the beginning of modernity, great-power status in the international system has been defined primarily by a state’s possession of comprehensive military capabilities, which today include, among other things, the possession of nuclear weapons. These capabilities bequeath to great powers a qualitatively different kind of autonomy from that which other states enjoy, and these differential levels of autonomy are institutionally recognized through the veto system in the U.N. Security Council.66

To be sure, it is possible that the great powers today could move in the direction of changing the prevailing force-centered concept of power in international politics. They could, for example, institution-

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ally include states that have demonstrated great economic achievements, such as Japan and Germany, or states that possess great potential capabilities—such as Brazil, India, and Indonesia—into the sanctum sanctorum of international governance, giving such entities the full veto powers enjoyed by the existing nuclear weapon states. Such a movement would clearly indicate that the great powers are prepared to concede that a broader view of global status can reap benefits for international politics, including the preservation of a structurally unequal but desirable nuclear regime. Whether such a restructuring is appropriate all told is a separate issue, but the fact remains that if carried out, it would constitute a radical reform of the global hierarchy of prestige and, as such, could result in India’s renunciation of its nuclear option in the manner envisaged in Alternative I in exchange for the attainment of great-power status.

It is highly unlikely, however, that such a restructuring of the international order could in fact be carried out—for even if the United States, in a moment of optimism, were to successfully complete some of the many plans now being contemplated for the expansion of the U.N. Security Council, it is likely that the resulting reorganization will become increasingly incongruous over time. This incongruity will result from the fact that because international politics has not been radically transformed with respect to its “deep structure”\(^67\)—meaning that self-regarding states and their relative distribution of capabilities will remain central to the ordering of international affairs—any expansion of the “superstructure” of international governance to include countries that do not possess comprehensive military power will be condemned to failure or eventual irrelevance.\(^68\) This disjuncture will be less problematic as long as the new entrants’ interests coincide with those of the United States, but should such interests diverge over time, these entrants will be forced to acquire new military capabilities of the sort they had previously eschewed in order to maintain their security, status, and autonomy independent of U.S. support. Over the long run, therefore, the true


\(^{68}\)For an excellent discussion of how power and prestige are related in international politics, see Robert Gilpin, *War and Change in International Politics* (Cambridge, UK: Cambridge University Press, 1981).
great powers in international politics will continue to be those that possess an abundance of military capabilities, and any interim efforts to abridge this fundamental reality are likely to enjoy only transient success.

Where India is concerned, this simply means that New Delhi will be reluctant to trade its military power—including its nuclear capabilities—for a great-power status that is artificially constructed as a result of prevailing U.S. strategic imperatives. This kind of status, which would ultimately be viewed as impermanent, would only strengthen New Delhi’s resolve to develop those capabilities which would assure “true” great-power status over time and would thus render New Delhi likely to further pursue rather than abdicate the acquisition of comprehensive national power. Because acquiring these capabilities is fundamentally linked to how successfully India can complete its own internal economic transformation, it is likely that New Delhi, despite both the domestic obstacles to reform and the multiple trade-offs it confronts between acquiring military power and economic strength, will ploddingly pursue the former while attempting as best it can to minimize the difficulties caused by the latter. The benefits of choosing Alternative I will thus continue to be uncertain as far as India’s desire to enhance its status is concerned, because the fundamental transformation of international politics is still improbable. Consequently, India is unlikely to divest itself of its nuclear capabilities even if that might allow for more rapid economic growth in the short run.69

Alternative II: A Regional “Nuclear-Free Zone”

In contrast, Alternative II—developing regional arrangements to enforce denuclearization—could in principle provide a better solution to India’s strategic quandaries, but it too is unlikely to come to fruition for reasons that have as much to do with Indian preferences and those of its partners as with the structural contradictions inherent in the idea itself. In effect, Alternative II requires that India eschew its nuclear weapon program in the context of developing a regional nuclear control regime that binds Pakistan, its near-term

69For a succinct report of Indian perceptions on this issue, see Crossette, “Why India Thinks Atomic Equation Has Changed.”
competitor, to an identical obligation while merely restraining China, its long-term competitor, from mounting nuclear threats through constraints on the deployment of its weaponry. Many variants of this idea have been discussed within the nonproliferation community as well as by various official U.S. spokesmen over the years. Indeed, these ideas were fairly common throughout the 1970s and early 1980s, when the U.S. government began to invest considerable energy in attempting to roll back the growing momentum toward South Asian nuclearization. Interestingly, the earliest demands for a South Asian nuclear-free zone emanated from some of the regional states themselves; Zulfikar Ali Bhutto in particular—despite having initiated Pakistan’s own nuclear weapon development program in January 1972 (immediately after its defeat in the 1971 war)—is credited with “work[ing] very hard for the establishment of a nuclear-free zone in the area.”

Pakistan’s calls for regional denuclearization—which grew in intensity throughout the 1970s, especially after India’s first nuclear test in 1974—were enthusiastically supported by China, in part because these early formulations explicitly excluded Beijing from the obligations they imposed and, as such, did not burden China with any requirement to modify its own nuclear posture vis-à-vis India. China’s support was also influenced by the existing antagonisms of the time, as an early Chinese commentary made amply evident:

We hold the Pakistan proposal for the establishment of a nuclear-free zone in South Asia is just and reasonable. . . . The South Asian subcontinent has seen the intensifying contention between the two superpowers, one of which has supported the expansionist policies of a certain country in the region . . . if the desire for the establishment of a nuclear-free zone in South Asia is to be realized, it is imperative to guard against and oppose the superpower intervention and the expansionist acts of any country.

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Predictably, all such proposals were immediately rejected by India, which viewed Beijing's support for these initiatives as being opportunistic.\footnote{\textit{p. S. Jayaramu, "Nuclear Weapons--Free Zone, Non-Proliferation Treaty and South Asia," \textit{IDSA Journal}, 13:1 (July–September 1980), pp. 133–147.}} As K. Subrahmanyam argued,

[Chinese] nuclear missiles on the Tibetan plateau are sitting ducks vis-à-vis the USSR but terrifying instruments of intimidation in respect of India. Half of China lies south of Kashmir and geographically China is part of South Asia. Pakistanis always insist that China is a South Asian country with legitimate interests in the area. Therefore leaving China out of a regional nuclear security arrangement can only be intended to disarm India vis-à-vis China and subject it to the latter's domination.\footnote{\textit{K. Subrahmanyam, "Countering Zia's Proposals," \textit{The Times of India}, July 4, 1987.}}

The complications caused by China's presence as a nuclear weapon state abutting the South Asian landmass gradually began to be appreciated in Pakistan as well, and subsequent formulations of Pakistan's nuclear-free zone proposal thus incorporated additional safeguards that were intended to make the idea palatable to India, at least at a rhetorical level. General Zia-ul-Haq's version of the concept, for example—first advanced in 1979—required that "the Indian Ocean, the entire region, be declared a denuclearized zone, and . . . that the have-not . . . be granted guarantees by the countries having such weapons."\footnote{\textit{Joint Publications Research Service, \textit{Worldwide Report: Nuclear Development and Proliferation}, 36 (March 28, 1980), pp. 34–35.}} Pakistani Foreign Minister Shahabzada Yakub Khan further developed this idea when he proposed in 1987 not only that the established regional nuclear weapon states—meaning China—provide legally binding assurances never to use or threaten to use nuclear weapons against the South Asian countries but also that "they . . . be asked not to deploy nuclear weapons adjacent to the region or to remove them where such deployments already exist."\footnote{\textit{Cited in Malik, "China and South Asian Nuclear-Free Zone," p. 117.}}

This latest version of Pakistan's proposal, which exemplifies the idea of limited regional nuclear arms control, is attractive for purposes of discussing the prospect that India might adopt some variant
of Alternative II, since it attempts to address the most pressing concerns that New Delhi has articulated almost continuously since 1964. Not surprisingly, some version of this idea arises every now and then, often in association with the occasional calls for a dialogue between China, India, and Pakistan on nuclear and other strategic issues. Most of these proposals require that China’s nuclear capabilities be constrained simply because they cannot be eliminated in that China, by an accident of history, became a full-fledged nuclear power before India did. Restricting but not eliminating China’s nuclear weapon program is also implicitly justified by the common strategic belief that the Indian subcontinent represents a security complex in which the principal amity-enmity relationship is defined by India and Pakistan, with China simply abutting the subcontinent rather than being a direct participant within it. Since China’s own strategic focus appears to be directed more toward East Asia than to its southwest, the rationale for such a belief would appear to be reinforced. As noted earlier, one analyst has in fact argued that Beijing’s cancellation of the DF-25 missile implies that China no longer poses a nuclear and missile threat to the subcontinent and thus should not serve as an excuse for India to continue its own nuclear weapon programs. Such assessments, some Indian analysts have argued, require that New Delhi seriously consider the opportunity offered by a regional nuclear control regime of the kind embodied in Alternative II.

It is indeed certain that India’s security would be enhanced by institutionalizing robust regional nuclear constraints that would free India from becoming a target of its competitors’ nuclear weapons. The only problem with such a solution, however—at least in the first instance—resides in the preferences of those competitors. It is unlikely, for example, that Pakistan—which has traditionally claimed that it would be willing to give up its nuclear option “one minute” after India does so—would actually accede to any proposals for regional denuclearization even if India were suddenly to accept such

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78Arnett, “What Threat?”

arrangements for its own reasons. This reluctance on Islamabad’s part is rooted not in mendacity but rather in old, self-interested reasons of survival. Given Pakistan’s strategic circumstances, it should not be surprising to find that almost all Pakistanis believe—using the words of Zafar Iqbal Cheema—that

only Pakistan’s ability to build . . . a [nuclear] deterrent can neutralize India’s broad regional dominance. In their calculations, the acquisition of a nuclear weapons capability can deter India’s conventional military threat by raising the cost of conflict to unacceptably high levels. The historical record of Pakistan’s alliances with the U.S. and the West, where the big powers have not shown any willingness to become embroiled militarily in the Indo-Pakistani conventional wars, also confirms the belief . . . that no state will safeguard Pakistan’s security in a confrontation with India. Nuclear proponents in Pakistan believe that nuclear weapons provide the ultimate guarantee of regional security. The recent Sino-Indian rapprochement also makes Pakistanis feel increasingly insecure. If realized, the stipulated Sino-Indian accords could chip away Pakistan’s margin of diplomatic maneuvering. Envisioning this, Pakistanis are unlikely to show great willingness to abandon the nuclear option [italics added].

To be sure, most Pakistani elites understand that a subcontinent freed of nuclear weapons would certainly spare their state the horror of absorbing nuclear attacks in the context of an all-out war with India. Yet while the threat of such attacks is indeed disconcerting, Pakistan’s special vulnerabilities—flowing from its smaller size, the heavy concentration of its population and industrial assets within a very small target set, and its extreme vulnerability to destruction caused by the interdiction of a few critical nodes relating to irrigation, communications, and power generation—make its security managers especially sensitive to the consequences of strategic inter-

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80 Zafar Iqbal Cheema, “Pakistan’s Nuclear Policies: Attitudes and Posture,” in P. R. Chari, Pervaiz Iqbal Cheema, and Ikkekharuzaman (eds.), Nuclear Non-Proliferation in India and Pakistan (New Delhi: Manohar, 1996), p. 120. It should be noted that although Cheema’s conclusion, save for the last sentence in the quotation, originally described the position of the “pro-bomb” lobby in Pakistan, this conclusion could be safely deemed to describe the attitude of the vast majority of Pakistani citizens today. See Zafar Iqbal Cheema, “Pakistan’s Nuclear Use Doctrine and Command and Control,” in Peter R. Lavoy, Scott D. Sagan, and James J. Wirtz (eds.), Planning the Unthinkable (Ithaca, NY: Cornell University Press, 2000), pp. 158–181.
diction.\textsuperscript{81} Not surprisingly, then, Pakistani policymakers have traditionally sought to cope with this problem by developing a modest nuclear deterrent of their own even as they have simultaneously put forth an array of nuclear arms control proposals designed to limit the size and shape of India's nuclear capabilities. This response in fact led one prominent U.S. analyst to argue that Islamabad's efforts to "advance the prospects of mutual nuclear restraint" in South Asia have been so numerous as to constitute the "second track of its nuclear policy for more than a decade."\textsuperscript{82} This effort was obviously seen as being "aimed at placing limits on India's nuclear potential, even as Pakistan sought to achieve a nuclear weapons capability of its own."\textsuperscript{83}

While a nuclear-free South Asia would certainly relieve Islamabad of many of the unnerving burdens arising from its possession of nuclear weaponry—i.e., high costs, enhanced vulnerability, and deepening immizerization—it is unclear in the final analysis whether such a scenario would improve Pakistan's security across the board. This is because a nuclear-free Pakistan would still have to contend with the specter of India's conventional superiority, which has only been further enhanced—especially in the realms of air and naval power—since the Pressler Amendment's restrictions became operative in 1990. Islamabad is thus confronted by a difficult conundrum in the context of a possible war with India: In effect, nuclear weapons in South Asia increase the risks that could lead to Pakistan's utter and irrevocable demise, but the absence of such weapons also increases the risk of its loss of autonomy and perhaps even physical security. Given this dilemma, it is unlikely that Pakistan has any serious incentive to make good on the many nuclear arms control proposals it has put forth in the past, even if such proposals were somehow to be accepted by India—\textsuperscript{84}—as such an outcome would only institutionalize


\textsuperscript{84}A useful survey of Pakistan's arms control proposals can be found in Niaz A. Naik, "Towards a Nuclear-Safe South Asia: A Pakistani Perspective," in David O. Smith
India’s threatening military superiority. Consequently, Islamabad’s arms control proposals have probably been more of a diplomatic exercise than an agenda designed to increase its security. So long as Islamabad was certain that India would reject such proposals, thanks to its own concerns about China and its obsession with redressing global inequality, there was every reason to offer numerous nuclear arms control measures with alacrity, since Pakistan could be fully confident that it would never have to make good on any of its proposed commitments. This strategy, in effect, suggests that Dr. A. Q. Khan’s celebrated claim that “Pakistan’s future policy is to remain closely tied to Indian actions”\(^85\) was true but held in only one direction: further nuclearization and not the other way around.

This judgment is corroborated by crucial Pakistani decisions reached after Pakistan’s own May 1998 tests at Chagai: Faced with the prospect that New Delhi might sign the CTBT in the aftermath of its second test series, Islamabad for the first time formally linked its own position on the treaty from that of India.\(^86\) This in effect implies that even if India were to accede to the CTBT for its own reasons, there would be no such automatic accession on the part of Pakistan, since the effects of a permanent moratorium on nuclear testing are perceived to be sufficiently deleterious to warrant forgoing even those benefits that may accrue from marching in lockstep with New Delhi on this issue. On balance, these considerations imply that nuclear weapon capabilities will continue to exist in South Asia—an outcome that is certainly not cost-free for Pakistan but is still better than most other conceivable alternatives (especially when viewed over the long term) as nuclear weapons simply provide the best means of preserving Pakistan’s security without compromising its autonomy. Indeed, this is an outcome that Pakistan has always


longed for, especially since it has learned that even its previous sacrifice of autonomy, undertaken in the days of its dependence on foreign allies, was ultimately insufficient to the task of preserving its security. Thus, so long as the actual use of nuclear weapons can be avoided, these devices will continue to provide Pakistan with a degree of reassurance that it would not be willing to sacrifice through any regional—or even global—agreements pertaining to nuclear disarmament.87

While Pakistan’s reasons for rejecting a regional nuclear arms control regime—including those that Pakistan itself may have proposed—ultimately hinge on perceptions of its strategic weakness, China’s reasons for rejecting such an arrangement would probably be rooted in its strength. Indeed, a regional nuclear regime that placed restraints on Chinese nuclear deployments—for example, on the Tibetan plateau or elsewhere—would be uninteresting to Beijing simply because it would entail giving up actual capabilities merely to avoid a notional counterthreat from India.88 Complicating matters further, no deployment restrictions whatsoever would eliminate the Chinese nuclear threat, since Beijing already possesses delivery systems of sufficiently long range to make all geographic restrictions on deployment utterly meaningless.89 Moreover, many Chinese nuclear delivery systems are mobile, meaning that deployment constraints could be rapidly circumvented in a crisis. All future modernization of China’s land-based strategic forces will, in fact, center on the deployment of true road-mobile, solid-fueled missile systems like the DF-31 and DF-41, both of which would be


88 This proposition, of course, has never been seriously tested because China has never treated India as a nuclear state even in the context of its ongoing bilateral dialogue with New Delhi. Despite the fact that this dialogue continued for at least a decade, it is interesting to note that nuclear issues were raised by the Indian delegation publicly—though not really discussed by both sides—for the first time in March 2000. The Chinese response to this issue was simply dismissive of Indian concerns. See “India Rejects China’s Call for Rollback,” Hindustan Times, March 9, 2000.

able to target the entire Asia-Pacific region from any point on the Chinese landmass. The possibility that preagreed deployment constraints could be rapidly circumvented in a crisis either does not apply to sea-based nuclear forces or applies a fortiori to air-breathing nuclear carriers. Either way, the problem of regulating Chinese nuclear deployments through spatial restrictions thus invites no easy or useful solutions that might interest India—rendering the notion of a South Asian nuclear-free zone a victim of irresolvable structural contradictions.\(^{90}\)

Even if some deployment constraints could be negotiated between New Delhi and Beijing despite these problems, the difficulties of verifying Chinese compliance with such agreements would not disappear. India currently has no operational capabilities that could attest to Beijing’s adherence to any restricted deployment regime except those involving systematic intrusions into Chinese airspace. While the Mig-25RB aircraft, India’s dedicated strategic reconnaissance platform, has optical systems of relatively high (< 1 meter) resolution that are capable of detecting and generally identifying missile TELs, in the absence of cueing by other intelligence sources these aircraft would require repeated surveillance flights over large areas of southwestern and southeastern China if Beijing’s missile deployment patterns were to be verified with reasonable confidence.\(^{91}\) To the extent that the principal Chinese missile systems targeted at India consist of either fixed weapons or merely “movable” systems, verifying their presence at the usual locations would not be unduly difficult—so long as it is presumed, at least for the sake of argument, that the Chinese would tolerate Indian intrusions on their airspace in order to verify compliance with a regional nuclear arms control regime of the sort envisaged by Alternative II. Once China replaces its current weapons with the true road-mobile missile systems envisaged in the


future, however, India’s air-breathing reconnaissance systems could well become less effective because in the absence of external cuing, they might not be able to localize these mobile systems independently.\footnote{If it is assumed that the 300-mm oblique cameras in the Mig-25RB allow the aircraft to cover a ground swath equal to five times the aircraft’s operating altitude of, say, 21,000 meters, the aircraft would be able to cover roughly 200,000 km² on a single mission, assuming that the aircraft flies a straight-line 1000-km subsonic patrol over Chinese territory. No mission in practice would follow such a flight profile, and consequently actual coverage would be considerably less than these figures suggest. In any event, even with such coverage India’s Mig-25RBs would probably be unable to independently verify the location of all China’s mobile missiles in the future—the probability of detection here being greatly influenced by the spatial distribution of these missiles, the extent and quality of their ground mobility, their operational posture in peacetime and during a crisis, the deception and denial practices operationalized by the Second Artillery Corps, and India’s ability to sustain unhindered, repetitive reconnaissance missions over large portions of Chinese territory.}

Because India’s satellite systems currently cannot provide any effective cuing either, a regional regime of the sort envisaged by Alternative II would require by definition external guarantors who would monitor compliance on a regular basis and provide all parties with impartial evidence about possible ambiguities and violations. Yet it is unlikely that such guarantors could be found, at least at present, because concerns about revealing the quality of one’s own surveillance capabilities would prevent even technically proficient states from providing the kind of information that would be necessary to make such a regional arms control agreement hold. As commercial satellite imagery of sufficient resolution—such as that available from the IKONOS system—becomes readily available and as the resolution of India’s own remote-sensing systems improves over time, this problem could become less significant—but both of these emerging solutions may still be limited by the challenges of cost, coverage, timeliness, and reliability, not to mention the myriad problems associated with interpreting, analyzing, and integrating the received data at the user end.\footnote{See From Surprise to Reckoning: The Kargil Review Committee Report (New Delhi: Sage Publications, 2000), pp. 95–136, for a survey of both the technical limitations of India’s current reconnaissance systems and the numerous problems India has had in managing intelligence data thus far.} The issue of whether India can be confident about verification, preferably by its own national technical means,
thus remains a significant impediment to the successful conclusion of any agreement of the sort envisaged by Alternative II.

Even if these verification issues can be resolved satisfactorily, however, it is likely that Alternative II, in whatever variant imaginable, will ultimately be doomed in practice because of China’s consistent refusal to accept that its strategic capabilities have any bearing on the nuclear programs in South Asia. Indeed, at a diplomatic level China has never considered India to be a nuclear weapon state even though it apparently treats India as a nuclear adversary in the context of its own strategic deterrence posture. This schizoid attitude has led Beijing to consistently attribute India’s drive for nuclear capabilities to New Delhi’s competition with Islamabad and to its quest for global recognition, neither of which is presumed to have any relationship whatsoever to China, its regional behavior, or its strategic nuclear capabilities. China’s dismissive attitude toward India did not change even in the aftermath of the May 1998 tests, but it has been supplemented by a determination to avoid formally granting New Delhi anything that even remotely resembles recognition as a de facto nuclear state. Despite the gradual stabilization of Sino-Indian diplomatic relations, the background condition of mutual suspicion thus remains intact. As one perceptive analyst concluded almost a decade ago,

the Sino-Indian relationship is . . . an uneasy one. India still regards nuclear China as a major threat to its security. It sees China’s South Asian policies as anti-Indian, divisive, opportunistic, and interfering. China for its part perceives India to be an ambitious, overconfident, yet militarily powerful neighbor with whom it may eventually have to have a day of reckoning.

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95 “Give Up N-Programme, China Tells India,” The Hindu, March 8, 2000.

With attitudes such as these continuing to define the tenor of Sino-Indian relations, it is not surprising that China would have little interest in supporting a South Asian nuclear-free zone that involves a cooperative redeployment of its nuclear capabilities, just as it is equally certain that India would reject any solution that relied entirely on the presumption of Chinese strategic restraint for its security.

The most attractive element of Alternative II—its potential acceptability to India—thus stands nullified, at least in the first instance, because New Delhi would be unable to find strategic partners with which to consummate such a deal. Pakistan would simply be unable to live with unfettered Indian conventional superiority in perpetuity, while a reliable deployment restriction regime would be unacceptable to Beijing because China considers itself to be irrelevant to nuclear politics in South Asia. Furthermore, such a deployment regime would turn out to be unacceptable to India as well because the range advantages of some present and most future Chinese land-based nuclear systems would make spatial deployment restrictions irrelevant even if the verification challenges associated with such a regime were surmounted.

In the final analysis, however, even if all these problems were somehow to disappear, India's old obsession with countering global "nuclear apartheid" would ultimately put to rest any solution based on a variant of Alternative II. This judgment is corroborated by India's negotiating record in the years leading up to the conclusion of the NPT in 1967, when Indian security managers—faced with the challenge of seeking a creative solution to the emerging nuclear threat embodied by China's embryonic nuclear arsenal—focused not on regional responses of the sort exemplified by a "nuclear weapon-free zone" but rather on global antidotes requiring that "the nuclear threat itself be addressed and eliminated."97 In this solution, India's traditional opposition to a world characterized by "a nuclear weapon apartheid,"98 was bolstered by its past failure to secure effective nuclear guarantees from the superpowers, its frustration at being un-

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97 Perkovich, *India's Nuclear Bomb*, p. 115.
98 This phrase was first used by India's representative to the ENDC, V. C. Trivedi, on May 23, 1967, and is cited in Perkovich, *India's Nuclear Bomb*, p. 138.
able to secure an effective global commitment to comprehensive nuclear disarmament, and its growing concern about the nuclear threat emanating from its northern neighbor. As a result, New Delhi was forced to adopt a nuclear posture that effectively provided it with all the moral and political justification it needed to avoid entering into any “discriminatory” agreements that might suggest acquiescing to the permanent possession of nuclear weapons by some while accepting their indefinite abdication by others.

To be sure, it is sometimes suggested that New Delhi might in fact be willing to mute its opposition even to discriminatory arrangements of the sort encoded in a South Asian nuclear-free zone if such arrangements were actually capable of providing India with durable security. However, this proposition has never been formally tested and in fact may even be impossible to test because India’s demand for security has at least since 1964 been inextricably linked to the larger problem of affirming its claims to status in the context of a search for global equity.99 Not surprisingly, then, Alternative II has traditionally been rejected by Indian security managers, at least rhetorically, on the grounds of security alone, even though this opposition actually masks a complex, many-sided calculus that incorporates numerous elements relating to India’s postcolonial identity, the burdens of its colonial past, its yearning for a new normatively driven international political order, and more unexceptional concerns about political and strategic safety. This fact notwithstanding, it must be recognized that despite its lack of utility with respect to satisfying India’s concerns about security, Alternative II in its best variants would preserve India’s strategic flexibility, since it does not require that New Delhi give up its nuclear potential permanently. This potential could always be maintained in some latent form and transformed into nuclear weaponry if circumstances so demanded, albeit at some cost in the context of the prevailing nonproliferation order. These costs, however, would probably be no greater and no less than they are today, so the choice of Alternative II per se cannot be said to significantly impede India’s flexibility. Its effects on India’s desire to maintain and improve its status, however, are uncertain, as these would depend on the twin considerations identified earlier: the

nature of the future international system and India’s own political-economic performance. In the final analysis, however, these considerations are less relevant given that the high price of this alternative for both India and its partners would ultimately make it unacceptable as a serious policy alternative for either.

**Evaluating Denuclearization**

All things considered, therefore, there would seem to be understandable reasons New Delhi has not moved in the direction of denuclearization. This policy shift should not, however, obscure an important insight that emerges from the analysis of the challenges posed by denuclearization: that when all is said and done, nuclear weapons provide India with only ambiguous benefits, not clear and uncontestable advantages. Moreover, such weapons have the least comparative advantage as deterrents to actual nuclear violence by India’s adversaries, because so long as New Delhi maintains its traditional policy of military restraint vis-à-vis China and Pakistan, neither of these competitors is well served even by the token use of nuclear weaponry in the face of India’s conventional force superiority and in light of the political goals that each has traditionally sought to attain within the subcontinent. Nuclear weapons in the hands of New Delhi have a somewhat greater comparative advantage at deterring any nuclear blackmail that may be mounted by China and Pakistan; however, the more blatant the blackmail, the more incredible the threat, and hence, by implication, the less pressing the need for Indian nuclear weapons. In contrast, the more subtle the blackmail, the more valuable Indian nuclear weapons turn out to be. Even here, however, the primary utility of such weapons derives more from their “psycho-political” value—that is, their potential ability to strengthen the resolve of Indian policymakers in standing up to the sources of blackmail—than from their operational value as instruments of conflict. India’s success in vacating such threats will in most instances derive from the effectiveness of its other assets, such as the quality of its diplomacy, the effectiveness of its conventional forces, the robustness of its national cohesion, the adroitness of its elected leadership, and the extent of support it garners from its international allies. Finally, Indian nuclear weapons have the greatest comparative advantage where denying India’s adversaries the freedom to wage low-intensity war against India is concerned. Yet even this advantage
constitutes a sharp double-edged sword in that New Delhi’s nuclear weapons cannot eliminate the freedom enjoyed by India’s adversaries to wage subconventional wars against India; they can only eliminate the immunity India’s adversaries may believe they enjoy as a result of their asymmetric possession of nuclear weaponry. To the degree that India’s nuclear weapons allow New Delhi to compete with its adversaries in like or greater-than-comparable measure—that is, either through the support of subconventional conflicts in their territory or through the prosecution of punitive conventional military operations—New Delhi’s nuclear assets could also function as the means by which Indian security sharply deteriorates. This would be particularly true if India’s nuclearization engenders strategic responses whose action sequences lead to the actual use of nuclear weapons on one or both sides. In such circumstances, it matters little if the nuclear use arose from rational reasons or as an unfortunate consequence of miscalculation, miscalculation, or accident, since the net result would in both cases be an unspeakable diminution in India’s safety and well-being.

Therefore, even when India’s possession of nuclear weapons may have some utility, such weapons appear to bring with them multiple burdens that immediately devalue their attractiveness. When other consequences—such as the high financial burdens of sustaining effective nuclear capabilities, the corrosive effects of those weapons on India’s conventional military standing, and the damage wrought by the possession of those weapons to India’s claims to exceptionalism in international politics—are factored into the evaluation, the attractiveness of nuclear weapons for India’s security, standing, and freedom of action turn out to be narrow indeed.100 Clearly, where ensuring security is concerned, Alternative I could leave New Delhi more secure than Indian elites generally suggest would be the case, although it would perhaps leave India less secure than the American nonproliferation community is wont to believe. Nonetheless, it would preserve India’s strategic flexibility even as its effects on India’s future status remain somewhat ambiguous. On balance,

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100 As one of India’s best younger strategic analysts, C. Raja Mohan, echoing this judgment, pointed out, “It is necessary for India to understand at once the limited role of nuclear weapons in the country’s grand strategy and the severe limitations they impose on its immediate security policy.” See C. Raja Mohan, “Grand Strategy: Back to Basics,” The Hindu, January 20, 2000.
therefore—and barring any dramatic changes in the global nuclear environment—India would continue to reject this alternative as a viable end state despite any American entreaties that may be issued in this regard from time to time. Alternative II, for its part, would probably be pursued in principle if it could be translated into a viable solution that adequately addressed both security and equity. Its viability in this regard, however, is precisely the issue—and consequently New Delhi is unlikely to expend much political and diplomatic energy in pursuing it.

Several observers, especially in the United States, have argued that New Delhi’s reluctance to pursue denuclearization through either Alternative I or any variant of Alternative II is ultimately linked to India’s overweening desire for status, which India sees inextricably linked to the possession of nuclear weapons. While consideration of status will certainly play a role in any decision to eschew Alternative I in the future, what is more likely to be a determining factor is not status or even the pressures of domestic politics, as still others have argued, but rather India’s familiar and habitual risk aversion. Given that India is a relatively young and weak state, the country’s security managers have generally exhibited a highly conservative approach toward international politics. This trait has usually manifested itself in the form of sluggishly decisionmaking, a general reluctance to use force, and an emphasis on conciliation. In the arena of nuclear politics, high risk aversion, more than any other variable, not only explains why India did not persist with its nuclear testing program after the first detonation in 1974 but also explains why India went to great lengths to depict that test as a “peaceful nuclear explosion” and why, despite many obvious indications to the contrary, India declined until recently to claim that it was a “nuclear weapon state.”

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103 These traits are discussed at some length in Gordon, India’s Rise to Power, pp. 3-5.
The lack of confidence that India often displays in international politics has led many of its own elites to describe it as a “soft state.” While this trait has had many beneficial effects and, indeed, has often been responsible for the perception of India as a moderate entity in world politics, it now turns out to be the very characteristic that prevents New Delhi from taking the bold leap called for by those alternatives involving denuclearization—even if it were possible to convince Indian policymakers that the deleterious effects of their decisions would be marginal compared to their benefits. Being highly risk-averse at least collectively, they are unable to shake off the discomfort that accompanies any surrender of the proverbial “bird in hand” for even greater benefits still out “in the bush.” It is here that the sheer uncertainties of an age in transformation weigh most heavily on Indian minds. For while Indian security managers recognize that preserving their nuclear capabilities has cost them much thus far and could cost them even more in the future, they still see these capabilities as worth holding onto because no matter how inadequately they perform the role, nuclear weapons remain the best hedge against such an apprehension as arises from the uncertainties concerning the capabilities and intentions of both adversaries and allies.

While a more risk-acceptant group of security managers might have opted for some forms of denuclearization, there is no arguing the fact that accepting any such alternative implies that India would forgo another of its cherished values: its desire for autonomy. Even Alternative II implies some diminution in autonomy to the extent that India would have to rely on the capabilities of others to both guarantee and verify an agreement that affects its security. Such a sacrifice, however, might well be accepted in light of the great benefits this alternative offers were it to be made available without sacrificing other values relating to global equality. The sacrifice of autonomy entailed in Alternative I, however, is an entirely different matter, as it clearly seeks to preserve security and status by depending largely on the actions of others—which, even if these are only security guarantees that may never be actualized, still appear in New Delhi’s eyes to be a radical diminution of its self-worth. It is here that

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the heritage of several centuries of subordination interact with the constant recognition of India’s size, history, and “call to greatness” to produce an instinctive refusal on India’s part to agree to any policies that entail a return to systematic dependence on another state, be it for security, prosperity, or any other reason. India’s desire to sustain its political autonomy—which implies the freedom to choose friends, strategic policies, and its way of doing things without restraint by another—thus remains a goal that is almost conjoint with preserving physical security. Clearly Alternative I does not allow such autonomy because it makes India either dependent on the resources of others for its freedom or beholden to others for actions that would in the end preserve its safety. Therefore, for a combination of reasons that are rooted first in risk aversion and ultimately in a desire to preserve strategic autonomy, India has not embarked and will not embark on any alternatives that resemble denuclearization—irrespective of the pressures from the United States and elsewhere that may be brought to bear on it—even if the net benefit from nuclearization is, in the final analysis, smaller than usually believed.

ALTERNATIVES INVOLVING NUCLEARIZATION

If India’s movement toward denuclearization is all but impossible in the foreseeable future, assessing future directions from among the alternatives involving nuclearization becomes all the more relevant. The alternatives discussed here represent relatively fine distinctions in nuclear posture from the standpoint of policy, but it is critical that these differences be explored if policymakers both in the United States and in India are to avoid locking themselves into simplistic dichotomies involving “nuclear” versus “nonnuclear” states of being. Although this analysis has thus far identified reasons India is unlikely to pursue various nonnuclear alternatives (some of which may in fact be preferred by the United States), it has not yet assessed which nuclear postures are desirable from New Delhi’s perspective and which are likely to be settled for given the various constraints India confronts with respect to strategic issues. The analysis has, however, identified the ends to which India’s nuclear capabilities would be

directed based on an assessment of its structure of vulnerability. Specifically, it has established that India does not require nuclear weapons for war-fighting purposes because it is neither inferior, in conventional military terms, to its principal adversaries nor faced with any threats emanating from the prospect of effective battlefield nuclear use by its competitors. India may, however, require some strategic reserves that serve to immunize it against the possibility of blatant blackmail and subtle coercion (carried out either through conventional diplomatic instruments or through the mechanism of subconventional conflicts)—and the kind of nuclear posture that New Delhi eventually settles for will thus be one that preserves its security, flexibility, and status in the face of precisely such threats. The obvious point of departure, then, consists of examining the nature of India’s traditional posture—Alternative III, defined as maintaining the nuclear option qua option—and assessing why it did not hold indefinitely as many observers both in India and the United States hoped it would.106

Alternative III: Maintaining the Nuclear Option

As defined earlier, “maintaining the nuclear option” essentially entailed producing the fissile materials required for nuclear weaponry and continuing to design nuclear weapons and develop various delivery systems, but refraining from creating or deploying a ready arsenal in the form of completed nuclear weapons that, taken together with their supporting infrastructure and procedural and ideational systems, would enable India’s national leadership to undertake prompt nuclear operations in the event of an emergency. This definition of the option implied that even if India had some nuclear weapons—understood as either fully assembled weapons or merely components of such weapons—it would still not be deemed to possess operational nuclear capabilities as long as “the physical network . . . [and] . . . the plans, procedures, organizations, and

widely shared assumptions that allow the parts to work together coherently"\textsuperscript{107} did not exist or were not developed in advance. The absence of these supporting elements (and perhaps the weapons themselves) meant that the country’s nuclear potential was not “weaponized”—and while this appeared to be a source of great consternation to many Indian commentators, this unusual form of “nonweaponized deterrence”\textsuperscript{108} was widely held to describe how India’s nuclear option stood incarnated since its initial test in 1974.\textsuperscript{109} Thus, in response to an interviewer’s question about why India did not change its nuclear posture, former Indian Prime Minister I. K. Gujral cogently responded as late as 1996 that “at the moment the agenda to weaponise our nuclear capability is not there. Whether there will be such an agenda depends on the security threats we face. What we have done is retained the nuclear option. In that sense, we have opted for a status quo approach.”\textsuperscript{110}

These remarks on Gujral’s part could have implied any of the following propositions, among many others:

1. India had the requisite capability to develop nuclear weapons, but it did not possess any weapons at the time (≠ no weaponry whatsoever).
2. India had the requisite capability to develop nuclear weapons and probably possessed some weapons in unassembled form (≠ suspicion about weaponry).
3. India had the requisite capability to develop nuclear weapons and probably possessed some weapons in unassembled form, but it probably did not possess the supporting infrastructure normally required for the conduct of nuclear operations (≠ suspicion about weaponry and uncertainty about the existence of other auxiliary capabilities).

\textsuperscript{108}George Perkovich, “A Nuclear Third Way in South Asia,” \textit{Foreign Policy}, 91 (Summer 1993), p. 86.
\textsuperscript{109}See the discussion in Chari, \textit{Indo-Pak Nuclear Standoff}, pp. 53–80.
\textsuperscript{110}“Interview: I. K. Gujral,” p. 78.
4. India had the requisite capability to develop nuclear weapons and possessed several weapons, but it did not possess the supporting infrastructure normally required for the conduct of nuclear operations (= absolute certainty about weaponry coupled with certainty about the lack of other auxiliary capabilities).

Which of these propositions applied to India’s nuclear capabilities is difficult to say, since the issue relates in part to the meaning of the term *weaponization*. This term—coined by Sandia National Laboratories in the United States—was originally intended to describe the process of developing, testing, and integrating nuclear payloads with the delivery vehicles intended to carry such payloads to their targets in the event of war. The notion of weaponization, in its strict, narrow sense, would therefore refer to all the myriad details relating to the transformation of some specific nuclear device into a usable weapon system that would then be available for the prosecution of nuclear operations. However, the term *weaponization* can also be used in a broader sense in which it would simply refer to the development of the technologies, plans, procedures, and organizations necessary for effective nuclear operations in the event of conflict—a usage that derives from the idea that nuclear capabilities become consequential only through the existence of a complex, integrated deterrent system rather than merely as a result of the isolated presence of some discrete technologies. Recognizing the distinction between the narrow and broad sense of the term *weaponization*, illustrated in Figure 2, is important when one is assessing both the past and the future of India’s nuclear weapon program.

Clearly, Gujral’s simple statement—like similar statements by other Indian Prime Ministers in the past—is difficult to interpret because it is not clear which concept of weaponization is implied. Many Indian policymakers, especially its politicians, would argue that “maintaining the option” entailed proposition one and no other. Thus, for example, a long line of Indian Prime Ministers—including Indira Gandhi, Rajiv Gandhi, and finally I. K. Gujral—repeatedly affirmed that while India certainly possessed the capabilities to develop
nuclear weaponry, it did not possess any nuclear weaponry whatsoever.\footnote{See, for example, Gandhi, \textit{Statements on Foreign Policy, January–April 1963}, p. 27; Parker, "Rajiv Gandhi’s Bipolar World"; and "Interview: I. K. Gujral," p. 78. See also Perkovich, "A Nuclear Third Way in South Asia," pp. 85–104.}

By contrast, many Indian and foreign academics, following the judgments advanced by observers inside the U.S. government, would associate “maintaining the option” with some variant of proposition two: They would affirm India’s ability to produce nuclear weaponry and suggest that the country even possessed such weapons but would assert that these weapons probably existed in unassembled form. The uncertainty about India’s nuclear capabilities here derived in large measure from the semantic problem of whether unassembled weapons could be said to constitute real nu-
clear capability—a question answered in the affirmative by the Director of the Central Intelligence Agency, R. James Woolsey, when he argued that “the distinction between whether or not these weapons are, in fact, assembled or only able to be assembled within a few days is a very small distinction. But the key point is that it’s our view that they can be assembled, the few that each could put together, quite quickly.”112

Other foreign analysts, including those associated with the U.S. government, as well as some Indian analysts—especially those with close connections to the uniformed military or the defense research establishment—would expand the thesis summarized in proposition two to include an assessment of India’s supporting capabilities. These analysts would assert that proposition three in fact provided a more accurate depiction of what maintaining the option really entailed: It accepted the notion that India possessed nuclear weapons and perhaps maintained these weapons in disassembled form but highlighted the fact that New Delhi had not yet developed all the technologies, plans, procedures, and organizations that would be necessary for the effective conduct of nuclear operations in the event of a conflict.113 Accepting proposition three would therefore imply that India could still—somewhat truthfully—claim to be maintaining its option even if it possessed nuclear weapons in complete or disassembled form so long as it remained relatively unprepared for the wide variety of nuclear operations that it might have to undertake in a crisis.

It is generally difficult to identify individuals or agencies who would argue in favor of proposition four as it is described above. In most cases, this is because information about the status of India’s nuclear weapon stockpile is closely safeguarded. Indeed, while many sources have speculated about the size and quality of India’s arsenal, no public sources have authoritatively described either the disposition of that arsenal or the extent of India’s nuclear

112 See, for example, testimony of R. James Woolsey, Director, Central Intelligence Agency, U.S. Congress, Hearings of the Senate Governmental Affairs Committee on Nuclear Proliferation, 103rd Congress, 1st Session, February 24, 1993, p. 16.

operations architecture. The U.S. government, for example, described India’s posture as being one in which nuclear weapons could be readily fabricated at short notice but remained silent about the extent of auxiliary capabilities that India had in place for the conduct of nuclear operations. Subrahmanyam corroborated this view by concluding that “successive [Indian] Prime Ministers were technically truthful when they asserted that India did not have a nuclear weapon because the nuclear core and the rest of the weapon assembly were kept separate and, therefore, no weapon existed.” Subrahmanyam does not, however, describe whether any auxiliary capabilities were developed, asserting only that “since India was committed to no-first-use, the [need for] retaliation was not time critical.” This laconic remark presumably implies that the ancillary capabilities India required for nuclear operations either were not developed or existed only in embryonic form because the irrelevance of prompt retaliation allowed such capabilities to be either improvised or formalized whenever necessary.

Irrespective of what India’s nuclear posture precisely was for most of the post-1974 period, the consensus among observers—at least within the United States—was that India did in fact possess nuclear capabilities in some form. The consensus further held that these capabilities included, at least after 1990, the possession of unassembled nuclear weapons that were not deployed with their eventual end users—the armed services—and that were maintained without a large and complex set of ancillary capabilities dedicated to the conduct of nuclear operations. If this judgment is true, it would imply that—at least in terms of the definitions offered previously—India had weaponized its nuclear capabilities prior to May 1998, even if only in the narrow sense of the term. This conclusion seems to be

114 Office of the Secretary of Defense, Proliferation: Threat and Response, pp. 35–41.
116 Ibid.
118 Despite his earlier (1996) remarks, I. K. Gujral himself seemed to confirm this judgment when, in an interview granted after the May 1998 tests, he commented, “We were moving in this direction. If you look at the entire history of acquisition of this deterrence—the minimum necessary deterrent—it was a response to a situation... that was building around us from the eighties onward. I would say, to the credit of my
confirmed by the Kargil Review Committee Report, which notes that the “Indian nuclear programme was weapon-oriented at least since 1983”\textsuperscript{119} and, further, that weaponization itself, at least in the narrow sense, “took place between 1992 and 1994.”\textsuperscript{120} The disadvantages of this equilibrium—covertly developing the weapons themselves without comparable attention to both developing the formal structures associated with their management and publicly announcing the existence of these capabilities—have been described \textit{ad nauseam} by many Indian commentators, especially those who have sought to move the country’s national posture beyond maintaining the option to some other, more assertive form of nuclearization. The important point, however, is that most Indian analysts (and some even in the United States) agreed that this was in fact where the Indian nuclear program stood prior to the events of May 1998, although there were disagreements about the details pertaining to the country’s precise nuclear status.\textsuperscript{121} George Perkovich summed up this consensus accurately when he concluded in 1993 that “despite all their expense and effort . . . India and Pakistan have \textit{not} yet deployed nuclear arsenals or even declared themselves to be nuclear weapon states.”\textsuperscript{122}

The critical question therefore consists of explaining why maintaining the option did not constitute a stable equilibrium—that is, an end state that attracted neither exogenous nor endogenous pressures for change. Several scholars, both Indian and American, argued quite cogently that maintaining the option \textit{could} constitute an equilibrium position if India was not pressured by the international community, since absent such pressures this alternative—Alternative III—did not unduly prejudice Indian security, flexibility, or status and conse-

\footnotesize{\textsuperscript{119}From \textit{Surprise to Reckoning: The Kargil Review Committee Report}, p. 206.}
\footnotesize{\textsuperscript{120}Ibid., p. 205.}
\footnotesize{\textsuperscript{121}Joshi, “In the Shadow of Fear,” pp. 50–53.}
\footnotesize{\textsuperscript{122}Perkovich, “A Nuclear Third Way in South Asia,” p. 87.}
quently engendered few reasons for moving away from the status quo that emerged in the post-1974 period.\textsuperscript{123}

The claim that Indian security stood unimpaired as a result of simply maintaining the nuclear option derives from two arguments, both of which must be held conjointly if the claim is to remain effective. The first such argument is that \textit{all} nuclear weapons—irrespective of their size, type, or quality—embody such fearsome destructive power that their only rational purpose can be to avert war. As K. Subrahmanyan put it, "The power to impose intolerable pain or unacceptable destruction irrespective of the outcome of conventional military operations, and the certainty of destruction\textsuperscript{124} are what make nuclear weapons in general and nuclear deterrence in particular unique. Consequently, as the former Chief of Staff of the Pakistan Army, General Mirza Aslam Beg, opined, "It is not their numbers that matter, but [merely] the destruction that can be caused by even a few [such devices]\textsuperscript{125} that gives nuclear weapons their unique effectiveness. These beliefs, in turn, lead inexorably to the substantive claim that "a small number of such weapons are sufficient for mutual annihilation of countries, and this itself [provides] sufficient deterrence to cast doubts on the outcome of a nuclear military adventure."\textsuperscript{126}

The presumption that makes this claim tenable, of course, is that the nuclear weapons a state possesses actually work—that is, that they are capable of being successfully detonated under operational conditions and would produce the requisite yields sought by their designers. Only if this presumption held could the possessor be confident—irrespective of what others believed—that its nuclear holdings per se would ensure its national safety.

The second argument, which undergirds the logic of "maintaining the option" as a means of effectively preserving security, is that the destructiveness of nuclear weapons is so absolute that \textit{all} the re-


\textsuperscript{125}Cited in Perkovich, "A Nuclear Third Way in South Asia," p. 89.

quirements otherwise considered to be necessary for stable deter-
rence—enunciated doctrine, robust command and control, suitable
targeting, and adequate crisis management and war termination
planning—are rendered infructuous because the fearsome power
inherent in these devices produces a deterrent effect that cannot be
supplemented or undermined by any other institutional or
ideational artifacts pertaining to their use. As Marc Trachtenberg ar-
ticulated this claim, "The mere existence of nuclear forces means
that, whatever we say or do, there is a certain irreducible risk that an
armed conflict might escalate into a nuclear war."¹²⁷ Thus, the pres-
ence of nuclear weapons per se is seen to produce, as McGeorge
Bundy phrased it, a kind of "existential deterrence"¹²⁸ that suffices in
itself to discourage any adversary from challenging the values held by
their possessors even if the latter do not have "adequate" doctrines of
deterrence or possess all the physical and institutional instruments
that may be promulgated by some theory as necessary for effective
retaliation.¹²⁹

If this logic is carried one step further in the South Asian context, it
becomes obvious that "existential deterrence" may not require
"effective" weapons either—that is, weapons that will always suc-
cessfully detonate on command with certain assured yields, or even
weapons that physically exist. For if deterrence derives simply "from
a fear of escalation [that is inexorably] factored into [the] political
calculations"¹³⁰ of all states faced with a potential nuclear adversary,
even the mere suspicion that nuclear weapons might exist in the lat-
ter's armory should suffice to make all assailants "more cautious and

¹²⁷ Marc Trachtenberg, "The Influence of Nuclear Weapons in the Cuban Missile
¹²⁸ McGeorge Bundy, "Existential Deterrence and Its Consequences," in Douglas
MacLean (ed.), The Security Gamble: Deterrence Dilemmas in the Nuclear Age (Totowa,
¹²⁹ It should be noted, however, that Bundy's concept of existential deterrence, de-
developed as it was in the context of the U.S.-Soviet confrontation, was predicated on the
presence of truly large arsenals that were substantially survivable and built around the
enormously destructive power of thermonuclear weaponry. See Bundy, "Existential
¹³⁰ Trachtenberg, "The Influence of Nuclear Weapons in the Cuban Missile Crisis,"
p. 139.
more prudent than they otherwise would be.\textsuperscript{131} This prudence would be inevitable given the high costs of miscalculation that obtain in the nuclear realm, and by implication national security could be adequately preserved even when no nuclear weapons actually exist except in the psychological realms of suspicion and uncertainty. Satisfactory deterrence, in this reading, could thus be generated even by pure bluff or, as one analyst insightfully phrased it, through "the power of suggestion"\textsuperscript{132}—because any potential assailant confronted with even the possibility of unacceptable destruction would have few incentives to pursue a revisionist strategy that resulted in its own (or in mutual) destruction.

The implicit marriage of these two claims—the destructiveness of all nuclear weapons and the effectiveness of existential deterrence—gave rise to the expectation that India could maintain its nuclear option indefinitely while still adequately preserving its security. The simple suspicion that India might have nuclear weaponry in some form was seen as sufficient to prevent its competitors from mounting any critical challenges to its core interests.

Maintaining the option, by this logic, not only preserved India’s security but had the added advantage of preserving its flexibility as well, as it did not in any way abridge India’s right to change course at some point down the line. It could not, for example, restrict India’s abilities to pursue more assertive forms of nuclearization if the regional environment called for such measures, and it allowed equally for the possibility that India could give up its nuclear program entirely—without having to bear the costs involved in developing an arsenal in the interim—if it was reasonably satisfied that global trends toward nuclear disarmament were evolving at a reasonable pace. In fact, if married "to the moral, as distinct from [the] militarist, route to credibility and high global stature,"\textsuperscript{133} this alternative could, according to some Indian analysts, allow India to pursue its agenda with respect to global disarmament in an even more authentic and

\textsuperscript{131} Ibid.


\textsuperscript{133} Bidwai, "India and NPT Review: Grasping the Disarmament Nettle."
purposeful way. Further, India’s desire for status was also arguably not compromised by maintaining the option—for to the degree that the distribution of prestige in the international arena is determined by the possession of nuclear weaponry, the presumption of possession arising from maintaining the option allowed India to reap some of the benefits of being cast as a nuclear power. Moreover, to the degree that the distribution of prestige is determined by achievements other than nuclear capability, India’s claims to prestige were in no way diminished by continuing to maintain the option, at least so long as this course of action did not compromise the country’s ability to achieve those other goals which also regulate the international distribution of status.\footnote{Many Indians, however, have doubted whether this is in fact the case. As Partha Ghosh put it, “Nuclear parity is the easiest thing to achieve; the difficult task is to match the adversaries in economic development.” See Partha S. Ghosh, “Bomb, Science and the State,” \textit{The Hindu}, June 9, 1998.}

There is little doubt that maintaining the option, thus, had minimal effect on India’s flexibility and perhaps only ambiguous effects on its status. The ambiguity here derived mainly from the fact that the presumption of possessing nuclear weapons—a transparent consequence of maintaining the option—resulted in India’s subjection to the restrictions of several international technology-control regimes. To the extent that such restrictions prevented the country from being able to increase its economic and technological capabilities, maintaining the option contributed to decreasing India’s international status if this status was based on criteria other than the possession of nuclear weaponry. If the opposite was true, however, India’s desire for status remained more or less unhampered as a result of keeping the option open.\footnote{In effect, the traditional strategy of maintaining the option allowed India to split the difference between these two competing bases of status in international politics, since it was never quite clear to New Delhi whether India’s status inconsistency could best be resolved by either purely economic or purely strategic means. In a U.S.-Indian symposium in 1997, Kirit Parekh, one of India’s best development economists, framed this issue in the following way: I’ve been hearing various kinds of strategy arguments... but I just heard some economic arguments and I thought maybe I should join that. One argument was that maybe India should really develop, or at least sell, its option. I think one should also look in terms of what it is that India would gain if India were to go nuclear, which is being supported in various stages. One should factor in a few things: what are the gains and what are the costs in doing that? On the cost} The real difficulty with
sustaining Alternative III as a stable equilibrium therefore stemmed primarily from what was perceived to be its corrosive effects on the nation’s security. This perception—which had steadily gained currency among Indian elites, the higher leadership of the armed forces, and sections of the leading political parties, including the Congress Party—derived from the limitations inherent in the notion of existential deterrence as well as from specific features of India’s evolving strategic environment.

To begin with, the expectation that maintaining the option _qua_ option could subsist as an equilibrium end state presupposes that the thesis “nuclear weapons have an acceptably destructive power uniformly,” holds true. This thesis in fact made sense during the Cold War, when the superpowers’ arsenals were heavily populated with extremely high-yield weapons, any one of which could have caused “unacceptable” damage if used against a strategic target.  

In the case of India, however, also possessed large numbers of smaller nu-

side, of course, there’s obviously the cost of development of the hardware but also the cost of manpower. What is important is that some of the brightest and the best men go into this, and the opportunity cost of using them somewhere else should be properly reckoned in. Other costs would be that if you go publicly and overtly nuclear, there might be retaliation costs of various kinds. There may be trade sanctions, there may be technology embargoes. There may be reduction of inflows of aid, of foreign institutional investment, as well as of various kinds of capital flows, including foreign investment. One might be able to make some estimates of this.

On the other hand, there may be some gains, which also one should think about. Obviously, the most important would be the psychological satisfaction the Indian elites would get, that they’ve been able to thumb their nose at those bullying Americans. Then there will be technological fallout and spin-offs, which can be very sizable and substantial, I grant that. And the third would be security gains. From what I am hearing, security gains seem to be somewhat of a question mark; one is not clear what the security gains are. Maybe there are some, maybe there aren’t any, and there is a lot of discussion of it. I’m willing to believe that yes, there are some security gains by having a nuclear option. It seems to me that one can also have these technological spin-offs by doing all the research and all the work that it requires without going really fully nuclear. So I would think that the option in which you do all the development but not the last few steps of putting the system together seems to me to be, at least from an economist’s perspective, a better option [italics added].


136 For a succinct survey of the kinds of nuclear capabilities possessed by the United States and the Soviet Union during the height of the Cold War, see John M. Collins, _Imbalance of Power_ (San Rafael, CA: Presidio Press, 1978).
clear weapons, none of which could cause “unacceptable” damage but all of which ultimately relied for their effectiveness on the potential for escalation to truly horrific levels of violence. In such circumstances—when the arsenals consisted of tens of thousands of nuclear weapons, many thousands of which were high-yield devices—the notion of existential deterrence held a certain logic. After all, the damage that could be wrought by the discrete use of some of these weapons as well as the escalatory consequences of using many smaller weapons either simultaneously or in sequence created “existential” deterrence effects that transcended both the use doctrines and the organizational arrangements put in place by their possessors.137

A similar situation, however, did not obtain in South Asia. Nuclear weapons here do not exist in large numbers and, by the most reliable estimates, consist of a few tens in number, and none is believed to be of very high destructive capability. In fact, it is not at all clear even from the tests conducted in May 1998 whether Indian nuclear designs (or Pakistani designs, for that matter) have the destructive power to yield the “one target—one bomb” capability that most people, harking back to Hiroshima and Nagasaki, have come to associate with nuclear use (a misleading piece of imagery to begin with given the relatively small size of the Japanese targets in comparison with the cities of South Asia).138 All this implies that if Indian nuclear weapons have less-than-fearsome capabilities, and if these capabilities have existed in only limited numbers since 1974, the overwhelming destructiveness of nuclear weapons that undergirds the classic conception of existential deterrence may not have applied to South Asia. As General A. M. Vohra, arguing precisely this point, noted, “In a situation of low-level nuclear symmetry, the danger of a nuclear holocaust does not exist”139—and to that degree the presumed existence of nuclear weapons per se could not have provided the stability that the devotees of existential deterrence claim automatically exists.

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in the Indian subcontinent.\textsuperscript{140} This was particularly true because, as subsequent discussions will indicate, the effectiveness of India’s nuclear devices—especially that tested in 1974—was suspect to begin with and consequently could not have given New Delhi the assurance it needed to make existential deterrence a viable national security strategy.

Further, nuclear weapons, however powerful they may be, have political uses that go beyond simply deterring aggression.\textsuperscript{141} If this were the only goal sought to be serviced by nuclear weaponry, existential deterrence might suffice. But nuclear weaponry has other effects, among the more corrosive of which is the so-called stability-instability paradox.\textsuperscript{142} This paradox describes a condition whereby nuclear weapons prevent nuclear war, but only at the cost of opening the door to other conventional or subconventional conflicts. Because conventional conflict is perhaps both cost- and mission-ineffective in South Asia today, it has been replaced for the most part by unconventional wars taking the form of externally supported domestic challenges to state authority.\textsuperscript{143} Nuclear weapons in this context become subtle instruments of coercion, as they enable their possessors to support various dissatisfied groups involved in internal conflicts abroad with the expectation of relative immunity to retaliation. Deterrence breakdown in such situations may not occur primarily because of the premeditated choices of state rivals but rather because nonstate actors “capable of pressuring both India and Pakistan [and] unaffected by their nuclear capabilities”\textsuperscript{144} achieve success that they might not otherwise have enjoyed in the absence of foreign support. The unintended success of domestic dissidence could thus precipitate interstate conflicts even between nuclear-capable rivals because the state threatened with unacceptable political losses might feel

\textsuperscript{140} In fact, Vohra goes on to claim that “prima facie nuclear weapons of low yield may be used particularly if their use is restricted to tactical targets. Militarily the employment of such nuclear weapons would be very effective against say a bridgehead and there need be no collateral damage.”

\textsuperscript{141} Subrahmanyan, “Nuclear Force Design and Minimum Deterrence Strategy for India,” pp. 185–188.

\textsuperscript{142} Snyder, “The Balance of Power and the Balance of Terror.”

\textsuperscript{143} Tellis, Stability in South Asia, pp. 2–33.

\textsuperscript{144} Joeck, Maintaining Nuclear Stability in South Asia, p. 27.
compelled to use all the means at its disposal, including nuclear weapons, to stave off impending defeat.\footnote{For an argument as to why states threatened with loss are more likely to embark on extreme responses—including, for example, the use of nuclear weapons—see the discussion in Kenneth Watman, Dean Wilkening, John Arquilla, and Brian Nichiporuk, \textit{U.S. Regional Deterrence Strategies}, MR-490-A/AF (Santa Monica: RAND, 1995), pp. 13–26, and Dean Wilkening and Kenneth Watman, \textit{Nuclear Deterrence in a Regional Context}, MR-500-A/AF (Santa Monica: RAND, 1994), pp. 1–30.}

Deterring nuclear coercion of this sort, especially when carried out by either more risk-acceptant or more powerful adversaries, requires more than latent nuclear capabilities or even assembled weapons; to the contrary, it may require an explicit strategy that involves mounting credible threats. Mounting credible threats in turn requires more than completed nuclear weapons \textit{simpliciter}; it requires additional physical accoutrements, command systems, and decision rules that can tailor those threats to the challenges expected, the ability to assess and choose between multiple alternatives, and the development of strategies and institutions for crisis management and conflict termination. In other words, responding to nuclear coercion may require capabilities that move beyond simply maintaining a nuclear option.\footnote{Joeck, \textit{Maintaining Nuclear Stability in South Asia}, pp. 35–64.} This issue becomes particularly relevant because existential deterrence, if it works at all in the presence of modest nuclear capabilities, provides adequate deterrence only so long as deterrence does not break down. This may sound tautological, but it is not. So long as the competing political wills in any relationship are not actively engaged in violence—which may occur through deliberate choice, accident, irrationality, or miscalculation—or, when engaged in violence, do not face the prospects of unacceptable losses, existential deterrence may suffice to preserve security. Under all other conditions, the limitations of existential deterrence will be seen in stark relief, as even nuclear-capable states will have to do something “more” than simply rely on the psychological benefits of presumed nuclear possession when faced with either the possibility of a serious nuclear crisis or the prospect of a serious political loss.\footnote{See the apt discussion in Dinshaw Mistry, “What If Deterrence Fails?” available at http://www.ipcs.org/issues/articles/132-ndi-dinshaw.html.} The reliability of existential deterrence as an effective long-term equilibrium thus becomes suspect especially in a region where the prospects of
interstate crises are ever-present thanks to the active and ongoing security competition between India and Pakistan and the latent suspicions between India and China.

Given the modest nuclear capabilities residing in South Asia and the limitations of existential deterrence as a security strategy, Alternative III—continuing to maintain the nuclear option *qua* option—could have remained a stable equilibrium only so long as the following conditions were obtained:

1. There were no attempts at nuclear coercion through unconventional forms of violence;
2. There were no crises that could make demands beyond the ability of India’s traditional nuclear posture;
3. The nuclear programs of India’s principal competitors, Pakistan and China, were relatively stable and not increasing either in size or in effectiveness;
4. Indian security managers remained confident about the operational effectiveness of their latent nuclear capabilities over time;
5. The global nuclear regime remained relatively tolerant of India’s continued maintenance of its nuclear option; and
6. Indian decisionmakers remained generally sanguine about both the intensity of the security threats facing the country and their ability to contain these threats by means other than nuclear weapons.

From India’s point of view, however, all these conditions steadily eroded in varying degrees during the last decade—and consequently it turned out to be only a matter of time before New Delhi embarked on a course of action that would move it beyond the traditional posture of keeping the option open. Each of these issues will be discussed briefly below.

To be sure, India has thus far not faced the contingency of successful nuclear coercion carried out through unconventional forms of violence, but this is not to say that it has not been tried. In fact, the support Pakistan extended to the Sikh insurgency during the latter half of the 1980s and to the Kashmiri insurgency since the early
1990s remain good examples of attempted nuclear coercion.\footnote{A useful survey—from an Indian perspective—of past attempts at Pakistani coercion through unconventional means can be found in Vijay Karan, \emph{War by Stealth} (New Delhi: Viking, 1997). For a good survey on how Pakistani nuclear coercion fits into Pakistan’s larger grand strategy, see Eric Arnett, "The Future Strategic Balance in South Asia," in Herro Mustafa (ed.), \emph{The Balance of Power in South Asia} (Abu Dhabi, UAE: Emirates Center for Strategic Studies and Research, 2000), pp. 95–108.} None of these contingencies, however, was threatening enough to require that India change its nuclear posture or mount credible counterthreats necessitating the brandishing of its nuclear weaponry. In large part, this is because India’s large size and significant reserve of domestic resources allowed it to absorb the costs of Pakistan’s needling without recourse to more provocative alternatives.\footnote{Tellis, \emph{Stability in South Asia}, pp. 47–50.} At the same time, Pakistan’s own relatively risk-averse behavior also helped preempt the need for any change in India’s nuclear posture. There is no guarantee, however, that future domestic challenges to the Indian state will echo those of the past or that India will be able to undercut future attempts at nuclear coercion simply by exploiting its relatively large size, its significant economic and conventional military capabilities, and its great political endurance. Another significant uprising in Kashmir or elsewhere—especially one abetted by a more risk-acceptant Pakistani leadership that “persuade[s] itself that India has been battling cross-border terrorism without exercising the right of hot pursuit, as any other country would have, because of its fear of the Pakistani bomb”\footnote{R. D. Kwaatra, “From Deterrence to Blackmail: Pakistan’s Nuclear Agenda,” \textit{Indian Express}, January 20, 1996.}—could thus result in a situation where New Delhi would need an extensive menu of responses, including the ability to issue credible nuclear threats. And while it is unlikely that Pakistan would renew its support for domestic Indian dissidence in such a way as to provoke these threats, such a resumption of support cannot be ruled out by Indian elites over the long term, especially if a potentially successful Indian achievement of hegemony provokes Pakistan to undertake some dramatic but risky attempts at counteraction.\footnote{Subrahmanyam, “Indian Nuclear Policy—1964–98,” pp. 48–49.}

Even more significant than Pakistan’s choices, however, would be China’s future decisions with respect to nuclear coercion—for if
China, having successfully completed its economic renewal, chose to pursue its desire for “national reunification” by supporting domestic insurgencies in India (as was the case throughout the 1960s and 1970s in the Indian northeast), it is uncertain whether New Delhi would believe that simply maintaining the nuclear option could provide it with sufficient cover to ward off Chinese aggression. To be sure, such aggression is by no means inevitable and depends largely on the quality of Sino-Indian relations over time, the character of internal Chinese politics, and the larger patterns of security competition in Asia. It does, however, remain one possible outcome, especially if a belligerent Chinese leadership calculates that its greater economic and military (including nuclear) capability provides it with substantial political leverage vis-à-vis India and leaves New Delhi with few of the advantages the latter enjoys in similar circumstances vis-à-vis Pakistan. Indeed, the prospect of such an eventuality does concern New Delhi, and although most Indian policymakers are currently circumspect about the Chinese threat—George Fernandes’ exceptional remarks in May 1998 notwithstanding—the future of the Chinese challenge 20-odd years out appears more disconcerting. In large measure, this is because many Indians perceive that China’s incentives to maintain its reticence with respect to the disputed border will lessen once it has successfully concluded its economic reform program and become a true superpower. Even more perniciously, the very anticipation of such future discord—assuming that China’s economic ascendance and military growth continue on a more or less even keel—has become a powerful motivating force that argues for a shift in India’s nuclear posture purely as a prudential measure long before any significant Chinese challenge to New Delhi becomes palpable.

A similar set of considerations relates to the occurrence of nuclear-shadowed crises. Thus far, India has not had to confront any significant nuclear crisis. Indeed, the country’s worst defeat in war occurred in 1962, well before it possessed any significant nuclear

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152 Indian concerns here are usefully summarized in Subrahmanyam, “India’s Security: The North and North-East Dimension,” pp. 8-22.


154 Mohan, “India, China Power Equations Changing.”
capability (and also before it faced any nuclear threats). Similarly, the
two political crises that took place during the nuclear era in South
Asia made few demands on India’s nuclear capabilities; the 1987
Brasstacks crisis, for example, involved no nuclear threats, and even
the veiled warnings allegedly communicated by A. Q. Khan in his
celebrated interview of January 28, 1987, were not made public until
well after the crisis had abated. Even if Khan’s threats had been
privately communicated to New Delhi before the crisis ended, how-
ever, India would have been unlikely to have taken them seriously
because almost all senior Indian nuclear scientists at that point be-
lieved that Pakistan had no nuclear capabilities worth the name.
Thus, irrespective of what Pakistani capabilities actually were, they
were not seen (or at least were unlikely to have been seen) as relevant
to India’s immediate strategic choices.\footnote{A good assessment that
affirms the irrelevance of nuclear weaponry during the
1987 crisis can be found in Devin T. Hagerty, \textit{The Consequences of Nuclear Proliferation: Lessons from South Asia} (Cambridge, MA: MIT Press, 1998), pp. 91–116.}

A different kind of problem materialized during the 1990 crisis. Al-
though precise details about these events are classified, several pub-
lic reports suggest that Pakistani nuclear activities were detected
during this crisis.\footnote{The most widely publicized, albeit inaccurate, report about these events re-
 mains Seymour M. Hersh, “On the Nuclear Edge,” \textit{The New Yorker}, March 29, 1993.} And while it is unclear whether India perceived
those developments or whether it was even intended to be made
aware of them, suffice it to say that the United States reacted and in-
tervened diplomatically to defuse the situation. India for its part ap-
peared to be unconcerned about Pakistan’s actions, since as one au-
thoritative source described, “there was a top secret analysis in India
on the probability of the Pakistani nuclear threat and it was con-
cluded that it was not very significant.”\footnote{Subrahmanyam, “Indian Nuclear Policy—1964–98,” p. 45.} Whatever else New Delhi
may have learned from that crisis, its \textit{public} appearances at the time
suggested that it did not perceive the need for any rapid revision of
its traditional posture toward nuclear weaponry. There is now good
evidence, however, that key thresholds relating to weaponization
were in fact crossed sometime in the aftermath of the 1990 crisis,
when India’s strategic enclaves formally completed the process of
fabricating nuclear weapons as a prudential response to future nuclear threats that might be levied against India.\textsuperscript{158}

The anticipation of future crises seems to have further reinforced India’s commitment to acquire more manifest forms of nuclear capability. In part, this is because the technologies of warfare in the subcontinent have progressively changed from air-breathing platforms to ballistic missiles that place a high premium on rapid responsiveness and preplanned operations.\textsuperscript{159} Even more significant, however, is the fact that future nuclear crises involving Sino-Indian relations—irrespective of the technologies involved—would be entirely different from those that have occurred in the context of Indo-Pakistani encounters. Specifically, a crisis here would involve a declared nuclear power with capabilities several orders of magnitude greater than those of India. Consequently, any confrontation between Beijing and New Delhi would be seen as inevitably redounding to the disadvantage of the latter were India to persist with its strategy of simply maintaining the option, at least in the sense understood prior to the events of 1990. As former Chief of Army Staff General K. Sundarji argued:

The argument that China has not employed nuclear blackmail against us from 1964 to date and therefore is unlikely to do so in the future is questionable. During this period, China was a fledgling nuclear weapon power with missiles deployed in soft ground launchers, which were totally vulnerable to Soviet nuclear attacks. . . . Today, she has nuclear-powered submarines capable of carrying nuclear ballistic missiles. . . . With the passage of time this capability will continue to grow, and with the acquisition of a minimum deter-

\textsuperscript{158}In his revealing essay, “Indian Nuclear Policy—1964–96,” K. Subrahmanyan states that Rajiv Gandhi issued the orders to weaponize India’s nuclear capability in the aftermath of the Third U.N. Special Session on Disarmament in 1988, but that “in the period 1987–90, India [remained] totally vulnerable to the Pakistani nuclear threat.” When India formally completed the process of fabricating its weaponry is not clear from this published account, but it leaves no doubt that at least by 1991, the process of weaponization, understood in the narrow sense again, was well under way. See Subrahmanyan, “Indian Nuclear Policy—1964–96,” pp. 43–50. In From Surprise to Reckoning: The Kargil Review Committee Report, a document substantially authored by K. Subrahmanyan, it is revealed officially for the first time that India did in fact weaponize its nuclear capabilities sometime between 1992 and 1994. See From Surprise to Reckoning: The Kargil Review Committee Report, p. 205.

\textsuperscript{159}Jeeck, Maintaining Nuclear Stability in South Asia, pp. 47–48.
rent in the second strike mode against the USSR and the USA, it is probable that China might indulge in nuclear blackmail when dealing with nonnuclear countries. 160

The implications of this argument, among many others, for Sundarji and others like him is that India ought to change its traditional nuclear posture of simply maintaining the option—and in a hurry. 161

While concerns about nuclear coercion and nuclear-shadowed crises were critical enough to precipitate silent changes in India’s nuclear posture at least since the early 1990s, what became increasingly obvious beginning in the mid-1990s was that the challenges imposed by conditions three to six, taken together, would lead these changes to become the focus of intense public scrutiny.

India’s perception of Pakistan’s and China’s growing strategic capabilities was already sketched out in the previous chapter. Throughout the 1990s, however, Indian policymakers were steadily barraged by news reports, drawn from leaked American intelligence documents, vividly describing the growing nuclearization taking place around the country’s periphery. Where Pakistan was concerned, for example, Indian security elites—feeding on a steady diet of stories appearing in the American press—constantly sought to remind their government about the new improvements in Islamabad’s enrichment capabilities flowing from China’s sale of the more sophisticated samarium-cobalt ring magnets to Pakistan; the development of a new uranium enrichment facility at Golra Sharif with Chinese assistance; and Islamabad’s most recent efforts at simultaneously pursuing the “plutonium route” in order, as one Western analyst phrased it, “to develop nuclear weapons that are lighter and easier to miniaturize than ones based on HEU.” 162 The steady improvement in delivery capabilities from aircraft to missiles like the M-11, the Ghauri, and the Shaheen, all of which could in principle


carry Pakistan’s basic nuclear designs, also raised concern, since they allowed for the assured interdiction of most high-value targets deep within the Indian heartland while simultaneously signaling that New Delhi “not only ha[d] frittered away its twenty-year lead over Pakistan, but ha[d] fallen substantially behind it.”

Yet even these spectacular increases in prowess paled in comparison to those Indian commentators perceived China as having made during the same period. These included improvements in nuclear modernization resulting from a series of low-yield nuclear tests concluded just prior to the CTBT; the significant infrastructure modernization undertaken throughout the Chinese mainland, particularly along the Himalayan border; the dramatic upgrades in command-and-control systems regulating both nuclear and conventional forces; and, finally, doctrinal modifications that, following Western analyses, were seen as heralding a transition to a “limited” deterrence strategy that would diminish the incredibility of those strategic threats on which weaker competitors like India had long relied for their own safety. These developments were summed up by one Indian military analyst who declared that “the PLA as constituted today is a palpable first-order strategic threat [to India] now and not in the future.”

Although India’s politicians probably did not understand the significance of many of these technical details, the same could not be said of the higher bureaucracy in New Delhi. Civilian bureaucrats in the Ministry of Defence, the DRDO, and the office of the Scientific Adviser to the Defence Minister clearly grasped the implications of the nuclear modernization under way in both Pakistan and China. Since these details were probably transmitted to the Cabinet through various option papers prepared by the relevant ministries, the dominant impression India’s political masters came away with was that of growing Pakistani and Chinese nuclear capabilities as well as increasing collusion between Pakistan and China in support of a

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subtle encirclement strategy masterminded by Beijing.\textsuperscript{165} This encirclement—executed through the creation of a nuclear-armed rival within South Asia, a refusal to resolve outstanding territorial disputes with New Delhi, and the gradual penetration of Myanmar—was perceived as being intended to lock India into the confines of the subcontinent by generating security challenges that served to distract New Delhi when it could otherwise be preparing to play a larger role in Asia and beyond.\textsuperscript{166} Irrespective of the veracity of these perceptions, the net result was that many Indian policymakers began to perceive malign intentions on the part of China—a problem that only became more disconcerting when it was recognized that the United States would play no helpful role either by thwarting the growing Sino-Pakistani collusion on the nuclear issue or by offering increased reassurance to New Delhi in the form of expanded political, technological, or strategic ties.\textsuperscript{167} Faced with such a “deteriorating” regional environment—especially one in which India’s decisionmakers became increasingly conscious of the country’s new vulnerability to standoff attack from Pakistan—New Delhi’s traditional nuclear posture became a candidate ripe for public change.

This prospect of change was only magnified by an unnerving scientific reality that several Indian policymakers were aware of but could never bring themselves to publicly admit: that India’s 1974 test was a preliminary but less-than-successful experiment that accordingly called into question the very basis for believing that the alternative of “keeping the option open” could remain a viable form of existential deterrence in perpetuity. In point of fact, the first Indian test in 1974 was a “nuclear explosion” but was emphatically not a

\textsuperscript{165}The most sophisticated treatment of the “encirclement” thesis can be found in Yacov Verrzberger, \textit{China’s Southwestern Strategy: Encirclement and Counterencirclement} (New York: Praeger, 1985). This theme would be reiterated by Indian policymakers in formal statements released during the May 1998 nuclear tests.


“nuclear weapon test explosion.” To the contrary, it essentially represented the culmination of an experimental effort—dubbed the Subterranean Nuclear Explosion Project and sanctioned by Indian Prime Minister Lal Bahadur Shastri in 1964 after the first Chinese nuclear test—whose objective was to demonstrate that Indian nuclear science had reached the point where it could exploit the processes of nuclear fission to initiate the explosive release of energy. In effect, this test was aimed at establishing a proof of principle and, despite its larger political implications, primarily represented an attempt by the atomic energy establishment to validate the maturity and sophistication of its scientific skills before the Indian political leadership and the country at large. Consequently, as W.P.S. Sidhu accurately noted, “Indian scientists have always referred to the plutonium-implosion package that was detonated in 1974 as a ‘device’” because it was neither intended to be nor had it reached “the status of an operational weapon” at the time.

Dr. Raja Ramanna, the chief scientist under whose direction the test occurred, subsequently claimed that the 1974 explosion did involve an actual nuclear weapon. This claim was repudiated, however, by Dr. Homi Sethna, the former Chairman of India’s AEC under whose aegis the entire Indian nuclear program operates—who succinctly and accurately asserted that the device tested in 1974 had neither the shape nor the portability required for use as a weapon of war. Indeed, Rammana’s claim—which was obviously motivated by a desire to influence political debates within the country—hinges on the notion that the 1974 device confirmed the theoretical and physical characteristics required for a successful nuclear detonation and hence ought to be considered a usable “bomb.” Yet the fact remains that this design was of greater interest to physicists than to

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169 For an excellent survey of the events leading up to and surrounding this event, see Perkovich, India’s Nuclear Bomb, pp. 60–189.


171 Ibid.

weaponeers in that the former could declare any device that successfully generated fission energy through a controlled detonation to be an effective "nuclear bomb," whereas the latter would reserve such an appellation only for a device that conformed to certain shape, weight, and stability parameters and that would detonate successfully on command in the face of all the stresses associated with the operation of its carrier system.\textsuperscript{173}

In point of fact, India certainly did not possess a nuclear bomb of this sort in 1974, and the test conducted that year was not designed to validate any dedicated weapon design. Consequently, Pokhran I remained a "nuclear explosion" but was not a "nuclear weapon test explosion" of the kind that would have generated confidence in the claim that India possessed a usable nuclear weapon requiring no further testing for its deterrent efficacy. Even more problematically, however, the 1974 test, while validating the design of the implosion system in principle, failed to produce the kinds of yields that its designers had intended or that the popular literature has attributed to it. This fact has never been publicized by Indian policymakers for obvious reasons—it would require that they engage in further nuclear testing despite the great political costs the country incurred in the aftermath of its first test—but news of the less-than-desirable yields generated by the 1974 explosion nonetheless circulated \textit{sotto voce} in the Indian strategic community for more than two decades. One Indian commentator, in fact, baldly asserted that

The test in Pokhran in 1974 was basically a "dud." Other than exploding, it failed on almost all other scientific counts and, most important, it yielded very little data. It would have been very difficult to serialize production of nuclear weapons on the basis of the 1974 test, and—in any case—the reliability of those weapons would have been in question.\textsuperscript{174}

\textsuperscript{173}In the United States, these variables are termed "military characteristics" and are prepared by the Department of Defense for each nuclear warhead taking into account its intended delivery system. For a good account of how nuclear testing fits into this process, see P. S. Brown, "Nuclear Weapons R&D and the Role of Nuclear Testing," \textit{Energy and Technology Review}, UCRL-52000-86-9 (September 1986), pp. 6–18.

While the claim that India’s 1974 test was a “dud” is clearly hyperbole—the test did, after all, meet Mark’s criterion for a successful nuclear explosion, defined as producing “at least three orders of magnitude more energy per pound than would be available from high explosives”\textsuperscript{175}—the fact remains that it provided a much smaller yield than the 10–15 kt commonly reported by most public sources. How much smaller has never been authoritatively stated, although one 1981 Indian news report claimed that “some sources at the BARC maintain that independent measurements by some scientists put the yield at Pokhran to be as low as 2000 tons of TNT.”\textsuperscript{176} As recently as 1998, this conclusion was corroborated by one of India’s leading journalists, who noted that “there has been no explanation of the low-yield, nor refutation of the story—long known in some circles—that Pokharan-I’s yield was not 10–20 kt as claimed but 2–4 kt.”\textsuperscript{177} This failure to secure the desired yield through a single test explosion should not be surprising, however, since as one authority on nuclear weapon design noted, “the principal uncertainty to be addressed by a weapon test explosion . . . [is] . . . that of yield (or of performance in a complete delivery system)”\textsuperscript{178} Developing a nuclear weapon that consistently provides assured yields usually requires many hot tests or, at the very least, numerous heavily instrumented high-explosive and/or hydrodynamic experiments—and even these may be insufficient to resolve the problems associated with the timing of initiation, which often accounts for the less-than-desired yields in a nuclear explosion. Not surprisingly, the United States alone—by official count—conducted 1054 low- or full-yield hot tests simply to certify fewer than 100 nuclear designs as reliable enough for stockpiling in its arsenal during the Cold War.\textsuperscript{179} Cert-


\textsuperscript{176}Cited in Perkovich, \textit{India’s Nuclear Bomb}, p. 182, with a detailed discussion of this question on pp. 181–183.


\textsuperscript{178}Westervelt, “The Role of Laboratory Tests,” p. 51.

tainly India could not be expected to better this record with a single nuclear experiment.

It is not remarkable, therefore, that the 1974 explosion, which confirmed that India’s device had in fact gone supercritical and had by implication produced a nuclear explosion, also confirmed that the design of the implosion system was not as good as it might have been. Consequently, what began as an experiment turned out to be a proof test that forced India’s nuclear design establishment to work further on improving the yield while reducing the weight and size of the overall device.\textsuperscript{180} These developments, however, created new structural uncertainties in that Indian security managers could never be confident that their principal nuclear weapon design would be reliable—i.e., that it would assuredly generate the yields its creators sought or that the design improvements undertaken after 1974 would actually produce the intended corrective effects.\textsuperscript{181} This concern about the efficiency of India’s weapons haunted the country’s political and scientific leadership, or at least those who cared, for the better part of the post-1974 period—and while periodically there were strong political reasons for resuming nuclear testing, it is important to remember that the 1974 experiment also generated considerable technical uncertainties that had to be resolved if India was to possess an effective nuclear arsenal, be it real or virtual, at some point in the future. Not surprisingly, one of India’s premier nuclear scientists has thus gone on record as asserting that, irrespective of the political imperatives involved, the nuclear tests conducted in May 1998 “were [an] absolute technical necessity.”\textsuperscript{182} At the same time, Indian Foreign Minister Jaswant Singh—alluding to precisely the political consequences of the technical uncertainty arising from the 1974 test—asserted that “the restraint exercised for twenty-four years, after having demonstrated our capability in 1974,


\textsuperscript{181}In fact, if the corrective measures focused primarily on improving the timing of initiation, the effectiveness of these measures could be conclusively validated only by hot testing in that both hydrodynamics and neutronics could be assessed by laboratory experiments, but ensuring appropriate timing of initiation and guaranteed device yields usually require hot testing of one sort or another. See Westervelt, “The Role of Laboratory Tests,” pp. 47–58.

\textsuperscript{182}Girish Kumar, “Pokhran-II Is a Turning Point in Raising National Morale” (interview with Anil Kakodkar), \textit{The Times of India}, July 30, 1998.
is in itself a unique example. Restraint, however, has to arise from strength. It cannot be based upon indecision or doubt. The series of tests recently undertaken by India [in 1998] has led to the removal of doubts. The action involved was balanced, in that it was the minimum necessary to maintain what is an irreducible component of our national security calculus."\textsuperscript{183}

The uncertainties about the efficiency of India's principal device design, primarily with respect to assured yield, would probably have been accommodated by India's policymakers had they been convinced that the global nuclear regime would not unduly penalize New Delhi for retaining its ambiguous status indefinitely. Consequently, successive Indian Prime Ministers toyed with the idea of resuming nuclear testing beginning in 1982–1983 but did not actually do so, motivated as they were primarily by a desire to secure domestic political gains. In 1995, however, a series of changes in the global nuclear regime marked the beginning of the end of India's nuclear ambiguity on purely strategic grounds. The indefinite extension of the NPT in 1995 in fact turned out to be the first step in what India perceived to be a growing constriction of its ability to maintain its nuclear option.\textsuperscript{184} New Delhi resisted the indefinite extension of the NPT on the grounds that such an outcome would allow the existing nuclear weapon states to disregard their treaty obligations to work toward universal disarmament without incurring serious penalties. In effect, the NPT's indefinite extension implied that the world would be permanently divided into nuclear "haves" and "have-nots"—and whatever New Delhi's discomfort with global discrimination may previously have been, Indian security managers saw the permanent ratification of this divide as a strategic threat insofar as it provided neither benefits nor legitimacy for countries that chose to maintain an ambiguous nuclear status indefinitely.\textsuperscript{185} Moreover, since only three countries were affected by these developments—Israel, India, and Pakistan—and since Israel was presumed to be for all practical purposes a de facto American ally, Indian policymakers read U.S. ef-


\textsuperscript{185}Ibid., pp. 1114–1116.
forts with respect to the NPT extension as part of a larger nonproliferation initiative directed primarily at India and Pakistan. What made the effort to secure such an extension all the more unsettling from New Delhi's standpoint, however, was the persistent undercurrent of international reporting suggesting that even as the legitimate nuclear powers sought to provide the nonnuclear powers political assurances against nuclear use (as a quid pro quo for support of the permanent extension of the NPT), they not only continued to develop new nuclear weapon technologies but also attempted to devise more flexible and effective ways of using those technologies to counter a new range of "regional nonproliferation threats." One Indian commentator, reiterating the dominant view among Indian policymakers at the time, thus concluded that "given their plans for new warheads and weapon-testing facilities, the call by the nuclear haves for an unconditional extension of the NPT appears hypocritical at best and sinister at worst. Their 'security assurances' are pitifully inadequate.”

This perception was even more strongly reinforced by U.S. efforts to conclude the CTBT in the aftermath of the indefinite extension of the NPT. One prominent Indian analyst assessed these efforts in the following terms: "The United States has been moving decisively to impose qualitative and quantitative limits on India's nuclear capabilities. After failing to constrain India's nuclear programme through a regional nonproliferation framework, the Clinton Administration has decided to use the global route to cap India's nuclear programme." By this analyst's reading, the CTBT posed an even greater threat to the viability of the Indian nuclear option than the NPT because the former treaty, by forbidding further nuclear testing, would prevent New Delhi from ever being able to achieve confidence in the technical effectiveness of its nuclear weaponry—an issue of some concern given both the problematic legacy of the 1974 test and the significant improvements in weapon technology that India would...

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187Ibid.
potentially require vis-à-vis China in the future.\textsuperscript{189} The inability to
test its improved devices at some future point could render the Indi-
an nuclear deterrent inutile, at least as far as the confidence of the
national leadership in its nuclear capabilities was concerned. This
constraint became even more worrisome, India's premier strategic
commentator argued, because the treaty's effect of capping India's
nuclear weapon capability would not extend symmetrically to Pak-
istan "because Chinese-Pakistan transactions could include
complete [nuclear] weapons [transfers], since there is no verification
system to monitor that such transactions do not take place"\textsuperscript{190}
among signatories to the treaty.

Consequently, it was not surprising that in the negotiations lead-
ing up to the treaty in Geneva in 1996, "India for the first time stated
that the nuclear issue is a national security concern . . . and advanced
that as one reason why [it] was unable to accede to the CTBT."\textsuperscript{191} In
any event, India would probably have been content to quietly sit out
the CTBT with no subsequent changes in its nuclear posture (just as
it had done earlier with the NPT) had Article XIV's "entry into force"
clause—introduced at Russian, British, and Chinese insistence—not
surfaced at the last minute in the draft text.\textsuperscript{192} In essence, this clause
made the treaty's effectiveness contingent on the accession of 44
states—including India—that were specially named in Annex 2 of the
document, providing for a review conference in 1999 if the treaty had
not entered into force three years after the date of the anniversary
of its opening for signature. The purpose of this review conference was
to enable "the States that have already deposited their instruments of
ratification" to examine the extent to which the basic objectives of
the treaty had been met and to "consider and decide by consensus
what measures consistent with international law may be undertaken
to accelerate the ratification process in order to facilitate the early
entry into force of this Treaty." The prospect of such a review

\textsuperscript{189} Raj Chengappa, "Playing the Spoiler," \textit{India Today}, September 15, 1996,
pp. 76–78.

\textsuperscript{190} K. Subrahmanyam, "India and CTBT," \textit{The Times of India}, February 21, 1996.

\textsuperscript{191} Singh, "Against Nuclear Apartheid," p. 46.

\textsuperscript{192} Official Indian perceptions of the CTBT and the effects of the "entry into force"
clause have been detailed in Ghose, "Negotiating the CTBT: India's Security Concerns
conference, which under the terms of the treaty could be repeatedly convened "at subsequent anniversaries of the opening for signature of this Treaty, until its entry into force," greatly agitated most Indian strategic elites, who feared that this mechanism was little more than a back door to enforce the treaty by a majority vote if accession to the document by some of the 44 states specified in Annex 2 was not forthcoming in the interim. Indeed, one former Indian Foreign Secretary—echoing the sentiments of many Indian policymakers—publicly asserted that the "one feature of the CTBT which is different from the NPT is that once the CTBT as proposed by the United States is adopted, even countries not adhering to the treaty will be subject to sanctions [under Article XIV]." To be sure, the United States attempted to assure India, through a series of diplomatic notes, that coercive sanctions were emphatically not the purpose of the review conferences, but such assurances failed to allay Indian suspicions—and many Indian policymakers thus began to view the interval between the CTBT's conclusion and the convening of the first review conference as the closing window of opportunity within which India would have to change its traditional nuclear posture. Brajesh Mishra, for example—then a member of the BJP's cell on foreign affairs and currently Principal Secretary to Indian Prime Minister Atal Bihari Vajpayee—argued prophetically, while commenting on the Congress government's stand on the CTBT, that India should "immediately" go ahead with 'one or two nuclear tests' to help develop 'nuclear warheads for our missiles... [since] the longer we wait, the more dangerous will it be for us, and the longer we delay (carrying out the tests), the more pressure will be brought on us." Other Indian analysts argued for less dramatic but equally significant responses, enjoining New Delhi "to declare that India is a

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193 The relevant text of the treaty from which these quotations are drawn is available at http://www.fas.org/nuke/control/ctbt/text/ctbt1.htm.
195 The most apt characterization of Indian fears about the "entry into force" clause can be found in Mohammed Ayoob, "Nuclear India and Indian-American Relations," Orbis, 43:1 (Winter 1999), p. 66.
196 India: BJP Demands "Two Nuclear Tests" to Develop Warheads, FBIS-NES-96-155, August 9, 1996.
nuclear weapons state and that it reserves the right to acquire, improve and augment nuclear weapons.\textsuperscript{197}

As it turned out, the BJP government accepted both suggestions on May 11, 1998. But with sentiments such as these dominating India’s political discourse—sentiments that grew out of a fear that India’s ability to maintain its option indefinitely was steadily eroding even as grave uncertainties persisted with respect to the technical efficacy of its weaponry—it was only a matter of time before India shifted from its traditional posture of maintaining the option. When these sentiments were combined with other variables—such as concerns about the growing nuclear and missile programs in Pakistan and China, the perceptions of increased Sino-Pakistani technological collusion, the United States’ apparent apathy with respect to enforcing its own nonproliferation laws vis-à-vis Beijing, and other, more nebulous fears about future nuclear coercion and nuclear crises involving China and Pakistan—it became increasingly obvious that the old posture of maintaining the option was poised for change. When this change would occur and what form it would take could not yet be discerned, but in retrospect it appears evident that at least the timing of change would be determined simply by an alteration in the last condition identified earlier: the ascendancy to power of the BJP, a more risk-acceptant party that simply did not believe either that the security threats facing the country had dissipated or that India possessed the ability to defuse those threats by any means other than nuclear weapons.\textsuperscript{198}

At the time of the BJP’s accession to power, the policy consequences of these beliefs were neither obvious nor self-evident, even to Indians. In the aftermath of India’s nuclear tests, many American commentators, including elected officials, heaped scorn on the U.S. intelligence community for failing to see the obvious: that the BJP-led coalition’s own National Agenda for Governance promised to “exercise the option to induct nuclear weapons.” Yet however clear these promises seem in retrospect, they were certainly not unmistakable at the time they were first issued. \textit{India Today}, for example—widely regarded as one of the country’s most respected news-


magazines—summarized the National Agenda with the headline “Words, Words, Words: The BJP-Led Alliance’s National Agenda for Governance Confuses Rather Than Clarifies.” Commenting on what it termed “the [BJP’s] breathtaking promise to ‘re-evaluate the nuclear policy and exercise the option to induct nuclear weapons,’” the magazine wryly asserted that “the second clause only makes the first one entirely redundant.” Indeed, even the doyen of India’s strategic commentators, K. Subrahmanyam, was not impressed; writing soon after the NDA government’s ascension to office, he concluded after extensive analysis of the nuclear posture that “there may not be a radical change in policy between the policy of the earlier governments and the National Agenda.” Other Indian analysts offered similar judgments. P. R. Chari, for example, noted that “the BJP’s nuclear agenda has not attracted much attention” and offered three plausible reasons why this was in fact the case:

First, nobody takes election manifestos seriously in India. Experience informs that these declarations of intent are designed to garner votes. Politicians in power have more important things to do than pursue election promises. Second, BJP leaders have reiterated their nuclear intentions for years. This pursues the line defined by its earlier avatar [incarnation]—the Jan Sangh—that had also advocated its favouring India’s nuclear weaponization. Third, the BJP in power has acted very differently from their rhetoric when out of power. Apropos, the BJP and the Jan Sangh were in power in earlier coalition governments. Why did they not press for India weaponizing its nuclear programme?

Reasoning from this rather sensible premise, Chari concluded that “the BJP may not change India’s nuclear policy,” in part because “opinion is sharply divided among the experts whether more nuclear tests are necessary . . . for India to weaponize its ‘open’ nuclear op-

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202 Ibid.
tion.\textsuperscript{203} If these assessments are anything to go by, the BJP’s decision to resume nuclear testing came as a surprise even to many Indians—who, with the exception of some commentators on the Left, would doubtless have agreed with one analyst who exclaimed, “The unthinkable has happened. India’s decision to conduct three tests, including one thermonuclear test, has surprised most and shocked at least a few.”\textsuperscript{204}

That these decisions occurred at the time they did, however, can be explained mainly by the risk-accepting propensities of the BJP in contrast to India’s other political parties. To be sure, the various factors analyzed earlier all contributed to the perception that India’s external security environment had evolved in an unfavorable direction. This pernicious evolution was assisted in part by some of India’s own strategic choices—the effect of the 1974 nuclear test and the Integrated Guided Missile Program on Pakistan’s own nuclear and missile acquisition decisions being just two examples—but since their long-range consequences were either overlooked or accepted to begin with,\textsuperscript{205} it is not surprising that the BJP found itself in power at a time when pressure to change the country’s traditional nuclear posture was steadily mounting. What had prevented these changes from coming about even more hastily than they did was simply differences in risk tolerance among the various political parties,

\textsuperscript{203}Ibid.
\textsuperscript{204}Mattoo, “Enough Scientific Reasons Seen for Conducting Tests.”
\textsuperscript{205}India often contributes to its own misfortunes because of its strategic solipsism. Many Indian technical initiatives, such as the 1974 nuclear test, the missile development program, and the pursuit of advanced nuclear weaponry, were initiated primarily as “technology demonstrators” intended to showcase the quality of India’s scientific prowess. Despite the fact that many of these initiatives were actually less successful than advertised, their effect on Pakistan has often been more arresting than intended; in many cases, they have unnerved Islamabad sufficiently to cause it to initiate major counterresponses that have had the end result of actually overtaking India in several issue areas where New Delhi originally possessed both the lead and the initiative. When faced with subsequent evidence of Pakistan’s unbelievable progress, Indian decisionmakers often fail to recognize the deleterious consequences of their own actions: Their “technology demonstrators” invariably alarm Islamabad sufficiently into mounting formidable counterresponses even as their own passionate belief in the success of these demonstrations lulls them into a complacency that prevents them from bringing these experimental initiatives to an effective and successful conclusion in the field.
especially as far as individual leaders were concerned. Yet at the same time, the pressure for change had already begun to dominate the domestic debate about security policy. Indeed, this changing national mood was captured succinctly by a report jointly issued in 1995 by two of India’s most prestigious think tanks, the Institute for Defence Studies and Analyses and the Centre for Policy Research, which—after considering many of the alterations occurring in the six conditions identified above—argued that “...in this changed situation, the present position of keeping the nuclear option open has become meaningless. There is need now to examine how best to translate this into effective deterrence and to safeguard our vital interests, in political and military terms.”

When combined with other endogenous factors—such as continuing pressure from the Indian scientific establishment and the uniformed military’s new but fervent urging for greater clarity in the country’s nuclear capability and deterrence doctrines—such judgments ensured that Alternative III would subsist only as an unstable equilibrium that was fated to collapse when the preferences of key decisionmakers happened to align with some external events signaling a further deterioration in the country’s security environment. And indeed, Pakistan’s decision to test the Ghauri IRBM, the rash and provocative rhetoric emerging from Islamabad in the aftermath of that test, and the muted U.S. response to this new distension in Pakistani capabilities turned out in retrospect to be just such events. As one Indian news report summarized it, “Vajpayee walked into South Block on March 19 with his mind fully made up. But events did shape the timing: Operation Shakti was authorised two days after the

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206 As I. K. Gujral would remark in an interview after the nuclear tests, “The option of testing a nuclear device has been before every Prime Minister since the time of Rajiv Gandhi but they chose not to exercise it. It is up to the judgment of the Prime Minister to work out the concerned mathematics as far as the cost-benefit ratio is concerned and arrive at his own conclusions. ... For me economic and social development was of vital importance. Each one of us has our own value sheet of cost-benefit valuation in terms of economic development.” See “We Have It, They Have It, That’s All,” The Times of India, May 16, 1998.

Ghauri test-firing in Pakistan. Thus, while the cluster of events relating to the Ghauri demonstration certainly did not cause the Indian nuclear test, they undoubtedly occasioned it, and the BJP government’s strong determination ensured that when faced with a choice of possibilities—including a comparable resumption of Indian missile tests, a formal declaration of India’s nuclear status, a covert development of a full-fledged arsenal, and a resumption of overt nuclear testing—India would in fact “go for broke” in efforts to simultaneously validate the technical quality of its own nuclear arsenal, reassure its own populace, and communicate to Pakistan, China, and the United States that India would take care of its own interests no matter what the costs might be to each of these states.

The events that occurred in May 1998 lent substance to this decision, and the analytical issue at this juncture therefore lies in understanding India’s future choices now that the “veritable middle

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208 Joshi, “Nuclear Shock Waves,” p. 14. Even as moderate a commentator as Prem Shankar Jha argued that “India’s response to the launching of the Ghauri should . . . be unequivocal. Instead of pretending that nothing much has happened, or worse, that the Pakistanis may be lying . . . India should shed its indecision and do whatever is needed to restore credibility to its nuclear deterrence capability. This requires . . . when it becomes absolutely necessary, the resumption of nuclear testing.” See Prem Shankar Jha, “India Must Resume N-Tests,” Hindustan Times, April 18, 1998.

209 In hindsight, this BJP decision seems obvious in part because it was revealed in the aftermath of the May 1998 tests that the BJP government had in fact authorized a resumption of nuclear testing during the 12 days that it was in office during May 1996. For details about this extraordinary episode, which the United States government did not then know, see Perkovich, India’s Nuclear Bomb, pp. 371–377. This episode has now been used by several analysts (see, for example, loeck, “Nuclear Developments in India and Pakistan,” pp. 6–14) to argue the point that the BJP-dominated government’s decision to renew nuclear testing in 1998 had less to do with India’s security concerns and more to do with the BJP’s long-standing conviction that India needed nuclear weapons in order to overcome its strategic immobility and to underwrite its claims to greatness. This conclusion is not entirely obvious, however, since it fails to explain why the BJP in its earlier incarnation—the Jan Sangh—did not even argue for a resumption of nuclear testing when it was an equally, if not more, important part of a previous coalition government in 1977. The only explanation satisfying these facts is therefore that, whatever the BJP’s traditional preferences about nuclearization might have been, India’s strategic environment in 1998 presented certain incentives which enabled the BJP to act on its long-standing beliefs without giving the appearance of pursuing a fundamentally irrational course of action. To that degree, the “deterioration” in India’s strategic environment—which could certainly not be asserted in 1977 in the manner in which it could be argued in the post-1995 period—played a critical permissive role in enabling the BJP to act on what may have been its political prejudices but could nonetheless be defended as a justifiable policy made necessary by India’s national interest.
path,"  Alternative III, has finally collapsed. To be sure, some Indian commentators still hope that a new version of Alternative III might be resuscitated.\textsuperscript{211} Praful Bidwai, for example, has argued emphatically that despite the events of May 1998, "there must be no weaponisation and no [more] tests."\textsuperscript{212} Tracing the burdens both to India's traditional commitment to a nuclear weapon-free world and to its security, Bidwai has consistently maintained that India "must never test again nor make weapons that are . . . [both] . . . illegal and strategically irrational."\textsuperscript{213} Elaborating on this theme, Bidwai's colleague Achin Vanaik has defended the thesis that "nuclear deterrence is a deeply immoral doctrine," further asserting that New Delhi's readiness to countenance new patterns of nuclearization would result only in a "persistent involvement in this discourse [that] debases a nation."\textsuperscript{214} Consequently, Vanaik argues, any solution to India's strategic conundrum that produces further nuclearization would have the effect of ensuring that "India has now become part of the problem of global nuclear disarmament and not part of the solution."\textsuperscript{215}

Some Indian analysts have therefore argued against moving away from Alternative III on the grounds that such actions would undermine the eventual possibility of global nuclear disarmament. At the same time, still others have chosen to defend this conclusion primarily on the basis of India's own strategic interests. The latter arguments, which are driven largely by a sobering view of what nuclearization would entail for India's broader political objectives, have been articulated by a former Director General of Military Operations, Lieutenant General V. R. Raghavan, and by a former Chief of Naval Staff, Admiral L. Ramdas.

Raghavan, for example—arguing against the larger tide—has asserted that the optimal direction for India at present is not "to stay

\textsuperscript{210}Singh, "Why Nuclear Weapons?" p. 20.
\textsuperscript{211}Kamal Mitra Chenoy, "India Should Beat the Nuclear Club, Not Join It," \textit{Asian Age}, July 23, 1998.
\textsuperscript{213}Bidwai, "Regaining Nuclear Sanity."
the nuclear weapons course, bear the costs and create the credible deterrence necessary to engage in a dialogue of equals . . . [but rather] . . . to use the nuclear tests as a loud and clear message from India for ending nuclear double-talk and obfuscation and securing India’s security.”216 Recognizing that the May 1998 nuclear tests cannot be undone in either a physical or a political sense, Raghavan noted that “the way to avoid the dilemmas . . . [imposed by unfavorable] . . . nuclear choices lies in taking the focus back to economic growth and political stability.”217 Since “India’s national interests would be best safeguarded by demonstrating nuclear weapons readiness without be[coming] a nuclear threat,”218 the most sensible solution at this juncture, according to Raghavan, would consist of reviving Alternative III, but in a new guise that would entail “converting the moratorium on tests announced by the Prime Minister into binding agreements, stopping the process of tests from going into a weapons production cycle, and . . . restoring relations with other countries which have been allowed to get tangled by the [May 1998] tests.”219 This course of action was obviously justified on the premise that Indian security and status “essentially depends on regional stability and economic growth” and that tightly “integrating India globally in economic and technological terms” rather than “getting isolated” from the international system consequently remained India’s most important immediate strategic objective. Given this understanding, Raghavan maintained that the nuclear tests ought to be used as diplomatic instruments to force “the nuclear five to find ways of accommodating Indian interests [by] using the negotiating value of nuclear weapons instead of their deterrent value,”220 since “an undue weightage to the arguments [about] deterrence and force structures w[ould] leave [Indian] leaders vulnerable to overplaying the nuclear gambit.”221

219 Ibid.
220 Ibid.
221 Raghavan, “The Indian Nuclear Gambit.”
Admiral Ramdas has similarly argued that because “neither India nor Pakistan has, or can afford, what real nuclear weaponization takes. . . . the need of the hour is to restructure the national agenda to meet th[e] new challenge” of producing “real power and strength [that] will come only when we can give all our people their basic needs like food, drinking water, health, education, clothing and housing.”

Along with some others, both analysts have in effect argued for turning the clock back to the maximum extent possible. They urge the Indian government to use its nuclear tests as a bargaining chip to accelerate the processes of global nuclear disarmament, ensure that India’s security and status concerns are taken seriously, and solidify the country’s integration into the global economy in order to further its developmental goals rather than simply treating the events of May 1998 as a stepping stone along the path toward further nuclearization.

Alternative IV: A Recessed Deterrent

These views, however—no matter how cogent they may be—represent a distinct minority in India today, and given the predilections of both the present Indian government and the higher bureaucracy, it is most likely that all future choices will run even further in the direction of nuclearization rather than away from it. Indeed, of the two broad termini imaginable, the more minimalist choice embodied by Alternative IV has already found surprising support—at least in the main, if not in all the details—from one of India’s best-known strategic commentators, Jasjit Singh, who has argued that India’s “interim needs . . . could be met by a doctrine and strategy of ‘recessed deterrence.’”

This position has also been defended by a few other Indian commentators, who have similarly argued, albeit less clearly,

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223 For other views affirming this position, see “In Arms Way,” The Telegraph, May 28, 1998; Ramachandra Guha, “And Now, the Test of Sanity,” The Telegraph, June 8, 1998; and Arjun Makhijani, “A Disarming Offer No One Can Refuse,” The Times of India, September 3, 1998.

that striving for robust nuclear deterrence could at this stage turn India into little more than a nation of "beggars with the bomb."\textsuperscript{225}

All such views—which, it must be noted, are not popular among Indian security elites (who believe that the May 1998 nuclear tests have provided the country with the best opportunity to strike out as a full-fledged nuclear weapon state)—are grounded in three important assumptions. The first of these assumptions, while conceding that nuclear capabilities of some sort are essential for Indian security, holds that the notion of security itself ought to be framed in inclusionary terms centering on a concept that goes "back to economic growth and political stability."\textsuperscript{226} The implication of this vision is that India’s nuclear capabilities, while made necessary by its uncertain strategic environment, still cannot function as the "be-all and end-all" of its strategic preparedness. Hence, to the degree that robust nuclearization actually undercuts the objective of securing a "comprehensive, durable and integrated peace . . . [which ensures the] . . . socio-economic growth and development of India,"\textsuperscript{227} this assumption argues that the burdens imposed by such nuclearization simply ought to be minimized. The second assumption holds that the extant global nuclear order is heading inexorably toward a "decaying of deterrence"\textsuperscript{228} in that the use of nuclear weapons and the issuance of nuclear threats have become less and less credible for a variety of reasons, ranging from growing distaste for all things nuclear to the decreasing utility of war as a method for resolving disputes to the high costs of using nuclear weaponry as instruments of war fighting and coercion. Because nuclear weapons in such circumstances have "utility more in terms of political deterrence rather than . . . military deterrence,"\textsuperscript{229} the net implication of this insight is that India’s immediate strategic objective should consist of developing a recessed capability that could "represent an end-state

\textsuperscript{225} This phrase is borrowed from Bhaskar Dutta, "Beggars with the Bomb," The Telegraph, May 26, 1998. For a critique of even minimal weaponization, see also Praful Bidwai, "Beggared by the Bomb: Dangerous Shift in Nuclear Doctrine," The Times of India, April 21, 1998.

\textsuperscript{226} Raghavan, "India’s Nuclear Dilemma."


\textsuperscript{228} Ibid., p. 308.

\textsuperscript{229} Ibid., p. 309.
itself before India starts to reverse its own capability in proportion to the process of abolition by other weapon states.230 Finally, the third assumption is that at least in the foreseeable future, India is not likely to face any strategic challenges that will require it to possess a large, ready arsenal capable of promptly executing nuclear operations in the context of a crisis. This assumption concedes that such threats could materialize over time, but because they are “unlikely to arise very rapidly”231 and because “significant early warning will be available”232 when they do, there is no compelling need for India to lock itself into an interim nuclear posture that is costly, demanding, and escalatory. Given these assumptions, Indian strategists who argue for postures resembling Alternative IV treat nuclear capabilities essentially as a hedge against strategic uncertainty: They seek to preserve Indian security at the lowest possible cost, but because they also value the benefits of a denuclearizing international order, they reason that a recessed deterrent represents the best choice for New Delhi even in the aftermath of the recent nuclear tests in South Asia.233

Thanks to such concerns, Alternative IV fits the bill admirably. This alternative centers on making Indian deterrence capabilities more credible not by pursuing more overt and provocative components such as further nuclear testing, the assembly-line production of nuclear weapons, or the deployment of nuclear-armed delivery systems, but rather by developing the crucial albeit hidden and oft-forgotten command-and-control structures as well as the organizational and ideational elements relating to sufficiency requirements, use doctrine, targeting options, and conflict termination. Since effective deterrence derives in the final analysis not simply from the possession of some completed nuclear weapons and dedicated delivery systems but also from an integrated capability

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230 Ibid., p. 318.
231 Ibid.
232 Ibid.
233 This position has been affirmed most clearly, and at some political cost, only by Jasjit Singh. But echoes of this position can also be found in the writings of other Indian commentators. These are explored in the context of the wider Indian debate on nuclear weapons in Kanti Bajpai, “India’s Nuclear Posture After Pokhran II,” International Studies, 37:4 (October–December 2000), pp. 267–301.
that includes both effective C3I and adequate planning mechanisms, the recessed deterrent Alternative IV prescribes requires that India develop these latter dimensions of national capability *while still refraining from the serial production of new nuclear weapons and the deployment of dedicated nuclear delivery systems.*

On the premise that a nuclear arsenal is ultimately a systemic artifact as opposed to a disparate collection of discrete components, Alternative IV would obligate India to initiate the development of those ancillary elements which make a nuclear arsenal possible—should that be required at some point in the future—but without producing such an arsenal immediately. Thus, as far as fissile-material production is concerned, the recessed deterrent would not only allow for the continuation of spent-fuel reprocessing, as is currently occurring in the facilities at Trombay, Tarapur, and Kalpakkam, but would also permit the continued enrichment of uranium, assuming that such is already occurring on a pilot scale in facilities at Trombay and Ratnagiri. This uranium enrichment appears to be intended primarily for fueling India's future nuclear submarines—a capability that would prove useful both for conventional warfare and for a future deterrent if required. In point of fact, both the production of plutonium and the enrichment of uranium continued even when India’s nuclear posture consisted simply of maintaining the option, and the recessed deterrent does not entail any departure from this practice, although it would prefer that no changes be made in the pace at which these materials are accumulated. This variable, however, is beyond the control of any outside entity, and many sources have suggested that India already has a sufficient inventory of fissile materials to service its future deterrence needs. This view also seems to have informed New Delhi’s decision to allow the discussions on the FMCT to begin in Geneva.

Where nuclear weapons themselves are concerned, the recessed deterrent would also allow BARC and other centers to continue both

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236 Jones, *From Testing to Deploying Nuclear Forces*, p. 8.
theoretical and laboratory experimentation relating to nuclear weapon design. This work—which India has now acknowledged includes research relating to the development of boosted fission and fusion weapons in addition to pure fission devices—would proceed as usual except for the fact that no hot testing of these devices would be permitted. The May 1998 tests obviously violated this stipulation, so acceding to Alternative IV today would require no further testing of any nuclear devices. As Jasjit Singh, accepting such a constraint as integral to his version of the recessed deterrent, noted:

There is no doubt that we have the wherewithal to make plutonium-based 15-30 kiloton yield nuclear warheads. A thermonuclear bomb would be desirable but will require testing. We have the sovereign right to test, but the costs of likely international response outweigh the benefits, at least at this stage. The 1974 peaceful explosion provided us with enough basis for a credible capability. It also needs to be remembered that the Hiroshima bomb was not tested but it was not any less effective because of that. A nuclear test, therefore, remains a desirable measure but not a necessity. A test will define the quality of the deterrent but not the credibility of [that] deterrent.

It can thus be seen that the stipulation of "no further tests" essentially formalizes India's voluntary moratorium on future nuclear testing. In the aftermath of the May 1998 tests, India indicated that laboratory tests of the nonnuclear components of its nuclear devices (primarily SAFF components), subcritical nuclear tests, and computer-aided simulations would continue. Presuming that these are already occurring, the recessed deterrent Alternative IV envisages would allow them to continue first because they may not be detected by external entities and second because they do not embody a manifest challenge to the international nonproliferation order (since, among other things, the existing nuclear weapon states also perform such tests on a regular basis). Alternative IV would therefore permit India to maintain its existing—small—stockpile of nuclear weapons.

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237 See India: India's Nuclear Weapons Plan Examined.
but would forbid the production of new weapons (either individually or through assembly-line methods) and the explosive testing of both current and improved nuclear weapon designs.

The recessed deterrent would also leave inviolate the country’s traditional efforts to develop its nuclear delivery systems. It would, for example, permit the DRDO to continue its development of potential delivery systems such as the Agni, Sagarika, and follow-on Prithvi missiles. At the same time, however, it would require that India abjure the production and deployment of all nuclear systems, be they dedicated vehicles like the Agni or Agni follow-on missile or dual-capable systems like the Prithvi (SS-150/250/350), Jaguar, Mirage 2000, and Su-30, which are capable of carrying nuclear weapons. Since the latter are already present in the inventory and operational, having been acquired for a conventional war-fighting role, Alternative IV would also require that India eschew any modifications that would render some or all of these platforms true nuclear delivery systems. This would include abstaining from both hardware and software modifications as well as from command changes that would reconstitute these platforms into new organizational structures relevant to nuclear operations. In this issue area as well, the demands of a recessed deterrent may represent little more than a variation of the posture associated with maintaining the option, but it is worth noting that such requirements do run counter to both U.S. and Indian preferences expressed in the aftermath of the May 1998 tests.

To be sure, the United States would prefer to see all Indian ballistic missile research, development, test, and evaluation (RDT&E) programs either terminated outright or at least frozen until a clear and present danger appears to confront New Delhi. Such a preference could, however, strip India of its ability to operationalize a deterrent in extremis, since developing effective missile delivery vehicles is essentially a time-consuming process with a maturation period that runs into years if not decades. Because this outcome would be inconsistent with developing a recessed deterrent, Alternative IV would allow continued RDT&E activities relating to all India’s missile pro-

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grams but would prohibit both the production of such missiles, either individually or serially, and their deployment as nuclear vehicles ready for war. Jasjit Singh, too, has emphasized that his version of a recessed deterrent requires a vigorous missile RDT&E program, although he hedges on the question of missile production; while he seems to endorse such production on the grounds that "the advantage of investment in . . . missiles is that they can always be used with conventional warheads also," he simultaneously asserts that India "should be willing to forgo ballistic missiles if all countries are willing to abolish them." Alternative IV, as described here, would permit a variety of Indian missile RDT&E activities and the acquisition of long-lead items required to produce these missiles when necessary, but it would proscribe the production of any missiles that were meant to serve primarily as nuclear delivery vehicles. Since India has already produced some missile systems that are notionally capable of delivering nuclear ordnance—principally the Prithvi SSM (SS-150)—Alternative IV would require that these vehicles be maintained purely as conventional systems, in line with what appear to be India’s original intentions. Consistent with this interest, Alternative IV would, however, reject India’s preference for modifying some of its dual-capable systems for nuclear delivery missions. Since the objective of a recessed deterrent is to enable India to prepare itself for the burdens of security management in the nuclear age without actually creating an arsenal before it is truly necessary, Alternative IV would also reject any proposals to configure for nuclear delivery missions either some of its conventionally armed ballistic missiles, such as the Prithvi, or its attack aircraft, because this would run counter to the objective just enunciated. To be sure, detecting such modifications may be difficult if not impossible, but the intent of maintaining a potential as opposed to an actual arsenal requires the rejection of all proposals leading to the creation of a relatively ready strike force. Moreover, unlike the long lead times necessary for developing a missile capability, the modification of

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241 Singh, "The Nuclear Option."

242 The issue of the Prithvi as a nuclear system will be further discussed in Chapter Five, but the initial Indian intention in developing this system revolved primarily around utilization for conventional war-fighting purposes. See Indranil Banerjee, "The Integrated Guided Missile Development Programme," *Indian Defence Review*, 5:2 (July 1990), pp. 103-105.
strike aircraft for nuclear missions can be undertaken more or less quickly in an emergency; consequently, it makes sense to forbid such activities even though it simultaneously permits RDT&E efforts and long-lead acquisition activities in the missile realm.

Alternative IV as described above may thus embody few changes from the traditional posture as far as the production of fissile materials, the development and production of nuclear weapons, and the acquisition of delivery systems are concerned. At the same time, however, it does entail new and potentially far-reaching changes with respect to the development of both the supporting infrastructure and the procedural and ideational systems associated with a nuclear deterrent—changes that are deemed to be vital because, as Neil Joeck succinctly phrased it, they “enhance stability in a crisis and improve the ability to avoid nuclear use in the event of war.”

Several Indian analysts have argued for these changes—some well before the May 1998 nuclear tests occurred—on the grounds that “Indian defence [has heretofore subsisted] in an unreal world not prepared for the threat of nuclear weapons and missiles” and, as such, required a reorientation that would help “assure India’s security in the nuclear kaliyug.” Still other analysts have pleaded for these changes in the hope that they would lead to an overhaul of the entire defense decisionmaking system—an overhaul that, while intended to immunize India against the worst effects of existing nuclear threats in the first instance, would ultimately lead to a greater appreciation of military power where enhancing the country’s desire for safety, power, and prestige is concerned. Irrespective of the motivations underlying these arguments, most Indian security managers would agree with Joeck’s assessment that the most compelling reason for adopting a posture closer to what is called a recessed deterrent (as opposed to merely maintaining the option) is “to reduce nuclear risks”—i.e., to “help . . . reinforce deterrence at ground level

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244 Joshi, “In the Shadow of Fear,” pp. 50 and 53. The term kaliyug refers, in Hinduism, to the last of the four ages—yugas—that make up one cycle of creation. The Kali-Yuga, which Hinduism believes refers to the present age, is characterized by wickedness and disaster that lead to the destruction of the world in preparation for a new cycle of creation and with it a new cycle of yugas.

and ensure that both sides are not left with a choice between suicide and surrender.”

Alternative IV therefore requires specific changes in India’s nuclear posture, all of which lie outside the obvious realms of weapon capabilities and delivery systems. The first such cluster of changes—material improvements—are connected to the development of an adequate *supporting infrastructure* that would help decisionmakers assess an adversary’s capabilities and intentions as well as execute any proportionate responses that may be appropriate if deterrence fails. Among other things, this would require that India reconfigure its intelligence and warning systems—understood here mainly in terms of technical equipment—so that it could effectively monitor and assess the range of threats facing the country on a day-to-day basis in peacetime as well as provide careful evaluations of possible breaking events during a crisis. Other associated requirements would include modernizing India’s communications network, investing in a survivable chain of command centers, and reconfiguring the meteorological and space systems to provide timely support both to political decisionmakers and to civilian and military personnel tasked with carrying out nuclear operations.

Since such capabilities already exist, however—if only in rudimentary form and driven primarily by the demands of conventional war-fighting operations—the changes this alternative would require at the level of infrastructure may be less important than those demanded by the second cluster, which is associated with the development of *procedural systems*. Procedural systems here refer specifically to schemes that govern the management and use of the country’s nuclear capabilities, among the most critical of which are those aimed at ensuring adequate positive and negative control over the nuclear inventory. Positive control in this context implies that weapons must be readily available when required by the legitimate authority, while negative control implies that weapons must be us-

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able only by those specifically authorized to do so.249 At a purely technical level, both forms of control are not as difficult to achieve in India as is sometimes imagined in the West, but whether the legitimacy of the prevailing arrangements can be sustained in the context of strategic decapitation—especially in a democratic country like India, where such issues have thus far not become the staple of the nuclear debate—remains an open question. Other procedural matters that must be resolved include the structure of the nation’s national command authority; the chain of command, control, and custody in the event of strategic decapitation; the structural arrangements for civil-military coordination relating to nuclear use, including the vexing issue of predelegation; and the creation of a formal nuclear requirement-planning structure that includes both civilian scientists and military planners.250

Associated with procedural systems but quite distinct from them lies a third cluster of changes predicated by Alternative IV that, because they remain entirely in the realm of concepts, might be referred to as the ideational system. The ideational system in the context of nuclear deterrence is fundamentally concerned with defining the political utility of nuclear weapons for a particular country and, thereafter, with translating that definition into a deterrence doctrine that governs nuclear acquisitions and force-structure planning, the choice of targets and targeting strategies, and, finally, issues of war termination and postconflict recovery. The ideational system is in this context intimately connected with the procedural system described earlier in that the concepts governing the effective acquisition and employment of nuclear force can be derived only through an established institutional system that is capable of acquiring information, assessing choices in the wake of bureaucratic and public debate, and promulgating decisions that are recognized as legitimate and authoritative by all the subordinate echelons in the establishment.251 In a more fundamental sense, however, the ideational system remains the bedrock on which all other dimensions of the nu-

clear posture will be built. This is because the country’s perception of nuclear weapons and their utility will remain the foundation on which all the procedural and infrastructural capabilities necessary to transform the nuclear potential into an effective deterrent will be constructed.252

By requiring that India pay more attention to the supporting infrastructure necessary to deal with the technological problems of the nuclear age—as well as by mandating that India pay heed to procedural and ideational systems that serve to transform brute weapons into effective deterents—the proponents of Alternative IV appear to be seeking a way to enhance Indian security by developing its latent capabilities without simultaneously contributing to a subversion of the international disarmament process, which in fact serves Indian interests. This by necessity requires a two-track strategy—one that demands on the one hand that India “get all the elements of potential nuclear capability in place at an early date” but on the other hand that India eschew “overt weaponization” so long as “drastic reduction and elimination of nuclear weapons, along with ... changes in ... the attitudes and belief systems that justify the utility and usability of nuclear weapons,”253 remain possible. By advocating simply a recessed deterrent at this stage, analysts like Jasjit Singh essentially argue that a “nonweaponized” posture, in which the “option to weaponise [understood in the strict, narrow sense] is kept open and

252 While the procedural systems in India historically have been both informal and idiosyncratic, varying from regime to regime (with the only exception being the constancy of final control in the person of the Prime Minister), the Indian government traditionally did not articulate any authoritative ideational framework in any detail. This has changed slowly in the aftermath of the May 1998 tests, and the details are discussed at great length in the next chapter. Even before these pronouncements were available, however, the utility of nuclear weapons and the derivative questions of doctrine and employment were discussed mainly by think tanks, retired and serving military officers, and journalists, not by knowledgeable officials associated with the civilian DAE (which operates the nuclear weapon program) or by political functionaries such as serving Cabinet Ministers, senior bureaucrats, or technologists conversant with the extent of India’s nuclear capabilities. This led to recurrent American calls for better clarification of India’s strategic intentions, and even India’s most respected strategic analyst, K. Subrahmaniam, concluded before the 1998 tests that whatever India’s nuclear policy and its requirements may be, “it cannot be kept in sealed covers” (see Joshi, “In the Shadow of Fear,” p. 53) if it is to effectively cope with the terrible dilemmas that any democratic polity faces in the nuclear age.

[is] linked to [a] rise in [the] threat levels [facing the country],"^{254} best serves India’s interests at this time.

If the processes of global denuclearization gather steam as this recessed deterrent is being developed, India could simply “reverse the nuclearisation at its early stages, or [even] forgo it in the interest of greater security, which is not built on generating insecurity of the most acute kind."^{255} If, however, global disarmament efforts were unfortunately to fail, Indian security would still not be unduly imperiled, since “there [would] be time enough and [the] basic capability [in place] to transform [the] recessed deterrence into a full-fledged minimum deterrence."^{256} Thanks to this vision of strategic hedging, Alternative IV is seen as providing a means by which the collateral requirements associated with possessing a credible nuclear capability can be steadily acquired—to the advantage of Indian defense preparedness in general and its deterrent capabilities in particular—even as the country begins to “focus [its] energies and expertise [on] the central goal of global abolition of nuclear weapons.”^{257} This posture is viewed by many “owls” in the Indian strategic debate as optimal because it improves the country’s security without in any way undermining its desire for both flexibility and status.

The claim that Alternative IV improves Indian security is predicated on the belief that approaching nuclear deterrence in a systematic way—including understanding and coherently responding to its multifaceted demands—actually contributes to its success. By implication, this alternative therefore presumes that existential deterrence is itself a myth—i.e., that nuclear weapons simpliciter, at least of the kind and numbers subsisting in South Asia, do not deter, and consequently that acquiring an adequate deterrent requires attention to those complementary variables that render such weapons politically useful. It is further argued that these complementary variables can in fact spell the difference between the success or failure of deterrence. At a perceptual level, for example, they serve to enhance the value of

^{254}ibid., p. 310.
^{255}ibid., p. 304.
^{256}ibid.
^{257}ibid.
the hidden capabilities insofar as they help to communicate the extent of Indian resolve and the degree to which its leaders take their stewardship seriously. At an operational level, they similarly enhance the value of the hidden inventory by ensuring that the capabilities in place are adequate to the political tasks concerned and are safe and secure both in peacetime and during a crisis. This view of the benefits of Alternative IV has considerable merit, making it difficult to conclude that the ideational, institutional, and perhaps even physical improvements that would result from choosing this option would be deleterious either to Indian security or to South Asian stability in general. So long as the crucial caveat associated with Alternative IV is respected—that no significant changes be made in India’s traditional posture with respect to both the fabrication of additional nuclear weapons and the production, modification, and deployment of delivery systems—it is therefore likely that a recessed deterrent would in fact enhance rather than detract from Indian security.

This conclusion is further reinforced by the fact that none of the improvements this alternative entails—with the exception of continued missile testing—would run afoul of the global nonproliferation efforts mounted by the United States. Indeed, undertaking these improvements would certainly indicate that India takes the problems of nuclear deterrence seriously. To the extent that such preparations might be perceived as moving the subcontinent further down the nuclear road of no return, they might increase the misgivings of U.S. constituencies concerned about nonproliferation. But since nuclear reversal is all but impossible at this stage of the game in both India and Pakistan, any responsible improvement in decisionmaking structures and crisis management capability in one or both states—if accompanied by restraint in the production and deployment of nuclear weapons and their associated delivery systems—would probably be viewed by most U.S. security managers as the “second best” outcome. This applies even to the problem of missile testing:

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259 Secretary of State Madeleine Albright summarized this position when she stated that “we really have three goals for Geneva, and that is to make sure that this does not escalate, which really means that there should be no further testing of any kind; that there not be any capability of deployment in any way; and no mating of the
While most U.S. policymakers would prefer that India (and Pakistan, for that matter) cease all missile testing permanently, they would find ways to live with this problem if India could provide an authoritative, binding commitment that it would not pursue the development of intercontinental-range ballistic missiles as well as other ballistic and cruise missiles beyond those already in the pipeline, and that the ballistic missiles currently in engineering development would be neither produced nor deployed for now. Any commitments that go beyond these limits would be impossible to obtain from India and, even if they were obtained, could not be expected to hold unaltered into the distant future. Even with these commitments, however, it is clear that Alternative IV promises great benefits for Indian security in that it would minimize the extent of international (including U.S.) discomfort with its strategic programs while allowing India to steadily develop the ancillary capabilities that would make its deterrent viable if required in a crisis, even as it pursues the objective of global disarmament that may ultimately make that deterrent unnecessary.

It is obvious that India’s flexibility will also remain uncompromised by a recessed deterrent. Since all the changes this alternative entails are either procedural or ideational, with the material innovations consisting solely of upgrades in supporting infrastructure rather than increases in raw deliverable capability, the country’s flexibility—understood here as its ability to change course down the line—should generally be unaffected. It can be argued, of course, that a state which makes all the investments called for by a recessed deterrent would be loath to denuclearize at some future point because, among other things, it will have invested too much by then
simply to turn around and quit. Yet while such an argument appears to have some merit, it is both false empirically and superficial at a practical level. Indeed, the historical record suggests that states which have concluded that they were better served by denuclearization have not hesitated to abandon their nuclear programs, irrespective of how much they had previously invested in them. India’s own record in the realm of chemical weaponry is also relevant here: Despite having invested significant resources in covertly developing a stockpile of chemical weapons, India committed itself to the divestiture of these capabilities when ratification of the Chemical Weapons Convention (CWC), a nondiscriminatory international accord, was perceived as being in its national interests. At a practical level, too, the investments Alternative IV entails have multiple uses beyond nuclear deterrence, so their costs are unlikely to become the principal stumbling block to any future decision to denuclearize—so long as the latter is seen to be in India’s larger interests when viewed on its own terms. On balance, therefore, India’s desire for flexibility would probably remain untrammeled.

Finally, the development of a recessed deterrent is unlikely to have any significant impact on India’s status. Since it does not increase the size or quality of India’s nuclear stockpile in any manner different from what might have occurred under the choice of maintaining the option, all the benefits and costs associated with the traditional posture of nuclear ambiguity remain unchanged.

**Alternative V: Developing a Ready Nuclear Arsenal**

Since Alternative IV generally increases the credibility of India’s nuclear option but does not produce a ready arsenal, a large and vocal subset of the country’s security elites has argued for a shift to Al-

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262If flexibility is understood in a different sense, however—i.e., as the ability to conduct controlled nuclear operations rather than simply execute some kind of “Samson option”—the capabilities acquired as a result of Alternative IV would actually increase Indian flexibility.
ternative V, which calls for the development of a relatively small but nonetheless robust nuclear arsenal immediately. Advocates of this alternative essentially believe that all the innovations a recessed deterrent entails are necessary but insufficient so long as India’s fissile-material production base, weapon stockpile, and associated delivery systems are not improved commensurately. Proponents of this alternative recognize that all such improvements will require many years, if not decades, to come to fruition. Nonetheless, they believe that these improvements should be accelerated with a view toward deploying not merely a recessed deterrent but a ready nuclear arsenal at the earliest possible opportunity. Bharat Karnad, arguing for the latter, compared the two choices by asserting that merely developing the capacity to produce, “depending on which Western source one wants to give credence to, 60 to 120 nuclear warheads . . . is not so much a recessed or opaque deterrent as a phantom deterrent good enough to spin theories with but damned thin pretence to base the country’s ultimate defense on.” This view holds, in other words, that India’s security requirements demand not simply the presence of potential nuclear capabilities but rather manifestly deployed arsenals that, even if relatively small, are substantial enough to neutralize the worst intentions that India’s largest adversary may harbor. Brahma Chellaney further emphasized the need for just such a capability when, commenting on a parliamentary discussion about India’s emerging nuclear posture, he declared that “the nation now knows that its minimum deterrent, based on modest capabilities, will perform involve deployment of nuclear weapons. This would greatly disappoint those who have been advocating Made-in-USA concepts fashioned exclusively for the Indian sub-continent, such as ‘recessed deterrence.’”

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while sentiments such as these—which favor a ready arsenal as opposed to some alternative demonstration of nuclear capabilities—have had a place in the Indian nuclear debate at least since 1964, they have grown far more prominent since the nuclear tests of May 1998. Indeed, these tests and India's subsequent declaration of its nuclear status have been widely viewed as the last hurdles India has faced en route to full nuclearization—and accordingly, advocates of this posture believe that New Delhi, having crossed the Rubicon, should now proceed inexorably toward developing and deploying a full-fledged arsenal of the kind (if not the numbers) maintained by other nuclear weapon states.  

At one level, this view represents merely an “evolutionary” expectation, as advocates for Alternative V argue that the opprobrium India incurred for having resumed its nuclear testing in May 1998 would not be worth the trouble if the process of nuclearization were suddenly to be short-circuited and transmuted into a new kind of ambiguity that lasts for another 25-odd years. The middling posture advocated by protagonists of Alternative IV is seen in this context as confining New Delhi to a “nuclear limbo” of sorts that will improve neither its security nor its standing in the global order but will only reinforce the view that India is a “soft state” unable to make the hard decisions its own self-interest mandates. Precisely because such images would be deleterious to Indian security writ large, advocates of full nuclearization argue that New Delhi, having finally bitten the bullet, should now proceed to develop a robust and ready arsenal even in the face of strong foreign pressure to the contrary. As a former Indian Foreign Secretary argued,

What was the point of Pokhran II, of unveiling our nuclear muscle, if we are now to submit to the indignity of reversion, for purposes of the CTBT and the NPT, to a non-nuclear weapon state status? Doing so will bring our entire nuclear establishment under international safeguards and lay our country open to intrusive monitoring and inspections by, or at the behest of, the five acknowledged nuclear

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267The phrase, though not the argument, is borrowed from C. Raja Mohan, “India in a Nuclear Limbo,” The Hindu, August 21, 1997.
weapons powers. There are bound to follow even stronger pressures on us to sign the NPT and to desist from testing, developing, and deploying missiles, without which there can be no credible nuclear deterrent. Surely, all this is a recipe for making India a nuclear eunuch.\footnote{Maharajakrishna Rasgotra, “Making India a Nuclear Eunuch,” The Pioneer, April 1, 1999.}

Obviously, such arguments mask a deep albeit often unstated fear that the 1998 nuclear tests—dubbed “Pokhran-II”—may turn out to resemble the first nuclear test, “Pokhran-I,” in more ways than is currently recognized: as a gigantic tempest that, while followed by decades of indecision, nonetheless rattles India’s adversaries sufficiently to precipitate feverish counterresponses that only leave New Delhi worse off than before. In their zeal to avert such problems down the line, a significant segment of India’s security elites today thus argue not only for the development of the ancillary capabilities mandated by Alternative IV but also for an expansion of the country’s weapon stockpile and the accelerated development and production of new delivery systems—changes that would carry the process of nuclearization to its conclusion and presumably bequeath to New Delhi the kinds of deterrent capabilities, if not the numbers, that the declared nuclear powers possess.\footnote{See, for example, Karna, “Going Thermonuclear: Why, with What Forces, at What Cost?” pp. 310–337, and Brahma Chellaney, “India’s Trial by Atom,” Hindustan Times, November 4, 1998.}

**Fissile-Material Production and Composition.** The first set of changes Alternative V entails pertains to the rate at which India produces fissile materials as well as the composition of the materials themselves. Although most observers believe that India has a large fissile-material production complex that can in theory produce substantial stocks of weapons-grade plutonium, the actual size of this inventory has traditionally been much smaller than is usually suspected. R. R. Subramanian, for example—one of the country’s leading nuclear experts—has pointed out that India has thus far used only its CIRUS (40-MW) and Dhruva (100-MW) reactors for producing weapon-related plutonium despite the fact that it could in theory use all its other unsafeguarded power reactors as well should
this prove necessary.\textsuperscript{271} This restricted use has been attributed to India’s taking its bearings from nuclear developments in Pakistan rather than China. The end result of this effort has in any case been a smaller stockpile of weapons-grade plutonium than would technically be feasible for India to produce. Indeed, when the materials diverted for neutron flux studies, the fast-breeder program, and medical and industrial uses are taken into account in conjunction with the losses incurred during separation and reprocessing, Subramanian concludes that India’s 1991 stockpile probably did not exceed 200-odd kilograms—a figure that is much smaller than the estimates of organizations like the Carnegie Endowment for International Peace.\textsuperscript{272} A careful examination of the efficiency factors governing the operation of India’s two weapon reactors suggests that Subramanian’s estimates may be closest to the truth, but this in turn implies that the national Indian stockpile—estimated in 1991 to consist of some 20 weapons of approximately 15–20 kt—is also much smaller than is usually imagined. Irrespective of what New Delhi’s fissile-material inventory is today (an issue discussed in greater detail in Chapter Five), the reports appearing in the Western press crediting India with an inventory that could yield more than 300 nuclear weapons—comparable to the present nuclear stockpiles of Great Britain and France—can thus be seen to border on fantasy.\textsuperscript{273}

Recognizing that India’s fissile-material inventory is much smaller than it could be, a more robust version of Alternative V would call for the quantity of weapons-grade materials to be increased considerably so as to allow India to service deterrence requirements relating to both Pakistan and China. This would in turn require improving the efficiency of India’s two weapon reactors and perhaps even increasing the number of reactors dedicated to producing weapons-grade plutonium—if the country is to avoid the economic burden of

\textsuperscript{271}Subramanian, “India’s Nuclear Weapons Capabilities: A Technological Appraisal,” p. 23.


operating its power reactors in a “low-burnup” mode or the technical disadvantages of using reactor-grade plutonium produced by its nuclear power plants. Alternatively, India could simply decline to sign the FMCT now being discussed in Geneva until such time as it produces fissile materials in the quantity it believes to be adequate for its deterrent. For a brief period during the Gujral regime, India contemplated just such a course of action, but its recent decision consenting to the initiation of the FMCT discussions suggests either that New Delhi is confident that its limited inventory suffices for the deterrence of both adversaries or, more likely, that the FMCT is sufficiently far from completion to allow India to produce an inventory of the size it desires. In any event, concerns about the size of the country’s fissile-material inventory have already resulted in calls from some of the country’s leading commentators for a careful review of whether India has sufficient nuclear materials at hand to constitute a credible deterrent. On occasion, such concerns have also provoked criticism of the Indian government for having allowed the FMCT discussions to proceed without first having secured compensating benefits for such a concession.

Other observers have suggested different ways around the problem of limited fissile materials. The former head of Pakistan’s Atomic Energy Commission, Munir Ahmed Khan, for example, has argued that India has developed its enrichment capabilities precisely in order to produce highly enriched uranium for weapon purposes. The belief that India’s enrichment facilities are intended to provide the HEU necessary to make composite plutonium-uranium weapons is especially popular in Pakistan, but adding enriched uranium to a basic fission design intended to incorporate weapons-grade plutonium in its core is unlikely to bestow any advantage on India (although it would allow for some increase in the total numbers of weapons produced, depending on the relative inventories or pro-


duction rates of the two materials, if India were to use HEU to produce a new class of basic, uranium-based fission weapons. To be sure, the possession of HEU would certainly assist India in the production of advanced nuclear weapons in that it could be used as a "spark plug" to help ignite the lithium deuteride "fuel" in the secondary stage of a thermonuclear device. Even this application, however, is not strictly necessary, since modest quantities of weapons-grade plutonium can be readily substituted for HEU without diminishing the effectiveness of the spark plug and, by implication, without reducing the prospect of achieving a successful fusion reaction. Indeed, even other advanced designs, such as boosted fission weaponry, can be built around plutonium cores exclusively. Using deuterium-tritium in gaseous or other forms in order to inject fusion neutrons into the core, these designs may incorporate natural uranium tamper, but they do not require enriched uranium either for their effectiveness or for their efficiency. As noted earlier, highly (or medium) enriched uranium is relevant for fueling nuclear submarines, a platform India has sought to develop since the late 1980s—and if India's enrichment capabilities are enlarged for this purpose, they would contribute more to developing a potential delivery system than to enlarging the weapon inventory itself. Thus, if increasing the inventory of fissile materials is India's objective, this objective will for all practical purposes have to be pursued through the plutonium economy alone—and this will require in turn additional plutonium production reactors as well as increased efficiency throughout the production cycle if a dramatically larger fissile-material inventory is to be acquired in a hurry.

278 A good description of the "spark plug" and the role it plays in the overall design of a thermonuclear weapon can be found in Carey Sublette, Nuclear Weapons Frequently Asked Questions, "Section 4.4: Elements of Thermonuclear Weapons Design," available at http://www.fas.org/nuke/haw/Nfaq4-4.html#Nfaq4.4.


280 If India continues to produce HEU, however, and thereby manages to create a large inventory of HEU over and above that required for fueling submarine reactors (which might require only medium enriched uranium depending on the reactor design chosen for the vessel), it could choose to utilize all its "excess" HEU to create an entirely new class of pure HEU-based fission weapons conforming to the "gun-barrel" design demonstrated in the nuclear weapon used at Hiroshima. As noted above, this
Increasing Nuclear Weapon Types. A more significant alteration in India’s national posture may be mandated by the second set of changes Alternative V implicitly entails—namely, increasing the types of nuclear weapons India possesses to match the capabilities of its larger competitor, China. The character and effectiveness of India’s current nuclear designs will be analyzed in Chapter Five, but for now it should be noted that if India sought to match Chinese nuclear designs, New Delhi would be required to end its self-imposed moratorium and conduct additional nuclear tests—a proposal already advocated by the National Executive of the BJP—since it is unlikely that laboratory simulations of true multistage weapons would provide sufficient confidence about their effectiveness in practice. Irrespective of whom these capabilities are actually designed against, however, India’s boosted fission and thermonuclear weapon designs would invariably require hot testing if the national command authority is to be assured that its nuclear inventory actually works. This holds true irrespective of how these weapons are to be delivered because the extreme pressures and temperature changes associated with missile launch acceleration, payload reentry, and aircraft jinking in flight all make heavy physical demands on the integrity of the warhead. Although many of the warhead components can be thoroughly validated without explosive testing, and although most of these components may not even be part of what are otherwise fully instrumented underground tests, the implosion systems in India’s aircraft- and missile-delivered boosted fission and thermonuclear weapons will have to be explosively tested until its would allow it to increase the total numbers of weapons in its arsenal, and such weapons are unlikely to require hot testing for their validation. It is improbable that India would choose to go this route in the near future, however, although it cannot be ruled out as a long-term possibility if New Delhi succeeds in producing large quantities of HEU in the face of what continues to be a relatively small inventory of weapon-grade plutonium. In an effort to correct this last problem, India has announced the construction of a new unsafeguarded reactor, thereby suggesting that plutonium continues to be the material of choice for its weapon program.

developers are satisfied that such weapons can perform adequately in the face of hostile environmental conditions.

As a complement to increasing India’s fissile-material production capability and continuing with its nuclear tests, Alternative V would also require the development and production of relevant delivery systems, both aircraft and missile. As far as the former are concerned, India’s needs vis-à-vis Pakistan can be fulfilled simply through the use of equipment currently in its conventional inventory. These aircraft—mainly the Jaguar, the Mirage 2000, and eventually the Su-30—can be employed in surface strike operations. If committed to a nuclear delivery role, however, such aircraft would have to be configured specifically for that purpose, and this would require hardware modifications that relate both to navigation equipment and to the carriage of weaponry as well as software modifications that allow for the safing, arming, and fuzing of the weapon just prior to release. Even more significantly, however, these modified aircraft and their crews would have to be specially secured, withheld from conventional operations, and possibly based at airfields located in close proximity both to the weapon assembly areas and to their intended targets.

It should also be noted that while India already has the latent capability to deliver nuclear weapons against Pakistan through air-breathing platforms, it currently lacks a comparable capability vis-à-vis China. Indeed, all Indian strike aircraft are relatively short-legged in comparison to the vast depth of the Chinese heartland, and therefore, there appear to be few alternatives available to India other than to acquire long-range theater bombers or switch entirely to missiles where nuclear operations against its northern neighbor are concerned. Because the former systems are too expensive and the latter capabilities are currently nonexistent, however, it is not surprising that Indian defense analysts have unequivocally argued that the focus of India’s future weaponization efforts “must shift to [the] Agni.”

The Agni missile, currently India’s principal IRBM system, was initially intended to serve mainly as a test bed for validating certain

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key technologies relating to missile guidance and reentry. In its original form, the missile was simply a technological monstrosity: It was a hybrid vehicle based on the marriage of a solid-fueled first stage (derived from the civilian Satellite Launch Vehicle [SLV]) with a liquid-fueled second stage (derived from the Prithvi missile) and, as such, suffered from all the readiness and safety limitations that still affect the Prithvi SRBM. Further, the range capabilities demonstrated by the Agni-I test bed, some 1000 km, effectively precluded the weapon’s use to interdict the most important Chinese targets of interest to any Indian force planner—presumably the chief reason IRBMs were developed in the first place. Consequently, several Indian analysts argued long before the May 1998 nuclear tests that the original test bed should become a precursor for a new missile, Agni-II, to be “powered by newer and better solid propellants and having a longer range.”

This new missile, argued Lieutenant General J.F.R. Jacob, the distinguished architect of India’s 1971 victory in the east, should possess an operational range of at least 5000 km and be a “rugged system capable of quick firing from silos, truck chassis or railway carriages.” The Agni-II was finally tested in April 1999 and, while not meeting all criteria laid out by Jacob and others, has nonetheless demonstrated several advances that augur well for India’s desire to create a land-based missile force: The new variant is entirely solid-fueled; is designed as a rail-mobile system; has demonstrated a 2000-km range; is equipped with a maneuvering reentry vehicle; and has been “designed to carry a nuclear warhead if required,” with the warhead itself having been tested as part of the May 1998 series.

It is therefore evident that operational missiles such as the Agni-II and its follow-on versions, whether based in hardened silos or deployed in road- or rail-mobile modes, would represent an enormous leap in India’s nuclear capability. At the same time, however, some analysts have called on India—even more ambitiously—to move away from land-based systems altogether. In an effort to reduce the possibility of splendid counterforce strikes as well as to minimize the

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286 Ibid.
threat facing the Indian heartland more generally, these analysts have argued that "deterrence must shift underwater."\textsuperscript{288} The cultivation of such capabilities would, however, require an acceleration of the country’s nuclear submarine program, the development of a new ballistic and/or cruise missile capable of submerged launch, and the design of a new class of compact but relatively high-yield warheads in addition to all the associated command-and-control systems and positive and negative controls associated with sea-based weapons.\textsuperscript{289} And while such capabilities are clearly several decades away, they do demonstrate that developing a robust nuclear arsenal as called for by Alternative V will demand a substantial increase in the effort India devotes to its nuclear estate, especially when viewed against its past record.

Even as these technologies are steadily acquired, however—assuming that India does in fact opt for Alternative V—literally thousands of other decisions and investments must be made in the arena of systems integration if the resulting arsenal is to be maintained at reasonable levels of responsiveness. Clearly, for example, it is not sufficient for India to have nuclear systems that embody high penetrativity if such systems are vulnerable to accidents at home or to unauthorized or mistaken use, as any of these outcomes could have catastrophic effects that would affect the nation’s ability and willingness to maintain such expensive deterrents over the long term. This immunity to accidents and to unauthorized or mistaken use must also coexist with a high level of prelaunch survivability, which implies in turn that the deterrents must be safe against any actions that may be undertaken by an adversary. The deterrent must also possess sufficient connectivity with its command authorities at all times so that it can operate as intended even amid the chaos of warfare and destruction. Safety, survivability, connectivity, and penetrativity thus remain the quadrangle of effective deterrence, and to the degree that the force is expected to remain highly responsive


\textsuperscript{289} "N-Submarine Best Bet Against Nuclear Attack, Says Navy," \textit{Indian Express}, December 12, 1999.
and ready for the conduct of nuclear operations, the tensions inherent in these four variables will only become more manifest.\textsuperscript{290}

To be sure, these tensions can be resolved, but not cheaply. In fact, it has been demonstrated that during the Cold War the bulk of nuclear-related expenditures incurred by both sides arose not from specific weapon systems as such but from the complex supporting and procedural systems that were designed to resolve some of the tensions among these four variables.\textsuperscript{291} Even if the arsenal India eventually develops is not maintained at levels of readiness approaching that of the U.S. or Soviet arsenals, the trade-offs imposed by these variables will still need to be resolved, and while their solutions may prove less costly than in the U.S.-Soviet case, such solutions will nonetheless require significant resources of the kind not applied before. In any event, developing a robust and reasonably ready arsenal of the sort Alternative V embodies will also involve a number of additional steps that must be completed before India can produce a credible deterrent that is visible to adversaries and bystanders alike.\textsuperscript{292}

First and foremost, this process would involve choosing an appropriate deterrence doctrine that would in turn drive considerations such as the choice of weapon design, force architecture, and command-and-control systems. Even if these efforts are for the most part surreptitious, the range of activities required to make Alternative V viable implies that India’s actions and intentions could not remain entirely ambiguous. While an increase in fissile-material production, for example, could be disguised somewhat, it is still likely to be noticed, especially if India were to exploit its power reactors to produce the increased levels of plutonium desired. In any event, increasing the production of fissile materials is the easiest element to disguise. By contrast, a new generation of nuclear weapon designs, especially those involving complex multistage configurations, would have to be serially hot tested if the high levels of confidence associated with a


\textsuperscript{292}Chellaney, "India’s Trial by Atom."
robust nuclear arsenal are to be attained by India’s security managers—and going to the trouble of developing such capabilities would in fact be inexplicable were they not to be confirmed through full-up testing and communicated to potential adversaries as part of the logic of deterrence. Finally, developing the kinds of long-range delivery systems exemplified by both ballistic and cruise missiles would inescapably involve a range of observable activities relating to their testing, production, and eventual deployment. Consequently, if India opts for Alternative V in the manner described earlier, the enigmatic dimensions of its previous nuclear capability—i.e., those relating to employment doctrine, command and control, and perhaps even some elements of force structure—could not be entirely sustained in its new strategic posture. The selection of Alternative V would therefore represent a considered, conspicuous, and deliberate alteration in national strategy—and would be interpreted as such by friends, neutrals, and adversaries alike.

While Alternative V would clearly make India a traditional nuclear power over time, the question of how this alternative would affect its security, flexibility, and status today remains open. Advocates of Alternative V, of course, believe that the country’s security environment has deteriorated so significantly that developing a full-blown nuclear arsenal would represent little more than a long-overdue increase in national security. Such an argument holds true, however, only if security is defined as the possession of clear and robust immunity to nuclear attack or coercion by other states. If this narrow definition of security is sustained, India’s safety will probably be enhanced by the possession of a full-fledged nuclear arsenal—but by the same token it may be undermined if a broader notion of security is admitted for consideration. If security is held to consist of preserving national integrity against all threats, both foreign and domestic, and is seen as deriving from the possession of comprehensive capabilities that include economic development, technological strength, and political coherence, then the selection of Alternative V—especially in the form of a full-fledged “tripid” developed immediately—may in fact contribute to the diminution of India’s security at this time.293

293 Lieutenant General V. R. Raghavan summarized this argument when he argued that “the challenge [facing India] lies in getting out of the nuclear maze the
Several analysts sensitive to this concern point out that a reduction in security would occur because Alternative V would precipitate the countervailing targeting of India by the declared nuclear powers, especially China. As such, these analysts maintain, India would be no better off than before and might in fact be worse off as a result of possessing a nuclear deterrent. This argument is less attractive than it first appears and consequently is unlikely to commend itself to Indian strategic planners, who would argue that the country is already targeted by its presumed adversaries, China and Pakistan, for strategic reasons and is unlikely to be targeted by the other nuclear powers—the United States, Russia, Great Britain, and France—simply because the power-political interests of these countries do not collide in any meaningful way with India’s strategic concerns. While there is probably considerable truth to this rejoinder, the fact remains that developing a robust and ready nuclear arsenal today could still undermine Indian security, broadly understood, for reasons that have little to do with being a strategic target of the nuclear operations conducted by other states. Rather, the burdens of Alternative V are a function of four different but related concerns that strike closer to home.

First, opting for Alternative V will impose both high direct costs and high opportunity costs, neither of which India can afford to incur at the present time. Depending on the deterrence posture to be serviced, the direct costs of a robust Indian arsenal could be considerable. Most Indian analysts dispute this claim on the grounds that several of the expenses associated with a nuclear arsenal could be treated as sunk costs that have already been borne as part of

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Government has built around itself [after the May 1998 tests] this has happened because of nuclear weapons having been granted an unwarranted centrality in India’s security discourse. The way out lies in placing a new perspective on nuclear weapons. There is more to national security than nuclear weapons alone. The Government needs to decide not so much the extent as the limits of India’s nuclear deterrent. The problem is less with nuclear weapons and more of a lack of conceptual clarity. In the interim, the dangerous uncertainty is not going to diminish” (italics added). See V. R. Raghavan, “Dangerous Nuclear Uncertainties,” The Hindu, March 13, 2000.


India's preparations for conventional warfare. Consequently, the additional expenditures required are seen to consist simply of the cost of a few dozen or so missiles—if the most modest example proffered of an Indian nuclear arsenal is taken as the benchmark. Unfortunately, even in this case the low direct costs advertised are deceptive because the final costs of any arsenal would include not only the cost of preparing the warheads and delivery systems (which might be written off as partially sunk) but also expenditures associated with the deployment regime, with safety, security, and training procedures, and with command, control, and communications arrangements. These requirements are immense where a full-fledged arsenal is concerned and are not comparable to the relative modest arrangements associated with the traditional posture of maintaining the option. Moreover, none of these supporting investments has thus far been made, and hence they would constitute entirely new expenditures that cannot be lightly dismissed as sustainable under the rubric of sunk costs. The experience of other nuclear powers in fact suggests that the most expensive component of a nuclear program is not the "business end" of the arsenal per se but rather the acquisition and maintenance of the supporting infrastructural and procedural systems that make the business end effective. These costs have never been systematically analyzed in the Indian context, however, and therefore all claims relating to the allegedly modest costs of a nuclear arsenal must be taken with a large grain of salt—especially because those estimates that do break down the costs of the arsenal suggest, for example, that command-and-control capabilities could be purchased for less than 15 percent of the total costs.

The opportunity costs of a nuclear arsenal must also be considered in this context. This concern is particularly critical today, a time when India, seeking to undo the stagnation of the past several decades, has deliberately chosen to deemphasize accelerated military spending in favor of comprehensive economic restructuring. It is

297 Joshi, "Marginal Costing."
300 See the breakdown in Joshi, "Marginal Costing," p. 23.
unclear whether increasing nuclear-related expenditures at a time when this process has just begun to bear fruit is either appropriate or rational given that India already faces competing and perhaps more pressing demands for public investment in infrastructural capacity, power generation, human capital, and agriculture. Moreover, India’s most pressing security problems currently center on combating domestic insurgencies and maintaining internal order, both of which place heavy demands on its conventional forces—and to the degree that the latter capability is degraded thanks to investments in an expanded nuclear force structure, India may well end up exposing its security to greater risks than might otherwise have been necessary.\footnote{M. L. Thapan, “Nuclear Games,” \textit{The Statesman}, September 29, 1999.} The opportunity costs of a robust nuclear arsenal may therefore turn out to be too high and much more subversive of Indian security when added to the already-steep direct costs of weaponization.

Second, India’s shift to a full-fledged arsenal would clearly imply that it has decided to forgo one of the two objectives sought by the strategy of maintaining the option—namely, supporting a relatively stable global nonproliferation order that provides significant benefits for Indian security. Opting for an arsenal today could contribute to the progressive and possibly irreparable weakening of this order, thus forcing the existing nuclear powers—especially the United States—to subject India to even more stringent constraints than those that currently apply. Such constraints would further impede India’s access to economic resources, technological expertise, and political support from abroad and would undercut the vital connectivity India needs to make its new strategy of participating in the global economy successful.\footnote{P. R. Chari, “What Is the Future of Nuclear India?” \textit{The Times of India}, May 17, 1998.} A forced return to autarky at a time when globalization holds promise of helping India emerge from poverty and underdevelopment not only would be tragic from the perspective of economic modernization but would also be highly significant when viewed from the standpoint of India’s future capacity to compete with China and other countries in the arena of power politics.
Third, the decision to develop a robust nuclear arsenal immediately could well contribute to a deterioration in India’s immediate regional security environment. At the very least, it would provoke a charged Pakistani response and quite possibly open the door to an undesirable arms race. This is of import because any arms race within the subcontinent would have both conventional and nuclear dimensions—and although India would probably “win” such a race eventually given its larger resource base, the critical question is whether this is a race that India should even contemplate.\textsuperscript{303} The concern here cannot simply be Indocentric, as any arms race that involves asymmetric overexertion by Pakistan cannot be in New Delhi’s interests if the end result is increased insecurity and heightened risk taking on Islamabad’s part. A nuclear competition between India and Pakistan would also prejudice the possibility of reconciliation with respect to outstanding political disputes; would retard the latter’s progressive if reluctant acceptance of its inferior bargaining position; and would distort the overall priority relating to development throughout the South Asian region. It could also have corrosive effects beyond South Asia proper in that a sudden rush to develop a nuclear arsenal would reinforce similar efforts already under way in Iran and Iraq. These programs, which the United States is currently attempting to terminate, could exacerbate security dilemmas in the Persian Gulf and throughout the Middle East and possibly create unforeseeable complications with regard to energy access that may ultimately come to haunt the South Asian states themselves.\textsuperscript{304}

Fourth and finally, India’s decision to develop a nuclear arsenal would impede its efforts to develop a sturdier political relationship with the United States. U.S.-Indian relations, which often seem crisis-prone even in the best of times, were on the verge of reaching a profitable equilibrium prior to India’s 1998 nuclear tests. After much soul searching, the United States had for all practical purposes abandoned its earlier efforts at rolling back the nuclear programs in South Asia. In part, this was because the United States had acquired a better appreciation of the strategic compulsions that motivated both India and Pakistan to begin their programs in the first place. This gradual acceptance has been held at risk by the 1998 nuclear tests

and has given rise to new U.S. efforts to restrain the nuclear programs in the subcontinent. And while the United States is still struggling—in concert with both India and Pakistan—to develop a new equipoise with respect to nuclearization in South Asia, it is important to recognize that Washington is unlikely to take kindly to a runaway expansion of India’s (or, for that matter, Pakistan’s) strategic programs, especially if this expansion threatens larger nonproliferation interests that go well beyond the Indian subcontinent.\textsuperscript{305}

Even apart from the issue of proliferation, however, India seeks U.S. support in a variety of endeavors ranging from securing a permanent seat on the U.N. Security Council to greater strategic understanding to expanded economic intercourse. All these efforts would be held at risk—to New Delhi’s great disadvantage—if India were to press ahead in developing a robust and ready arsenal at a time when the threats justifying such a posture are not obvious to all either within or outside India.\textsuperscript{306}

When these four counts are carefully assessed, it is hard to justify the claim that a robust nuclear arsenal, if developed today, would enhance India’s security. In a similar manner, such an arsenal is unlikely to increase India’s flexibility. Acquiring an arsenal of the kind described earlier would in fact imply that India has embarked on the road of no return. Once instituted in full-fledged form, this arsenal would be difficult and costly to draw down, and such a drawdown

\textsuperscript{305} Secretary Albright enunciated this concern clearly when she noted that

The fundamental goal of President Clinton’s visit to India was to set our course for a qualitatively different and better relationship with India, not a simple return to the status quo before its nuclear tests. The limits on our ability to cooperate with India, and Pakistan, are a matter of U.S. law, as well as our international obligations. Achieving the level of cooperation with India that we both desire will depend on progress made toward nonproliferation.

The United States’ approach to nonproliferation is global. We cannot abandon it simply because we desire an improved relationship. Any other stance would break faith with all the nations—from South Africa to South America to the former Soviet Republics—who have made difficult decisions to strengthen their own security and the cause of nonproliferation by joining the NPT.


would probably never occur except as part of a global agreement on
denuclearization—an outcome that, even if possible, is many
decades away. Any hope that it could be used in the interim to ex-
tract concessions from the declared nuclear states (with respect to
global denuclearization or otherwise) would be illusory as well, since
few tangible inducements could be offered in exchange for an Indian
promise to forgo its nuclear weaponry. All that might be possible are
simply bilateral nuclear arms control agreements with Pakistan—but
surely if this were the goal, it could be achieved without having to
traverse the circuitous route of developing a full-fledged arsenal. In-
dia’s quest for status may remain similarly unfulfilled despite its
choice of a nuclear arsenal. The latter will bequeath to it the distinc-
tion of being both a de facto nuclear state and a militarily significant
entity (a status it already enjoys), but if such recognition were to
come at the cost of economic weakness and technological hurdles, it
would be but an empty accomplishment. As one of India’s best-
known advocates of a ready arsenal concluded,

[The] glaring mismatch India has to tackle is between its economic
capacity and security needs. Without economic power, India can
have no security, even with nuclear weapons. The way Pakistan has
sunk economically since conducting its tests should serve as a les-
son to India to accord the highest priority to putting its economic
house in order. India should also be cognizant of the danger that
nuclear weapons in the hands of a soft state can invite greater insec-
urity. 307

Precisely because this very outcome could result from the pursuit
of Alternative V today, it seems reasonable to conclude that a ready
arsenal would appear to promise only pernicious consequences for
security and, at best, ambiguous benefits where India’s flexibility and
status are concerned.

**WHAT WILL INDIA CHOOSE?**

Given this range of alternatives, what will India choose? Clearly,
there appear to be three distinct though closely related options
available to it, each with a differing set of predicates (see Table 2).

307 Chellaney, “India’s Trial by Atom.”
<table>
<thead>
<tr>
<th>Fissile-material production base</th>
<th>Alternative III: Continue to Maintain Nuclear Option</th>
<th>Alternative IV: Initiate Development of &quot;Recessed Deterrent&quot;</th>
<th>Alternative V: Acquire Robust and Ready Nuclear Arsenal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Produce and separate weapons-grade plutonium at low rates; continue production of enriched uranium at low rates.</td>
<td>Produce and separate weapons-grade plutonium at low rates; continue production of enriched uranium at low rates.</td>
<td>Accelerate production and separation of weapons-grade plutonium; accelerate production of enriched uranium.</td>
<td></td>
</tr>
<tr>
<td>Design work; theoretical research; no hot testing; fabricated components but no completely assembled weapons?</td>
<td>Design work; theoretical research; no hot testing; maintain existing stockpile of unassembled weapons but no &quot;serial production&quot; of new devices.</td>
<td>Hot testing of current and advanced nuclear designs; &quot;serial production&quot; of completely assembled weapons.</td>
<td></td>
</tr>
<tr>
<td>RDT&amp;E only; no production and deployment of dedicated nuclear delivery systems; no modification of dual-use systems.</td>
<td>RDT&amp;E primarily; acquisition of long-lead items but no production and deployment of dedicated nuclear delivery systems; no modification of dual-use systems.</td>
<td>RDT&amp;E, &quot;serial production,&quot; and deployment of dedicated nuclear delivery systems; modification of dual-use systems with new deployment arrangements.</td>
<td></td>
</tr>
<tr>
<td>No action</td>
<td>Initiate development of intelligence and warning systems, meteorological systems, secure communications network, physical command-and-control infrastructure, BDA systems.</td>
<td>Comprehensive acquisition of intelligence and warning systems, meteorological systems, secure communications network, physical command-and-control infrastructure, BDA systems.</td>
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</table>
Table 2 (continued)

<table>
<thead>
<tr>
<th></th>
<th>Alternative III: Continue to Maintain Nuclear Option</th>
<th>Alternative IV: Initiate Development of “Recessed Deterrent”</th>
<th>Alternative V: Acquire Robust and Ready Nuclear Arsenal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedural systems</td>
<td>No action</td>
<td>Initiate development of positive-negative control systems, national command authority, civil-military coordination arrangements, nuclear requirements planning structure.</td>
<td>Complete development of positive-negative control systems, national command authority, civil-military coordination arrangements, nuclear requirements planning structure.</td>
</tr>
<tr>
<td>Ideational systems</td>
<td>No action</td>
<td>Initiate development of nuclear deterrence doctrine; targeting doctrine, methodology, and staff; war termination concepts.</td>
<td>Enunciate nuclear deterrence doctrine; complete development of targeting doctrine, methodology, and staff; articulate war termination concepts.</td>
</tr>
<tr>
<td>Strategic defense</td>
<td>No action</td>
<td>Initiate development of civil defense procedures; modernize IADGES; acquire ATBMs; reorganize disaster management organizations.</td>
<td>Systematic acquisition of ATBMs and comprehensive modernization of the IADGES; refine civil defense procedures and reorganize disaster management organizations.</td>
</tr>
</tbody>
</table>
These positions are sometimes so similar that a casual observer might be tempted to dismiss their differences altogether. This attitude is understandable given the inherent complexity of the larger process of nuclearization. Yet these options must be understood for what they are: “ideal types” that attempt to give policymakers on both sides room to maneuver while simultaneously providing analysts with the kinds of fine-grained distinctions that, as Dunn and Overholt lamented more than two decades ago, can seldom be found in proliferation studies. In any event, these options are best viewed as a heuristic device for framing future Indian choices—and taken as such, the analysis above suggests that despite the 1998 nuclear tests, New Delhi remains at a crucial crossroads with respect to its nuclear posture. India has tested weapons and has declared itself to be a nuclear weapon state. This declaration suggests that New Delhi will continue to develop and maintain a stockpile of assembled nuclear weapons, but even this outcome does not automatically follow from the declaration of nuclear status.

When the three nuclear postures outlined in Table 2 are closely examined, it becomes obvious that India’s present posture locates the country slightly to the right of Alternative III. India possesses nuclear weapons, even if only in disassembled form, but it still does not possess the panoply of delivery capabilities it desires or the supporting infrastructure and procedural and ideational systems necessary for the effective conduct of a wide range of nuclear operations. This implies in turn that India’s claim to have become a significant nuclear power as a result of its tests is at best premature and at worst preposterous. Indeed, it is not even clear whether these tests changed anything as far as India’s raw strategic capabilities are concerned, since the development of both nuclear weapons and assorted delivery systems, together with their potentially slow production, would have continued even if the 1998 nuclear tests had not taken place. And while these tests will no doubt enhance both India’s and Pakistan’s ability to pursue some of these objectives, it is too

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308 Dunn and Overholt, “The Next Phase in Nuclear Proliferation Research.”
310 Chellaney, “How Pokhran II Has Bombed.”
early to argue that they have engendered a qualitative change in the regional environment at least as far as both states’ technical proficiency is concerned; if anything, they have merely confirmed capabilities that most observers had long suspected existed in the region. By contrast, the 1998 tests do affect U.S. nonproliferation policy, which had sought to maintain India and Pakistan in an ambiguous status so as to sustain the façade of a global nuclear order consisting of only five legitimate nuclear weapon states. Secondarily, they affect the global nuclear regime insofar as they could create demonstration effects that lead other states to pursue their nuclear weapon programs more vigorously. At the same time, they have not altered, as many Indian analysts have claimed, either the global balance of power or the evolving regional power-political order in South Asia.

All of this implies that India still confronts a set of choices similar to those it faced prior to the tests: It could return to a new version of simply maintaining the option; it could switch to a receded deterrent that involves no serial production or new deployment of nuclear devices and delivery systems but requires improvements in ideational resources, organizational capacity, and supporting infrastructure; or it could move toward a robust arsenal that calls for the development of all the war-fighting capabilities necessary for the prompt conduct of a wide variety of nuclear operations. Although the first alternative has more proponents than the second in the domestic arena, most Indian security elites seem wedded to some version of the third. The government of India itself has not formally announced its own preferences in any detail except to suggest that India will create a “minimum, but credible, nuclear deterrent”311 at some point in the future. It is clear, however, that whatever the exact predicates of this deterrent may eventually be, India’s emerging nuclear posture will be determined by three issues.

The first issue centers on India’s intuitions about what really deters. This is an issue with which both the United States and the Soviet Union struggled throughout the Cold War, and while all the major theories of deterrence—that nuclear weapons per se deter, that assured punishment deters, and that assured denial deters—had their
protagonists, only the third school finally won out, at great cost to both sides. All Indian elites seem determined to avoid traversing this historical route and while the first two schools are well represented among India’s security elites—with the former favoring a return to maintaining the option and the latter arguing for some manifest deterrent force—it is most likely that some solution offered by the latter will finally prevail.

The second issue relates to India's assessment of the direct and opportunity costs of creating a deterrent. The first of these issues is easier to assess than the second, but only slightly. What seems clear, however, is that given India's developmental imperatives, its national leadership will seek to purchase deterrence at minimal cost. This gives rise to legitimate fears about an unstable deterrent, or at least a deterrent that serves more as an invitation to attack than as an antidote to it. Since most of the standard solutions to this problem are both capital-intensive and costly, it is likely that India will develop a nontraditional deployment and operational posture that attempts to obviate the problems of instability while still acquiring some sort of a deterrent at low cost.

The third issue pivots on India's willingness to accept risks that will define the form and readiness levels of the deterrent it seeks to create. In this context, the more risk-averse the leadership is about positive control over its nuclear arsenal—i.e., about ensuring reliable launch on command—the more likely it will be to move in the direction of developing a large and complex deterrent force consisting of a significant number of nuclear weapons and delivery systems coupled with an elaborate command-and-control structure. Because this posture is expensive and goes against the grain of traditional civil-military relations in India, however, a future Indian deterrent will likely seek to maximize simplicity while aiming for a level of readiness that ensures better negative control—i.e., preventing unwanted launch of nuclear weaponry—rather than positive control in the sense defined above.

Each of these three variables obviously embodies a wide spectrum of options, and unfortunately there are no “correct” answers to any of the difficult issues they pose. More significantly, even those answers proffered today may not hold as new governments take the helm in New Delhi tomorrow. The desire for a minimum deterrent,
However, suggests at least this much: that the present government believes that actual nuclear weapons, not simply existential nuclear capabilities, are critical for deterrence but that the costs of a deterrent are significant enough to prevent it from being conceived as an open-ended force that must be maintained both at high absolute levels and at high relative levels in comparison to the capabilities of India’s adversaries. On this question at least, it appears that both the present government and the principal opposition party, the Congress, are agreed.\textsuperscript{312}

This implies that Alternative III is no longer viable, at least for now. India will not return to maintaining the option, whatever its merits may be, and, if anything, the present regime is likely to initiate activities that will make it difficult (and perhaps even unnecessary) for its successors to retreat from its chosen course. The pace of movement may be altered and the degree of visibility accorded to certain actions may be muted by subsequent governments, but the general direction will probably not be altered radically, since re-trenchment is costly in both international and domestic terms. The desire for a minimum deterrent also suggests that New Delhi is not satisfied by the alternative of a recessed deterrent \textit{as an end state}. However, given the critical issues of cost and risk tolerance, it is not clear that a minimum deterrent will eventuate in Alternative V—a robust and ready arsenal—either. In fact, it is most likely that New Delhi, following its ingrained habit of seeking the “veritable middle path,” will over the next several years split the difference further and adopt a nuclear posture that begins with creeping weaponization—now understood in the broad sense—but ultimately ends somewhere between Alternatives IV and V. This peculiar Indian equilibrium, illustrated in Figure 3 and dubbed a “force-in-being,” will be examined in some detail in the next chapter in the context of a larger discussion about Indian attitudes toward nuclear deterrence.

Figure 3—India’s Emerging Nuclear Posture