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Correspondence

Secrecy, Civil-Military Relations, and India's Nuclear Weapons Program

Anit Mukherjee
George Perkovich
Gaurav Kampani

To the Editors (Anit Mukherjee writes):

Gaurav Kampani provides a compelling account of the evolution of India's nuclear weapons program from 1989 to 1999 and rightly highlights how the need for secrecy "stymied India's operational advances."¹ "Secrecy concerns," he argues, "prevented decisionmakers and policy planners from decomposing problem sets and parceling them out simultaneously for resolution to multiple bureaucratic actors, including the military" (p. 82). In his eagerness to argue this point, however, Kampani is too quick to dismiss other explanations for India's slow pace of operationalization. In this letter, I argue that a more complete account of "New Delhi's long nuclear journey" should incorporate civil-military relations as another influential factor.

CIVIL-MILITARY RELATIONS AND INDIA'S NUCLEAR BOMB

Most accounts of India's nuclear weapons program agree that India's political establishment largely excluded the military from shaping the program's pace, direction, and progress. According to Verghese Koithara, "[K]eeping the military at arm's length and sidelining military competencies the way India has done has no parallel in global nuclear weapons development history."² He attributes this situation to the "barren relationship that developed between the political leadership and the armed forces of the country soon after independence."³ Ashley Tellis blames India's nonoperationalization of nuclear weapons on its "peculiar organization of civil-military relations."⁴ Raj Chengappa claims that "despite the Indian Army providing all the logistics sup-

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1. Gaurav Kampani, "New Delhi's Long Nuclear Journey: How Secrecy and Institutional Roadblocks Delayed India's Weaponization," *International Security*, Vol. 38, No. 4 (Spring 2014), pp. 79–114, at p. 81. Further references to this article appear parenthetically in the text.
 2. Verghese Koithara, *Managing India's Nuclear Forces* (New Delhi: Routledge, 2012), p. 91.
 3. *Ibid.*, p. 1.
 4. See Ashley J. Tellis, *India's Emerging Nuclear Posture: Between Recessed Deterrent and Ready Arsenal* (Santa Monica, Calif.: RAND Corporation, 2001), p. 282. See also George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (New Delhi: Oxford University Press, 1999), p. 450.

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port [for both of India's nuclear tests] . . . it was rarely privy to India's nuclear secrets. . . . All this was part of a deliberate design by successive governments to rein in the armed forces."⁵ More recently, Vipin Narang has written that "a distrust of India's armed forces . . . [produced] a civil-military relationship in which India's political leadership is patently unwilling to entrust any dedicated nuclear subcomponents to the armed forces."⁶ Kampani presents little concrete evidence to undermine these views.

Kampani makes four points to support his contention that "the distrust that pervades India's civil-military institutions" was not a factor in the development of India's nuclear weapons program (p. 108). None supports his claim.

First, Kampani asserts that "[i]f civil-military institutional tensions were the cause [of India's slow nuclear operationalization], . . . one would [have] see[n] greater aggregation of information among civilians" (ibid.). He does not explain, however, what he means by a "greater aggregation of information among civilians." What kind of information and about what? The nuclear weapons program, delivery options, nuclear targeting philosophy? If he means all of these, then there was a designated civilian official who possessed this "aggregated" knowledge: the scientific adviser to the defense minister. In the period under discussion, two individuals held this post—V.S. Arunachalam from 1982 to 1992 and Abdul Kalam from 1992 to 1999. Another key official was former Defense Secretary Naresh Chandra, who, as Kampani notes, was brought in as a "specially designated coordinator" (p. 89). In addition, members of the scientific-technocratic enclave such as K. Santhanam and R. Chidambaram would have had information far in excess of that of any member of the military.⁷ Still, one can argue that none of these officials would have had "aggregated information" if the military aspects of the nuclear weapons program were included—that is, the operational details and capabilities of designated aircraft and delivery options, the military's standard operating procedures, and so on. But the argument would then be tautological: if the military was deliberately kept "at the margins," as Kampani states, then how could civilian officials stay informed about its capabilities (p. 94)? Such an arrangement would have structurally prevented the "greater aggregation of information" among civilians, as predicted by the author.

Second, Kampani quotes an unnamed senior Indian defense official who justified keeping the military out the loop "because of the danger of secrecy being compromised." The official added, "[T]he military's complaints have more to [do] with a sense of privilege and pride. Why should they be told? The cabinet ministers weren't told, the defense minister, their political boss was not told. So why should the armed services chiefs be told" (ibid.)? Kampani's use of this quote as evidence of a lack of civil-military distrust is problematic on several counts. To begin, it contradicts his earlier assertion that "the regime of information scarcity operated with nearly equal severity

5. See Raj Chengappa, *Weapons of Peace: The Secret Story of India's Quest to Be a Nuclear Power* (New Delhi: HarperCollins, 2000), p. 14.

6. See Vipin Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict* (Princeton, N.J.: Princeton University Press, 2014), p. 119; see also pp. 113–116.

7. For more on the involvement of both individuals in the nuclear program, see Chengappa, *Weapons of Peace*.

on both the civilian and military sides of the nuclear equation" (ibid.). Information scarcity, however, could not have been of "nearly equal severity" if, according to this interviewee, a deliberate decision had been made to keep the military away from the program. More important, Kampani accepts uncritically what he was being told. If he had challenged the logic of the interviewee, he would have found several inconsistencies. For instance, if one were to analyze the period from the time the decision for nuclearization was made—Kampani argues it was in 1989–90—to the 1998 nuclear tests, the prime minister also held the defense minister's portfolio for more than half that duration.⁸ It is inconceivable that information about the nuclear weapons program was withheld from such a senior official. Moreover, according to some accounts, knowledge about the nuclear program was shared with India's two defense ministers—Sharad Pawar and Mulayam Singh Yadav—who held this post for a considerable period during this time.⁹ Additionally, if the logic offered by the interviewee is correct, then no secret—on any subject—should ever be shared with the military. Perhaps the biggest inconsistency, however, is how the interviewee could justify keeping the military uninformed when it was responsible for delivering India's nuclear weapons.

Third, Kampani argues that civil-military distrust would have manifested itself in other ways, citing examples where this seemingly has not occurred. He argues that two facts—that the military enjoys considerable autonomy in formulating India's conventional war plans and that it engages extensively in countering domestic insurgencies—reflect civilian trust in the institution. This is a spurious argument, because neither observation necessarily suggests a lack of civil-military distrust. As is well known, the predominant narrative emerging from the 1962 Sino-Indian War blamed the collapse of the Indian army on ill-informed civilian intervention. Since then, India's civil-military relationship has been "informed by the notion that civilians should eschew involvement in operational matters."¹⁰ That the military enjoys considerable autonomy in formulating conventional war plans should therefore not be surprising, because this function is considered to be within the military's "domain."¹¹ In this context, the military also enjoys considerable autonomy in other fields, including specifying weapons systems, doctrine, training, defense planning, and service promotions (up to the rank of brigadier).

Similarly, the military's extensive involvement in counterinsurgency operations

8. From 1989 to 1998, Prime Ministers V.P. Singh, Chandra Shekhar, and P.V. Narasimha Rao cumulatively held the defense minister's portfolio for a total of four years and eight months.

9. Yadav and Pawar held the defense minister's post for a cumulative total of three years and six months. For an argument that Yadav knew about the program, see Perkovich, *India's Nuclear Bomb*, pp. 400–401. For more on the possibility that Pawar was also informed, see K. Subrahmanyam, "Indian Nuclear Policy—1964–98 (a Personal Recollection)," in Jasjit Singh, ed., *Nuclear India* (New Delhi: Knowledge World, 1998), p. 49.

10. See Srinath Raghavan, "Civil-Military Relations in India: The China Crisis and After," *Journal of Strategic Studies*, Vol. 32, No. 1 (February 2009), p. 172.

11. For further discussion of domains, see Anit Mukherjee, "Civil-Military Relations and Military Effectiveness in India," in Rajesh Basrur, Ajaya Kumar Das, and Manjeet Singh Pardesi, eds., *India's Military Modernization: Challenges and Prospects* (New Delhi: Oxford University Press, 2013), pp. 196–229.

does not necessarily suggest harmonious civil-military relations. Instead, India's civilian and military leaders have agreed to an arrangement wherein the military enjoys considerable legal immunity when engaged in counterinsurgency operations. Tellingly, civil-military tensions have escalated when civilians have tried to alter this arrangement—for instance, when trying to amend or even overturn the controversial Armed Forces Special Powers Act, which provides legal immunity to the military.¹² Rightly or wrongly, however, nuclear weapons were not considered to be in the military's domain, and hence civilians were able to keep the military away from the program.

Kampani's assertion that there is no civil-military distrust in India not only challenges the conventional wisdom but does not comport with contemporary events. India's problem is not a possible loss of civilian control but problematic civil-military relations, a constant theme in the literature.¹³ Tensions between civilians and the military were even acknowledged in two official committee reports written in the aftermath of the 1999 Kargil war.¹⁴ Most recently, the controversial tenure of Chief of Army Staff Gen. V.K. Singh "saw civil-military relations reach their lowest ever in the history of independent India."¹⁵

Fourth, Kampani argues that "India's civilian leaders have shown little hesitation in institutionalizing the military's role in nuclear planning post-1998. . . . This change has occurred without any fundamental rewrite in the DNA of India's civil-military relations" (p. 109). Kampani's claim oversimplifies a complex civil-military dynamic surrounding the development of India's nuclear arsenal. Moreover, it contradicts the available evidence. To be sure, the government established the Strategic Forces Command in 2003 to administer all of India's nuclear and strategic forces, and it has given the military unprecedented access to nuclear weapons. At the same time, civil-military integration has not been as smooth as Kampani would have us believe. According to one school of thought, most prominently associated with Verghese Koithara, civilians have resisted incorporating the military fully into the nuclear command and control chain.¹⁶ Supporters of this claim point to the fact that the "operational controller" of the Strategic Forces Command is not a military officer but the

12. See Sanjay Hazarika, "An Abomination Called AFSPA," *Hindu*, February 12, 2013.

13. See Brijesh D. Jayal, "Civil-Military Relations: Heed the Timely Message," *Telegraph*, January 25, 2014; Kanti Bajpai, "Be Civil with the Military," *Times of India*, March 6, 2010; and Stephen P. Cohen and Sunil Dasgupta, *Arming without Aiming: India's Military Modernization* (Washington, D.C.: Brookings Institution Press, 2010), pp. 39–46.

14. See Kargil Review Committee, *From Surprise to Reckoning: The Kargil Review Committee Report* (New Delhi: Sage, 1999), pp. 258–259; and Group of Ministers on National Security, "Chapter VI: Management of Defence," *Reforming the National Security System: Report of the Group of Ministers on National Security* (New Delhi: Government of India, 2001), p. 97.

15. See Brijesh D. Jayal, "Political Football: The Armed Forces and the Change of Government," *Telegraph*, May 30, 2014. See also Adm. Arun Prakash, "Civil-Military Dissonance: The Bane of India's National Security," Vol. 10, No. 1 *Maritime Affairs* (Summer 2014), pp. 1–19; and Anit Mukherjee, "Civil-Military Relations in Crisis," *India in Transition* (Philadelphia: Center for the Advanced Study of India, University of Pennsylvania, September 2012).

16. See Koithara, *Managing India's Nuclear Forces*. See also Manpreet Sethi, *Nuclear Strategy: India's March towards Credible Deterrence* (New Delhi: Knowledge World, 2009), pp. 162–171.

national security adviser.¹⁷ Elsewhere, Kampani notes this strange arrangement, observing that the Strategic Forces Command essentially functions “directly under the Prime Minister’s Office through the national security advisor, bypassing the defense ministry and the military’s normal chain of command.”¹⁸ Adm. Arun Prakash, chief of India’s naval staff from 2004 to 2006, complained about the “complete exclusion of the armed forces from all aspects of planning and structuring of strategic programmes.”¹⁹

In a rare speech on nuclear deterrence on April 24, 2013, however, former Foreign Secretary Shyam Sharan dismissed the “perception that India’s armed forces are not fully part of the strategic decision-making process.” He curiously added, however, that “one cannot accept that the credibility of India’s nuclear deterrence demands management by its military.” Although his definition of “management” is unclear, later in the speech he acknowledged the need to “encourage better civil-military relations and coordination.” He went on to say that “the military’s inputs into strategic planning and execution should be enhanced to make India’s nuclear deterrent more effective.”²⁰ Writing a few months after Saran’s speech, former Army Chief Gen. V.P. Malik argued that “weaknesses” existed because the military “is not consulted adequately or given political directions and resources . . . for an assured and effective operationalization of nuclear capability.”²¹ According to a former chairman of the Chiefs of Staff Committee (COSC), who wishes to remain unnamed: “[A]lthough the strategic target list is decided by the COSC, the Chairman is never consulted about vital issues relating to the effectiveness of the deterrent. For example: missile ranges and CEP [circular error probable] of nuclear warhead yields and reliability or development of PALs. . . . [A]ll these are decided ‘in-house’ by DAE & DRDO scientists. . . . [T]he ‘user’ [i.e., the military] is well out of the loop.”²²

INDIA’S NUCLEAR BOMB: A POLITICAL-SCIENTIFIC ENDEAVOR

India stands as an outlier for the manner in which it kept its military away from its nuclear weapons program. According to an unnamed former chairman of the Indian Atomic Energy Commission, “[T]he Indian program never took the army into [its] confidence. We didn’t discuss details with them. It wasn’t a military program.”²³ Moreover, the scientists wanted to prevent an “untoward build-up of the deterrent and its use, which they believed would accrue were the military to be brought into the decision-

17. See Koithara, *Managing India’s Nuclear Forces*, p. 190.

18. See Gaurav Kampani, “India: The Challenges of Nuclear Operationalization and Strategic Stability,” in Ashley J. Tellis, Abraham M. Denmark, and Travis Tanner, eds., *Strategic Asia 2013–14: Asia in the Second Nuclear Age* (Seattle, Wash.: National Bureau of Asian Research, 2013), p. 120.

19. See Arun Prakash, *India’s Nuclear Deterrent: The More Things Change. . .*, RSIS Policy Report (Singapore: S. Rajaratnam School of International Studies, Nanyang Technological University, March 2014), p. 2.

20. See Shyam Saran, “India’s Nuclear Weapons Not for National Pride,” *Tribune*, May 9, 2013.

21. V.P. Malik, *India’s Military Conflicts and Diplomacy: An Inside View of Decision Making* (New Delhi: HarperCollins, 2013), p. 93.

22. Email to author, June 22, 2014. This officer held the post of chairman well after the 1998 tests. PAL stands for permissive action links, which enable the arming of nuclear devices; DAE stands for the Department of Atomic Energy; and DRDO stands for the Defense Research and Development Organisation.

23. Cited in Perkovich, *India’s Nuclear Bomb*, p. 178.

making and weapon handling loop.”²⁴ Although the custodians of the nuclear program—scientists, technocrats, and selected bureaucrats—may have held such seemingly noble beliefs, it can also be argued that they were afraid that bringing the military into the loop might curtail their near-total operational autonomy.²⁵ Indeed, one of the fears of the scientific-technocratic community that controlled the program was that the military might make a bid for greater involvement, ownership, and perhaps even control.²⁶ An episode from early 1998 illustrates this point. In a meeting with Prime Minister I.K. Gujral, General Malik reported that the service chiefs jointly conveyed the need for a nuclear doctrine. Abdul Kalam, then scientific adviser to the defense minister, who was present at the meeting, claimed that there was one but that it was not to be shared with the armed forces. Expressing his incredulity, General Malik claims that this was part of “a nexus that kept the armed forces away from the nuclear weapons program.”²⁷

When talking about a civil-military gap in India's nuclear program, the custodians of the bomb will of course deny that one existed and will justify exclusion of the military from the program on the grounds of secrecy (as they did in interviews with Kampani). The civil-military divide would have been evident, however, if the author had focused on the decisionmakers at the time. Hence, on a number of occasions Kampani alleges failure on the part of Indian defense and policy “planners” (see p. 82, 88, 92, 99, and 100). But who were these “planners?” As far as we know, they were mostly scientists, technocrats, and a few select bureaucrats, such as Naresh Chandra. They did not include any military representatives.

CONCLUSION

The main problem with Kampani's otherwise excellent article is his rejection of alternative explanations for the slow pace of India's nuclear program. Civil-military relations and the decision to keep the military on the margins played an important role in the program's delayed operationalization. One could similarly argue that the military was excluded because nuclear weapons were not considered weapons of war. Or perhaps the strategic culture argument explains the failure of Indian politicians to oversee the coordination of the scientific and military aspects of the program. To be fair, the need to maintain secrecy could still be the primary factor explaining this slow pace, but it was not the only one.

—Anit Mukherjee
Singapore

24. Bharat Karnad, *Nuclear Weapons and Indian Security: The Realist Foundations of Strategy* (New Delhi: Macmillan, 2005), p. 328.

25. For a discussion of the autonomy of India's scientists in deciding “the nuts and bolts of the policy line on nuclear weapons,” see Karnad, *Nuclear Weapons and Indian Security*, pp. 321–322. The disadvantage of giving the scientists such autonomy became apparent when a major controversy erupted over the success of India's thermonuclear bomb. See Brijesh D. Jayal, “A Bang and a Fizzle,” *Telegraph*, September 14, 2009.

26. This fear was expressed to the author by a senior DRDO scientist closely involved with the 1998 Pokhran II test. Author interview, New Delhi, June 27, 2013.

27. Author interview, New Delhi, July 1, 2013.

To the Editors (George Perkovich writes):

Kudos to Gaurav Kampani for his deeply researched narration of the “excruciatingly long” course India has taken “to develop an operational nuclear capability.”¹ “New Delhi’s Long Nuclear Journey” corrects some mistaken details of earlier treatments of this history, including my own in *India’s Nuclear Bomb*.² Anyone wanting details on the material and institutional evolution of India’s nuclear capabilities should value Kampani’s contribution.

The article is less persuasive in explaining the history it uncovers. The central flaw is Kampani’s attempt to ascribe India’s nuclear muddling to one factor—secrecy born of “fear of the nonproliferation regime” (p. 81). Here one perceives the tyranny of academic theorizing and its diktat of “parsimony,” which an aspiring academic political scientist dare not reject. The problem is twofold: no single driver can explain most of the Indian nuclear story; second, secrecy is an effect of other causes, and therefore a weak cornerstone for a compelling theory of how the nonproliferation regime affected India’s (or anyone else’s?) development of operational nuclear forces.

Kampani duly explores other candidate causes of India’s irresolute nuclear course: “the normative beliefs of decisionmakers who pitted their moral aversion of nuclear weapons against more prosaic realist national security concerns”; decisionmaker preferences for “existential deterrence out of normative concerns for strategic stability in South Asia”; “a unique Indian strategic culture of restraint”; and “the dysfunctional nature of Indian civil-military institutions” (pp. 82–83). He offers evidence of Indian actions that can be interpreted to conclude that each alternative fails to explain key developments in India.

Yet, the failure of any of these single explanations to cover all or most of the relevant developments in a decade of nuclear history does not mean that their sum is invalid or without utility. In fact, the four explanations that Kampani considers do help significantly to illuminate India’s nuclear history from 1989 to 1999. The quest for a single decisive independent variable is unnecessary and misleading.

Secrecy’s inadequacy as a central causal explanation in the Indian case is evident in several ways. Most important, one needs to understand why India’s nuclear capabilities and decisionmaking have been so secretive. Kampani cites Indian officials who said that secrecy stemmed primarily from fear of “the prying eyes of the United States,” though he says it is also “entirely plausible” that China and Pakistan have been factors (p. 110). Secrecy against foreign adversaries makes sense, of course. Yet, do officials in a democracy ever publicly admit to any other reasons for secrecy? If national defense is the reason for secrecy, but the effect of secrecy is to radically impair national defense, decisionmakers should not find it too difficult to create more transparency. One wishes Kampani had probed deeper into domestic reasons why Indian political leaders have tolerated (or preferred) nuclear-related secrecy for so long.

1. Gaurav Kampani, “New Delhi’s Long Nuclear Journey: How Secrecy and Institutional Roadblocks Delayed India’s Weaponization,” *International Security*, Vol. 38, No. 4 (Spring 2014), pp. 79–114. Subsequent citations to this article appear parenthetically in the text.

2. George Perkovich, *India’s Nuclear Bomb: The Impact on Global Proliferation*, updated ed. (Berkeley: University of California, 2001).

Kampani notes that three prime ministers in the 1990s were “disinterested” in India’s nuclear matters (p. 100). (The same could have been said for several earlier prime ministers, too.) He also reports that “even after Indian scientists and engineers solved the technical challenges of delivery, political leaders refrained from embedding the weapons within organizational and procedural routines that would render them operational in the military sense of the term” (p. 81). Something more than an interest in secrecy to keep foreign adversaries in the dark motivated these leaders’ inattention to the nuclear weapon program. My research and that of others shows that these prime ministers were morally, politically, and strategically ambivalent about the utility and implications of nuclear weapons for India. Operationalizing nuclear weapons was just not that important among the many other political, economic, and internal security priorities India needed to pursue.³ In particular, much of the secrecy and compartmentalization in the Indian program prevented the military from being able to scrutinize and press the civilian weapons establishment and the political leadership. This emphasis on secrecy reflected the broader view among Indian political and technical elites that involving the military, with its interests and logic, in Indian nuclear policy would lead to exaggeration of the utility of nuclear weapons and pressure to embark on costly weaponization programs, as occurred in the United States and the Soviet Union.

Kampani’s theory is further damaged by the fact that the operationalization of India’s nuclear weapons capability shares many dysfunctions found in the country’s overall defense policy and in the civilian nuclear sector. The failings in all of these sectors reflect bureaucratic and political penchants, including those of the mandarins at the top of the defense and nuclear establishments. These men have preferred secrecy and compartmentalization to spare themselves and their departments from scrutiny within India, just as India’s nuclear weapons scientists and technologists long sought to exclude the military from involvement in their domains.

Finally, the dysfunction that Kampani impressively records has not really been a secret. Indian leaders have been privy to at least four high-level committees or commissions tasked with, among other things, evaluating India’s nuclear policies, doctrines, capabilities, and operationalization. Prime Minister V.P. Singh in 1990 commissioned one involving K. Subrahmanyam, Gen. K. Sundarji, and Arun Singh. Then, in 1999 came the Kargil Review Committee, headed by K. Subrahmanyam, whose report was followed by the Arun Singh Task Force on Defense Management’s report in September 2000. The Naresh Chandra Committee on national security submitted a similar report in 2012. The principals involved in preparing each of these reports were thoroughly networked in the highest New Delhi policy circles. They all urged similar initiatives to improve India’s defense preparedness, including in the nuclear domain. Yet, no prime minister has exerted himself to implement the central recommendations of these committees. For example, the Kargil Review and the 2000 Singh report both recommended creation of an integrated defense staff whose chief would then have a major role in nuclear force planning and operations. Fourteen years later, however, conflicts

3. Vergheese Koithara, *Managing India's Nuclear Forces* (Washington, D.C.: Brookings Institution Press, 2012).

among the armed forces and indecision among political leaders have left this position still rather inconsequential.

In sum, the problems that Kampani so effectively describes preceded and succeeded the 1989 to 1999 period he addresses. Their causes are deeper and more varied than any parsimonious theory can explain. Still, they can be understood, as Kampani's historical narrative helps to do.

—George Perkovich
Washington, D.C.

Gaurav Kampani Replies:

George Perkovich's and Anit Mukherjee's rejection of my thesis that secrecy was the cause of India's slow nuclear operationalization in the 1990s because it prevented successive Indian governments from coordinating a coherent institutional response within the state has given me pause for thought.¹ Yet, after reading their alternative explanations and examining them against the light of the available evidence, I find their claims unpersuasive.

Perkovich begins his critique with the unverified claim that my scholarship is a victim of the "tyranny of academic theorizing" and the "diktat of parsimony" that an aspiring political scientist dare not oppose. One could similarly accuse historians of imposing coherence on data when there is none. He continues with the flawed premise that I identify secrecy as the independent variable in my thesis. I maintain that secrecy was an intervening variable and attribute its cause in India's case in the 1990s to pressure from the nonproliferation regime's lead enforcer, the United States, not the nonproliferation regime per se as Perkovich reads my argument. He mischaracterizes my argument on both counts.

In his pursuit of a multicausal explanation for India's slow pace of weaponization and lack of operational planning in the 1990s (Indian political leaders' moral imperatives, their belief in "existential" deterrence, India's culture of strategic restraint, and the Indian polity's cumulative domestic constraints), Perkovich asserts that although each of the alternative explanations I dismiss might not adequately explain India's policy, their sum is greater than their parts. The problem, however, is that each of these explanations melts under the slightest heat of scrutiny, which renders their bonding into a cohesive explanation difficult.

Simply put, leaders bound by moral imperatives do not order weaponization. An elite consensus around "existential" deterrence does not morph into "minimal" deterrence overnight and notions of "limited" deterrence within a decade thereafter. Strategic cultures are sticky, not vaporous. Perkovich's attribution of India's alleged pursuit of "existential deterrence" to its desire for strategic stability with Pakistan excises the

1. Gaurav Kampani, "New Delhi's Long Nuclear Journal: How Secrecy and Institutional Roadblocks Delayed India's Weaponization," *International Security*, Vol. 38, No. 4 (Spring 2014), pp. 79–114.

China factor in India's nuclear equation. If existential deterrence and strategic stability were indeed the sources of India's nuclear self-restraint in the 1990s, then Indian leaders could have formally institutionalized that understanding with Pakistan prior to 1998 or in the years immediately after the nuclear tests. Indian leaders, however, did not choose this course. More important, the domestic impediments in India's path to achieving nuclear status have remained constants since the 1960s. Those impediments did not prevent India from testing a nuclear device in 1974, but the U.S.-led international attempts to corral India's nuclear capabilities in the two decades thereafter and U.S. threats to exacerbate India's structural economic and technical dilemmas were crucial in reining in New Delhi's nuclear ambitions at several critical junctures. Nobody, least of all Perkovich, who has surveyed this history in detail, can deny this fact. Indeed, one of the major outcomes of India's 1998 nuclear tests was the opening of a strategic dialogue with the United States to negotiate those impediments away.

My research findings have eroded Perkovich's central claim, first made in the early 1990s, that India's "restraint" resulted from the moral, strategic, and political ambivalence of its political leaders.² My counterargument is that India was not restrained. It was just slow. India tried to develop a reliable operational deterrent in the 1990s as quickly as it could, but excessive secrecy stemming from fears of the United States' negative reaction retarded that effort. From 1989 until 1995, India lacked the capacity to deliver nuclear weapons safely and reliably. During this time, Indian defense research and development agencies furiously sought to make up for this lacuna, which hardly makes Indian surface restraint the stuff of moral ambivalence. Successive prime ministers left India's nuclear policy on autopilot, because they could do little until a technical capability became available.

Thereafter, from 1995 until 1998, they procrastinated on authorizing operational routines given the tough policy choices involved, particularly the looming confrontation with the United States. Their apathy stemmed from the fear that U.S. sanctions would disrupt India's economic liberalization and recovery. India's nuclear operationalization program therefore became the victim of a "hide and bide time" strategy. The excessive secrecy surrounding it led to the compartmentalization of information. The latter, in turn, produced knowledge asymmetries between the scientists and the air force personnel on the one hand, who understood the challenges of operationalization and favored it, and their political overlords on the other, who were generally ignorant of operational minutiae and preferred the status quo. This is a classic example of a principal-agent problem. Scholars like to imagine that heroic leaders make decisions concerning high politics with sophisticated motives to guide them. History, however, is replete with prosaic examples of high politics decided by simpler motives.

Did Indian prime ministers avoid ordering the development of soft operational routines because of concerns that they could possibly lose the nuclear initiative to the military, as Perkovich suggests? Not really. In the 1990s, only parts of the air force, the sole service tasked with nuclear delivery, were privy to India's nuclear secrets. Had the gov-

2. George Perkovich, "A Nuclear Third Way in South Asia," *Foreign Affairs*, No. 91 (Summer 1993), pp. 85-104.

ernment implemented operational planning, the army and navy would have remained excluded from the process. There was thus little reason for the civilians to fear the loss of control over the policy process. The key reason for not going through with the necessary operational planning was to avoid policy documentation and organizational changes that could alert foreign, especially U.S., intelligence agencies of India's crossing of a key threshold. Indeed, sixteen years after India formally claimed nuclear status and undertook significant nuclear expansion with the participation of the military, civilians remain firmly in charge of determining the country's nuclear policy. The consensus among scholars both in India and abroad is that civilian defense scientists remain in the driver's seat of the nuclear weapons program. Thus the data from the last decade and the decade preceding it do not support Perkovich's claims.

Perkovich also makes the related claim that dysfunction is endemic to India's civil defense and nuclear sectors. As such, the dysfunction that pervaded India's nuclear weaponization program in the 1990s was likely part of the same dysfunction that characterized government operations more generally. The problem with this argument is that dysfunction across sectors can have varied causes. Dysfunction can but need not possess a common cause or causes. That said, scholarship on India's civil nuclear program has assiduously catalogued the pernicious effects of secrecy, compartmentalization of information, the lack of institutional scrutiny, and principal-agent problems on efficient outcomes.³

This existing scholarship apart, the best means to verify my explanation is to adopt an experimental approach and compare India's nuclear operationalization practices during the 1990s and the decade thereafter. *Ceteris paribus*, the subsequent variation in the program's pace, its anemia during the 1990s, and its explosive growth in the decade bury the endemic dysfunctionality argument. In this regard, Perkovich's reference to the failure of successive Indian prime ministers to implement the recommendations of three reform committees to appoint a chief of defense staff to provide single-point advice to the government on matters defense and nuclear is irrelevant to the argument at hand.

Like Perkovich, Anit Mukherjee is critical of monocausal explanations for India's slow operationalization, especially whether secrecy alone can carry the weight of explaining the inefficient outcome during this phase of India's nuclear history. But unlike Perkovich's multicausal approach, Mukherjee's monocausal explanation focuses on the allegedly flawed logic of my rejection of India's problematic civil-military relations as a useful supplementary to the secrecy explanation. The problem with Mukherjee's approach, however, is that the posse of scholars he cites (Raj Chengappa, Verghese Koithara, Ashley Tellis, and Vipin Narang) does little to help his argument. Likewise, his counterevidence from the 1990s is weak, and that from the last decade is an example of not seeing the forest for the trees. Above all, he either ignores or misses the "concrete" data that lay at the center my argument and overstates India's civil-military malaise as the cause of its slow nuclear operationalization.

Chengappa makes a passing reference to the Indian army's noninvolvement in the

3. Itty Abraham, *The Making of the Indian Atomic Bomb: Science, Secrecy and the Postcolonial State* (South Asia Books, 1999); A. Parthasarathi, *Technology at the Core: Science and Technology with Indira Gandhi* (New Delhi: Pearson/Longman, 2007), pp. 3–27, 99–134.

weaponization project prior to 1998. This observation is both true and irrelevant, because the air force was the service of choice for managing the technics of nuclear delivery and operations in the 1990s. Koithara's more recent work offers a deductive critique of Indian nuclear policy planning. It draws largely from Western academic literature and is bereft of empirical evidence from the subject of its study. The purpose of Tellis's work, written fifteen years ago, was to chart the future trajectory of India's emerging deterrent. Tellis dutifully prefaces the main body of his argument by reiterating all of the catalogued rationales for India's perceived restraint prior to 1998 without critically evaluating them or testing their interrelationships. Finally, Narang's work concerns how structural and civil-military institutions determine nuclear posture selection among regional nuclear powers.

Mukherjee is critical of my rejection of civil-military tensions as a regulator in the slow pace of Indian nuclear operationalization in the 1990s, but he nitpicks these arguments and presents no countervailing evidence to contest my claims. He is unsure if my interviewee's claim about defense ministers remaining out of the nuclear loop is correct. We can return to this point when he reaches greater surety on this subject. He helpfully points out that Indian prime ministers held the defense portfolio for half of the decade and must have surely known about the nuclear program. I never argue that prime ministers were out of the loop. He finds it absurd that civilians in India would seek to keep the military out of nuclear matters. Indeed, many civilian scientists who closely collaborated with the air force in the weaponization project thought so, too. Yet, they were helpless to coordinate operational planning with their military colleagues absent a green light from the political leadership.

My argument is not that civil-military tensions in India were or are nonexistent. Rather, I argue that civil-military tensions were not sufficiently acute to slow the pace of weaponization and operational planning in the 1990s. For all the dysfunction that pervades civil-military institutions in India, the substantial operational autonomy enjoyed by the military as well as the civilians' lack of hesitation in seeking its assistance in dealing with extensive domestic unrest since India's founding are evidence of a relatively healthy functioning relationship. These facts have an inherent tendency to speak for themselves regardless of claims to the contrary. Mukherjee agrees that civilian authorities have granted the military a substantial role in managing India's nuclear arsenal and planning nuclear operations. His critical point, though, is that the process of civil-military nuclear cooperation is riddled with anomalies that hinder efficient nuclear operations. This is undoubtedly true, and my own writings published elsewhere attest to this. Mukherjee, however, misses the gigantic transformation in India's civil-military institutional development and gets lost in the details of institutional friction. Prior to 1998, for example, many observers had argued that civil-military tensions precluded India from developing an operational nuclear capability.⁴ Instead, the civilians have institutionalized the role of the military in conjunction with civilian defense scientists under the leadership of the national security adviser in the prime minister's office.

In sum, all of the claims made prior to 1998 about structural impediments standing

4. See, for example, George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley: University of California Press, 1999), p. 450.

in the way of India developing an operational capability—moral dilemmas of its political leadership, strategic culture and the lack thereof, domestic constraints, and civil-military tensions—have fallen by the wayside. Secrecy and its negative downstream effects in preventing successive Indian governments from coordinating a coherent institutional response is the best explanation for India's excruciatingly long nuclear journey during the 1990s.

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