



Introduction

The impish, round-faced physicist wiped sweat from his brow in the 107-degree heat. Sixty-one, he was too old to be wearing army fatigues. They provided less heat relief than light white cotton. Yet, there he was, a South Indian Brahmin in the Rajasthani desert, the chairman of the Indian Atomic Energy Commission pretending to be an army major general. Dr. Rajagopala Chidambaram was about to make his mark on Indian, and perhaps world history.¹ At his side sat Dr. A. P. J. Abdul Kalam, a short sixty-six-year-old aeronautical engineer with long white hair, a Muslim with a self-professed fondness for Hindu culture who now bore the alias Major General Prithviraj. The code name betrayed the ironic wits of these men and their colleagues. Prithviraj was New Delhi's twelfth-century Hindu ruler, and Prithvi was the name of India's first nuclear-capable ballistic missile, which Kalam had helped bring into the world.

Chidambaram and Kalam were not playing soldier; they were sitting, disguised, in a small control room listening to a fateful countdown: five, four, three, two, one . . . They were leaders of the strategic weapons establishment, an enclave of scientists and engineers in India's defense research and atomic energy institutions who for five decades had been pushing India to join the exclusive club of nuclear weapon states.² Now, on May 11, 1998, they were on the verge of crossing the threshold unambiguously.

Almost exactly twenty-four years earlier, in May 1974, Chidambaram and a couple of dozen fellow scientists and engineers had encamped at this same desert site 150 kilometers from the Pakistani border, near the village of Pokhran. During the nights as they lay on cots in the hot air they looked to the skies and searched for the light of a passing American satellite, wondering whether they would be detected as they prepared to conduct India's first nuclear explosion. They went

unnoticed, and on May 18, 1974, the team detonated what India's leader, Indira Gandhi, insisted was a "peaceful nuclear explosive." But the ambivalence of this peaceful nomenclature meant trouble for the strategic weaponeers. Indira Gandhi and successive prime ministers resisted the scientists' and engineers' desires to conduct additional tests and develop an overt nuclear weapon program. Moral doubt, political turmoil, and the censure of the United States and the international community put the brakes on their plans. For twenty-four years the scientists and engineers pushed against the Indian government's self-restraint.

Now, in the hot May of 1998, veterans like Chidambaram and newer additions to the enclave like Kalam and K. Santhanam were on the verge of manifesting decades of theoretical and experimental work. The team in Pokhran had learned lessons from previous frustrated testing attempts, most recently in 1995, when U.S. satellites had spotted them. Washington then exerted considerable pressure on India's prime minister to desist, which he did. This time, more than two years later, the scientists, engineers, and laborers employed elaborate camouflage—including the fatigues on their backs to make them look like army men, not bomb builders and testers. They worked in the open desert only when they knew spy satellites were not overhead. And this time they had the firm blessing of a new government led by the Bharatiya Janata Party (BJP), which unlike all previous ruling parties rejected India's normative aversion to nuclear weapons. The BJP wanted the bomb, and the strategic enclave wanted to give it to them. Together they were going to show themselves and the world that they had mastered the ultimate in human power over nature, the hydrogen bomb.

At 3:45 P.M. local time, the countdown ended and the desert rumbled. Three nuclear devices exploded simultaneously. The scientists, engineers, and army laborers cheered. It was possible that India, and perhaps the world, would never be the same. Whether for good or ill remained to be learned.

Prime Minister Atal Behari Vajpayee, a soft-spoken seventy-one-year-old bachelor who had built his Hindu revivalist party into a formidable political presence, declared that India was now a nuclear weapon power. Its exact capabilities—quantitatively and qualitatively—remained uncertain to the Indian public and the outside world. Yet India certainly possessed now-proven designs for compact fission weapons of destructive power akin to the bombs that destroyed Hiroshima and Nagasaki, and probably for more powerful boosted-fission weapons. With subsequent refinement, thermonuclear weapons, or H-bombs, were also now within India's grasp. In 1998, analysts believed India possessed roughly twenty-five ready-to-assemble fission weapons, with enough weapon-grade plutonium for perhaps an additional twenty-five, depending on assumptions regarding warhead designs.³ India also operated a pilot plant for extracting tritium from heavy water, a key isotope for boosted-fission and thermonuclear weapons. Several means existed for delivering these weapons. Imported Jaguar and Mirage-2000 fighter-bomber aircraft conceivably were capable of performing this role, and some unknown number of these aircraft had been modified to conduct nuclear

missions. India also possessed a few dozen Prithvi ballistic missiles with ranges from 150 to 250 kilometers. These conceivably could carry nuclear weapons to targets in Pakistan.⁴ The longer-range Agni missile was still under development. A first-generation design of the Agni system had been tested three times, to ranges of approximately 1,000 kilometers, and in 1998 the Defence Research and Development Organisation was preparing to flight-test an improved version intended to range up to 2,500 kilometers. The Agni was now slated to be the nuclear weapon delivery system against China. Indian strategic analysts suggested that the state should advance its ballistic missile capabilities to the point where targets 5,000 kilometers away could be reached.

However, India still lacked a national security and defense strategy to determine the role of nuclear weapons. Since 1974, India had pursued a “nuclear option” strategy. This entailed the capability to assemble nuclear weapons quickly—within hours or a few days—paired with the expressed intention not to do so until a grave threat to its security arose. The nuclear option reflected India’s normative aversion to nuclear weapons, its emphasis on global nuclear disarmament, and political leaders’ preferences to concentrate resources and energy on economic development. Indian leaders and some strategic analysts believed that nuclear deterrence could be effected without prior deployment of nuclear weapons mated to their delivery systems. They categorically rejected the doctrines and arms racing of the cold war superpowers. They tended to view preparations for fighting a nuclear war as excessively dangerous, costly, and immoral. In South Asia, especially, the proximity of India and Pakistan to each other made the risks of radiation fallout great even if an aggressor could execute an early strike. Instead of building redundant nuclear arsenals on hair-trigger alert in the name of *certain* mutual destruction, the few Indians who attended to these issues believed that it was adequate to make an adversary *uncertain* that nuclear threats or attacks on India would *not* be met with nuclear reprisals. Nuclear weapons pose such horrifying threats, they argued, that this approach was adequate to deter a rational adversary. No greater capability would deter an irrational adversary.

Nonetheless, in the 1990s, Indian strategists and a few politicians began seriously to question the adequacy of the “option” strategy and nonweaponized deterrence. The Nuclear Non-Proliferation Treaty was extended indefinitely in 1995, perpetuating the possession of nuclear weapons by the United States, Russia, Britain, France, and China for the indefinite future while denying the rest of the world these weapons. This outraged Indian specialists and the attentive public, prompting rethinking of India’s own nuclear policy. Some Indian military and nongovernmental strategists had long ago decided that the country should deploy nuclear weapons. For them, the developments in the mid-1990s offered another political opportunity to make their case. True believers in nuclear disarmament had been driven from effective power by 1998 or had been disillusioned by the failure of the major powers to pursue nuclear disarmament even after the cold war’s end. Cynics who had used complaints about inadequate progress in nuclear disar-

mament to cover India's own ongoing nuclear weapons and ballistic missile programs wanted to lift the veil. The strategic enclave had run out of patience. After twenty-four years of self-restraint, the May 1998 nuclear tests reflected all of these changes.

Still, no new doctrine guided the tests, only vague imperatives to show national will and status. Nor did a consensus emerge after the tests on what India's nuclear doctrine should be. Several developments seemed likely. India might or might not decide to deploy nuclear weapons on aircraft or ballistic missiles in an overt, readily usable posture. Deployment or not, the state would develop formal command and control arrangements to demonstrate clearly that India could and would respond to nuclear threats against it. India would also maintain its traditional insistence that it would not use nuclear weapons first. That is, India would launch nuclear weapons only in retaliation to a nuclear attack. India also would eschew nuclear-war-fighting doctrines in hopes of limiting the number of nuclear weapons it would possess to a minimum necessary to cause politically unacceptable damage to an aggressor. However, it remained unclear whether partisan political pressures within India and Pakistan would thrust the two states into an arms race despite their professed desires to minimize their arsenals. Even settling on and implementing these basic doctrinal principles would require overcoming inertia, interservice rivalries, political fractiousness, and preoccupation with more pressing domestic issues.

OBJECTIVES, THEMES, AND SUMMARY FINDINGS

India's Nuclear Bomb is first and foremost an analytic history of how India's nuclear explosive program evolved from its inception in 1947 through the early aftermath of the May 1998 nuclear tests. Each chapter uncovers actions and decision-making processes generally unreported in the existing literature. The history is divided into three phases. Chapters 1 through 7 chronicle the period from 1947 through 1974, during which Indian scientists developed the technical means to produce nuclear weapons within a polity that had moral doubts and competing priorities. This first phase culminated in 1974 when the scientists finally persuaded the government to authorize the first nuclear explosive test. Chapters 8 through 12 chronicle the second phase, from 1975 through 1995, in which India surprised itself, the United States, and much of the world by not conducting follow-up nuclear tests and not building a nuclear arsenal. Indian scientists and engineers continued, often secretly, to develop nuclear weapon and ballistic missile capabilities during this period, but moral and political doubts, domestic turmoil, and competing national and international priorities caused India's leadership to refrain from evolving nuclear postures and policies like those of the United States, Russia, the United Kingdom, France, China, and Israel. India's policy of self-restraint began to give way in 1995 due to developments in the international nonproliferation regime and political changes within India. This marked the transition to the 1998

nuclear tests and the third phase of India's nuclear history, as recorded in chapters 13 through 15.

By shedding light on the past, the book seeks also to illuminate how India and other states may move in the future. Leading theories and expectations regarding nuclear "behavior" derive primarily from the U.S. and Soviet experiences as well as from modern European history. Yet, in the future, other states, particularly in Asia, seem likely to play equally important roles in international security. The Indian case can yield useful insights into the dynamics of this larger set of states in the post-cold war world. Thus, history, international relations theory, and non-proliferation policy meet or perhaps collide in this volume, particularly in the concluding chapter, which considers the meaning of India's nuclear policy for global nuclear theory and policy.

Three major questions are answered in this volume.

1) *Why did India develop its nuclear weapon capability when it did and the way it did?*

Conventional wisdom holds that India has sought and acquired nuclear weapon capability to redress threats to its security. China and Pakistan, separately or together, pose the threat. The U.S. Defense Department's 1996 publication *Proliferation: Threat and Response* reflected this typical assessment:

The bitter rivalry between India and Pakistan which dates to the partitioning of the subcontinent in 1947, remains the impetus behind the proliferation of NBC [nuclear, biological, and chemical] weapons and missiles in the region. The security dynamics of the region are complicated further by India's perception of China as a threat. . . . India's pursuit of nuclear weapons was first spurred by a 1962 border clash with China and by Beijing's 1964 nuclear test.⁵

The official U.S. understanding of why India (and Pakistan) possesses nuclear weapon capability echoes the dominant scholarly conception of nuclear proliferation. Structural Realism, arguably the most influential theory in the international relations field, predicts or explains that states in an anarchic international environment will seek to maximize their power for self-preservation or, more neatly, their security.⁶ If an adversary or adversaries possess nuclear weapons, or appear likely to in the future, a state would be expected to seek nuclear capability to balance that threat in the absence of alternative means.⁷ Applying this theoretical model to India leads to the common conclusion that the "central cause of Indian nuclear proliferation is a realist one, it was to match the capabilities of China. . . . Only India's nuclear capabilities could elevate India to a position where it could not be subject to Chinese nuclear coercion."⁸

(Structural Realism is an outgrowth of the Realist school of thought in international relations. Each is based on assumptions and axioms about how states behave in the international system, along the lines summarized above. When referring to these schools of thought and their formal assumptions, this text capitalizes "Realism" and "Realist." This is to distinguish Realism as a conceptual and policymaking paradigm from the use of the term "realism" to connote an actor's

awareness that the international milieu is a frequently rough place where leaders and states have mixed motives ranging from idealism to power lust, and where threats of violence often appear, requiring leaders to prepare for the worst. One may realistically comprehend international realities without subscribing to Realism or Structural Realism as schools of thought or “manuals” for policymaking.)

Assuming that states such as India make decisions according to Realist models and are driven primarily by national security imperatives, Western theorists and policymakers expect that India should build *and deploy* a nuclear arsenal of sufficient quantity and operational quality to ensure that it could withstand an adversary’s first strike and retaliate with enough nuclear force to end a war on India’s terms.⁹ Indeed, according to these theories India should have built, deployed, and operationally fine-tuned such a survivable second-strike arsenal long ago.¹⁰

The following chapters demonstrate that the prevalent explanation of why and how India developed nuclear weapon capability, as just summarized, is based on a number of erroneous “facts” and assumptions. Moreover, the story told through this conventional explanation is woefully incomplete. Whereas most theorists and policymakers dealing with nuclear proliferation posit that security concerns singularly determine state nuclear policies, this study shows that India’s development of nuclear weapon capability only vaguely responded to an ill-defined security threat. Furthermore, India’s forbearance in proceeding further to deploy a nuclear arsenal—from 1964 to 1998, and perhaps beyond—also cannot be explained primarily by reference to external security considerations or the universal applicability of Western models of nuclear deterrence.

Domestic factors, including moral and political norms, have been more significant in determining India’s nuclear policy, as this book details. Often, tensions between domestic interests have made this policy appear ambivalent and ambiguous. India has been torn between a moral antagonism toward the production of weapons of mass destruction, on one hand, and on the other hand, an ambition to be regarded as a major power in a world where the recognized great powers rely on nuclear weapons for security and prestige. India’s domestic imperative to foster socioeconomic development has clashed with an interest in building up military strength. India’s policymaking processes and institutions also have affected its nuclear history: Indian political leaders and the leading scientists have consciously excluded the military from nuclear decision making, again for internal reasons. Each of these material and ideological factors has been in some way affected by India’s colonial past and postcolonial identity. Acquiring nuclear weapons proves that Indian scientists are as talented as those of the world’s dominant powers; doing so in the face of the U.S.-led nonproliferation regime, which Indians consider a system of “nuclear apartheid,” reasserts India’s repudiation of colonialism. Yet, if India followed fully the nuclear paths of the United States, the United Kingdom, or China, it would violate its own quest to be morally superior to and more humane than these states. These and other related factors largely explain the twists and turns of India’s nuclear history from 1947 through 1998.

2) *What are the factors that keep India from stopping or reversing its nuclear weapon program?*

Proliferation entails state decisions to acquire nuclear weapons. Nonproliferation involves decisions to verifiably abjure and, in some cases, “reverse” acquisition of nuclear weapons. The latter practice of eliminating capabilities actually amounts to *un*proliferation, or disarmament. Proliferation and unproliferation are distinct phenomena, even if they are often conceptualized as flip sides of the same coin. (As the cold war major powers shaped the lexicon and framework of global nuclear policy and the nonproliferation regime, they distinguished between their own accretions of nuclear weapons and the acquisition of nuclear weapons by other states. They called the latter “proliferation.” Similarly, they distinguished arms control and disarmament from “nonproliferation,” overlooking the essential similarity between disarmament and the hoped-for nonproliferation process of rolling back nascent nuclear weapon capabilities. This book maintains the traditional categorical and lexicographic distinction for convenience’s sake and refers to the objective of reversing proliferation as “unproliferation” instead of disarmament, although the same processes are required to achieve either objective.)

Almost all of the existing literature assumes that to reverse proliferation it is necessary only to know and remove the causes that drove a state to acquire nuclear capability in the first place. Assuming that security concerns singularly determine state interests in acquiring nuclear weapons, the prevalent literature posits that if insecurities are removed, unproliferation should occur. However, India’s nuclear program challenges these assumptions. India’s nuclear weapon capabilities have assumed deeply rooted *domestic* importance independent of security considerations. The process of building nuclear weapon capabilities has created interests, bureaucratic actors, beliefs, perspectives, and expectations within the state and society. That is, proliferation qualitatively changes the state that engages in it, altering the array of interests that must be addressed before unproliferation can occur. The Indian case suggests that these changes and their effects are particularly important in democracies.

This is not to say that security considerations have been unimportant. India probably will not relinquish its nuclear weapon capabilities as long as Pakistan possesses similar capabilities and as long as the Sino-Indian border dispute remains unresolved and those two nations’ strategic relationship unsettled.

Yet, as the narrative chapters of this volume detail and the conclusion analyzes, specific domestic factors greatly complicate the prospect of India’s formally constraining or eliminating its nuclear weapon and ballistic missile capabilities. These factors include the perception that nuclear capabilities symbolize India’s achievement of scientific-technical prowess and national sovereignty and establish India’s membership in the aristocracy of nuclear states who set the standards of international rank. India also perceives the U.S.-led nonproliferation regime as a racist, colonial project to deny India the fruits of its own labor and the tools of its own security. These perceptions have become stronger as India’s nuclear capabilities

have grown, and they have become politically potent thanks to the exertions of the strategic enclave. As the conclusion of this volume suggests, democracy in India—and perhaps in other states—makes unproliferation even less likely. This has major implications in light of the fact that seven of the eight declared and undeclared nuclear weapon states today are democracies and the hope of stopping the further spread of nuclear weapons over time may depend on these states' willingness to pursue nuclear disarmament, or unproliferation.¹¹

3) *What effects has the United States had on India's nuclear intentions and capabilities?*

The extant literature concludes that the United States generally has failed to develop coherent and effective policies toward South Asia.¹² Lacking major intrinsic interest in South Asia, the United States viewed India and Pakistan largely as pawns in the cold war. This instrumental approach exacerbated the inevitable difficulties posed by deep cultural differences and postcolonial antagonisms between the United States and the South Asian nations. Worse still, the intractability of Indo-Pak enmity and rivalry has made it extremely difficult for the United States to pursue solid relations with both states at the same time. However, even allowing for this inauspicious backdrop, in the specific realm of nuclear nonproliferation policy, Washington's interactions with India have been particularly ineffective in reducing India's motivations to acquire nuclear weapon capability. On the other hand, U.S. policy and the international nonproliferation regime have imposed costs and obstacles that have induced Indian leaders to constrain their capabilities.

U.S. reluctance to pursue nuclear disarmament seriously has imposed an additional political and strategic handicap on nonproliferation policy toward India. To be sure, U.S. officials and strategists argue plausibly that India has used inadequate disarmament progress as a pretext for its own weapons program. In this American view, the nuclear postures and policies of the United States and the other declared nuclear weapon states have no real security bearing on India's policies and are therefore irrelevant to the unproliferation problem. However, even if this were true, the argument misses the fundamental point: decisions to stop or roll back a nuclear weapon program are profoundly political, especially in a democracy. Even if the five declared nuclear weapon states pose no genuine security threats affecting India's nuclear policy—including China, whose nuclear posture is linked to those of Russia and America—strong political links connect the five to India. Political parties in democracies, especially ambitious postcolonial democracies like India, will insist that their governments seek equity in international relations. The equity imperative applied to nuclear policy has meant that India would not stop or abandon its nuclear weapon and missile programs without concomitant nuclear disarmament by the five “major” powers. American policymakers and analysts thinking and acting within a *security-first narrative* have failed to appreciate that India and other states have seen nuclear policies primarily through a *political narrative*. The Indian experience suggests that the United States and the other four nuclear “haves” cannot indefinitely keep other states from acquiring nuclear

weapons unless the five reverse course and dedicate themselves to creating the conditions for the elimination of nuclear weapons. The contrary view constitutes one of the illusions that India has exploded, as discussed more fully in the concluding chapter.

INSTITUTIONAL FRAMEWORK OF INDIAN NUCLEAR POLICYMAKING

India's governance of nuclear policy has been one of the most remarkable features of the history recorded here. Before proceeding to the livelier narrative, it is useful to set the stage by laying out the structure of Indian policymaking. Indian nuclear policymaking has been highly personalized and concentrated in a handful of political leaders and scientists. While many of the state's activities have been secret, the issue of whether to build, test, and deploy a nuclear arsenal has been debated more openly and longer than in any other nation. This debate has also featured unusual attention to moral and international political norms.

Constitutionally, the president of India, as Head of State, serves as "Supreme Commander" of the armed forces. However, the preponderance of power in India resides with the prime minister, who is elected by peers in the lower house of the Parliament, the Lok Sabha. The prime minister has, by tradition, always held the position of cabinet minister responsible for science and technology, which includes the Departments of Atomic Energy and Space (the latter was created in 1972). In the prime minister's capacity as minister of the Department of Atomic Energy, he or she has worked closely with the department's senior scientist/technologist, who serves as chairman of the Atomic Energy Commission. Successive chairmen have exerted extraordinary influence over India's nuclear activities and policies. Indeed, there are no means within India's institutional structure to provide independent scientifically expert checks and balances on the nuclear and defense establishments.

Within the government a Cabinet Committee on Political Affairs has formed the highest decision-making group, although in 1998 the government set out to create a National Security Council, which would assume an important role in this area. In addition to the prime minister, the Cabinet Committee traditionally consists of the ministers for external affairs, defense, home affairs, and finance, and, serving as secretary but not a member, the cabinet secretary. This body thus represents the most important bureaucracies involved in Indian nuclear policy. However, prime ministers have formulated policies without consulting the Cabinet Committee, as this study records in key instances.

The Ministry of External Affairs traditionally has not been involved in decisions regarding the development and testing of nuclear (and missile) technologies, but it has played a key role in formulating India's positions on arms control and nonproliferation matters. The Ministry of Defence also has commonly had little

influence on major nuclear policy decisions. However, among other functions, it oversees the military services (army, navy, and air force) and the Defence Research and Development Organisation (DRDO). The director general of the DRDO has always been a scientist or engineer who serves as scientific adviser to the defense minister. Beginning in 1982, the DRDO head joined the Atomic Energy Commission chairman as a major shaper of nuclear weapon and ballistic missile policies and programs. The Finance Ministry manages the state budget and evaluates the affordability of programs proposed by the Atomic Energy Commission and the DRDO. Representatives of the Finance Ministry serve as secretaries to the Atomic Energy Commission and the Ministry of Defence.

The Parliament, or legislative branch of the Indian governmental system, has little formal power to affect nuclear policy beyond its roles in questioning government ministers and overseeing financial accounts.

The minimal role of the military in Indian nuclear policy deserves special notice. The founders of independent India, influenced by the British legacy, decided from the beginning to separate the military from national security decision making.¹³ India's early leaders feared the potential of military coups, as have been common in developing countries. These leaders also sought to prevent military forces from demanding and receiving heavy budget allocations. Thus, the military played no role in the early nuclear program, neither advocating nor seeking to influence it, but instead honorably and completely subordinated itself to civil control.¹⁴ As the eminent scholar Stephen P. Cohen concluded in his seminal 1971 study of the Indian Army, "India has no single department or institution adequately equipped, either intellectually or politically, to make decisions or even to study such an important issue as nuclear weapons procurement."¹⁵ As India heads into the twenty-first century, the role of the military in nuclear policy stands as a major issue for the government to resolve.

THEORETICAL AND HISTORICAL LITERATURE

Few theories of nuclear proliferation have been formally elaborated. Whereas numerous theoretical treatments exist of U.S.-Soviet nuclear interactions and of nuclear doctrine generally, the separate questions of why, when, and how states will seek nuclear weapons have been left relatively unaddressed in theoretical terms.¹⁶ More typically, writers and policymakers extrapolate from the general insights of Realist theory to answer these questions about nuclear policy "behavior."

If there are few theories of nuclear proliferation, there are numerous case studies of nuclear weapon programs. Many of these describe the development of nuclear weapons by the United States, the Soviet Union, the United Kingdom, France, and China prior to the formation of the nonproliferation regime.¹⁷ Other studies describe the quest for nuclear weapon capability in Israel,¹⁸ South Africa,¹⁹ Pakistan,²⁰ Brazil, and Argentina.²¹ Several volumes include collected studies of these and other nuclear proliferation cases.²²

While a few significant studies have been conducted on the Indian nuclear program, the literature lacks a detailed enough picture to show confidently why and how India's nuclear policies and practices evolved the way they did. Two of the best volumes on the Indian nuclear program, Ashok Kapur's *India's Nuclear Option* and Shyam Bhatia's *India's Nuclear Bomb*, lack post-1974 data from interviews, declassified U.S. documents, and outside analysts that would have filled in important gaps and provided more insight into the major decision to conduct the test in 1974.²³ In 1993, the Indian scholar Brahma Chellaney produced an impressive volume on the Indian-American conflict over nuclear proliferation, but he concentrated on the period after the 1974 nuclear test and mistakenly accepted the inadequate extant versions of the program's early history.²⁴ In late 1998, Itty Abraham published a trenchant study of the early years of India's nuclear program that deserves notice.²⁵ Several other volumes and long articles have contributed importantly but not fully to the record.²⁶ The best among them have concentrated more on analyzing or defending the Indian program's motivations and achievements than on describing factually how it evolved.²⁷

The absence of an adequately detailed narrative of the Indian nuclear program's evolution has consequences. It has impaired the Indian polity's capacity to debate with adequate knowledge what has been done in the nuclear field, by whom, for what reasons, and at what costs. It has contributed to the failure of American and other international policymakers and analysts to understand India's thinking and acting and to identify more positive methods for interacting with India. In terms of scholarship, the inadequate historical literature has allowed the emergence of distorted or excessively narrow international relations theories regarding state behavior in the nuclear field.

LIMITS AND METHODOLOGY

India is an extremely important case to examine. The nation's size, potential, standing in the international system, democratic system of governance, place in the Sino-Pakistani-Indian security triangle, moral traditions, and other features give it exceptional academic and practical import. Its experiences can illuminate nuclear policy dynamics in other states. At the same time, India is a unique case in the nuclear proliferation field. Thus, an understanding of the Indian case may be only partially transferable to other cases. This itself suggests an important theoretical and policy lesson: each case is different in vital ways. General theories of state behavior in an anarchic international system or of nuclear proliferation may ultimately confuse as much as they illuminate.

The singularity of the Indian case removes some of the burden of treating the Pakistani case in the same volume. Often the two nations and their nuclear programs are joined like Siamese twins in scholarly publications and governmental bureaus. This is natural given the history and the clear interactive effects each has on the other. To understand the Indian nuclear program and the polity's attach-

ment to it, Pakistan must be taken into view. However, India's nuclear program began decades before any nuclear threat emerged from Pakistan. Moreover, in causative terms, the Indian case differs in important ways from Pakistan's. Unlike India, Pakistan's quest for nuclear weapon capability derives unambiguously from security concerns. Fear of Indian military power and consequent political pressure explains why Pakistan sought nuclear weapons capability. The same cannot be said for India: fear of China's, or later Pakistan's, military power does not fully explain India's nuclear program. So, too, the opportunities for and likely dynamics of inducing Pakistan to abandon its nuclear program differ from those involved with India. Thus, it is appropriate to treat the two cases separately.

Obtaining accurate, official data on the Indian nuclear program and decision making around it is difficult. India maintains a system of extreme secrecy over nuclear matters. A legacy of the British Official Secrets Act, Indian law bars official files from being declassified and imposes strict lifelong penalties on "leakers." The Atomic Energy Act entitles the Central Government of India to "declare as 'restricted information'" basically anything it wants having to do with atomic energy and related activities.²⁸ As a result, little but the most anodyne information on the nuclear establishment has been publicly released. Files simply are not declassified or otherwise made available for scholarly investigation. Even if files were accessible, Indian nuclear policy has tended to be made orally and rather informally. Decisions are recorded in official files, but the analysis, debate, and motivations behind them tend not to be included.²⁹ This forces analysts to rely on public sources such as the press, biographies, secondary treatments that may be informed by inside knowledge, and, importantly, interviews with relevant officials. Declassified U.S. government documents also can be very insightful. All of these sources inform the current study, which has also benefited enormously from the corrections, criticisms, and comments of knowledgeable Indian readers.

Another caveat concerns China. To the extent that security threats have motivated India's nuclear policy, China and Pakistan loom largest. While this study questions the degree to which security considerations actually have caused Indian nuclear decisions, China undoubtedly has constituted an important factor. (Pakistan became a more acute concern in the mid-1970s when it began to seek nuclear weapons to counter India's capability.) An exhaustive examination of the Indian nuclear program, therefore, ideally would provide a detailed description of China's political-military capabilities and intentions toward India. Such a thorough analysis of the Chinese factor would augment an evaluation of the objective, as opposed to subjective, validity of Indian assumptions about China. While it is beyond the scope of this study to include a detailed analysis of Chinese actions and policies toward India, the narrative does report important developments in Sino-Indian relations. Still, the focus remains on the arguments Indian actors made regarding the nature of the Chinese threat and India's means for redressing it.