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Roundtable Review 15-40

Jayita Sarkar. *Ploughshares and Swords: India's Nuclear Program and the Global Cold War*. Ithaca: Cornell University Press, 2022. ISBN: 9781501765018.

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 Introduction by Nicholas Miller, Dartmouth College

India's nuclear program has been a source of fascination for historians and political scientists for decades. Perhaps more than any other case, there are deep disagreements over what motivated India's nuclear pursuits. For some, India's nuclear program was driven in large part by domestic political concerns.¹ Others emphasize Indian leaders' beliefs about national identity or the desire to bolster the legitimacy of a postcolonial state.² A third group of scholars focus on strategic considerations about how India could best secure itself in the face of Chinese and Pakistani threats.³ Still others emphasize the importance of the international nonproliferation regime in shaping India's nuclear choices.⁴ Then there are integrative accounts that argue interactions of the aforementioned factors are essential to understanding the Indian case.⁵

Interest and debate over India's nuclear program is also driven by peculiar fashion in which it unfolded: the "peaceful nuclear explosives" program that culminated with India's first nuclear test in 1974; the subsequent decision *not* to weaponize and build a nuclear arsenal; the revival of a weapons program in the late 1980s, followed by a period of nuclear opacity that was punctured by India's series of nuclear tests in 1998, which finally established India as an overt nuclear weapons possessor. The non-linear development of the program has bedeviled political scientists in particular, who are often in the business of trying to objectively classify the beginning and conclusion of nuclear weapons programs, a task that has proven elusive in the Indian case.⁶

Understanding the sources of Indian nuclear decisionmaking is not merely an academic concern. India and Pakistan have engaged in a number of dangerous nuclear crises in the last twenty-five years and both are in the process of modernizing their nuclear arsenals. Moreover, insights from Indian nuclear decisionmaking may also hold lessons for how prospective proliferators like Iran and Saudi Arabia will behave given their similar tendency to blur the lines between civilian and military nuclear programs and to seek autonomy in part by diversifying foreign partnerships.

Jayita Sarkar's book, *Ploughshares and Swords*, argues that there is more continuity and coherence to India's nuclear choices than the preceding discussion of the literature might suggest. It contends that India's nuclear

¹ See Scott Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," *International Security* 21:3 (1996-1997): 54-86; and Etel Solingen, "The Political Economy of Nuclear Restraint," *International Security* 19:2 (1994): 126-169.

² See Itty Abraham, *The Making of the Indian Atomic Bomb: Science, Secrecy, and the Postcolonial State* (London: Zed Books, 1998); and Jacques Hymans, *The Psychology of Nuclear Proliferation: Identity, Emotions, and Foreign Policy* (New York: Cambridge University Press, 2006).

³ For example, see Andrew Kennedy, "India's Nuclear Odyssey: Implicit Umbrellas, Diplomatic Disappointments, and the Bomb," *International Security* 36:2 (2011): 120-153; and Alexandre Debs and Nuno Monteiro, *Nuclear Politics: The Strategic Causes of Nuclear Proliferation* (New York: Cambridge University Press, 2017).

⁴ See Gaurav Kampani, "New Delhi's Long Nuclear Journey: How Secrecy and Institutional Roadblocks Delayed India's Weaponization," *International Security* 38:4 (2014): 79-114.

⁵ This includes George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley: University of California Press, 1999); Sumit Ganguly, "India's Pathway to Pokhran II: The Prospects and Sources of New Delhi's Nuclear Weapons Program," *International Security* 23:4 (1999): 148-177; and Vipin Narang, *Seeking the Bomb: Strategies of Nuclear Proliferation* (Princeton: Princeton University Press, 2022).

⁶ For the different codings of when India's nuclear weapons program began and culminated, see Alexander Montgomery and Scott Sagan, "The Perils of Predicting Proliferation," *Journal of Conflict Resolution* 53:2 (2009): 302-328; and Philipp Bleek, "When Did (and Didn't) States Proliferate? Chronicling the Spread of Nuclear Weapons," Discussion Paper (Cambridge, MA: Project on Managing the Atom, Belfer Center for Science and International Affairs, Harvard Kennedy School and the James Martin Center for Nonproliferation Studies, Middlebury Institute of International Studies, Monterey, CA., June 2017).

program has been dual use from the beginning—in other words, military and peaceful uses were contemplated from the outset, as the book’s title suggests. Sarkar argues that this multifaceted nature of the program helped generate and maintain political support for it, since those who were attracted to the developmental and national security purposes of nuclear technology could both find reasons to get behind it.

Relatedly, she argues that Indian actions were generally driven by a desire to maintain freedom of action and that this led to “hyper-diversification” in terms of relationships with foreign suppliers, as well as intentional ambiguity in the program, which not only had domestic benefits but also helped limit outside nonproliferation pressures by making India’s ultimate goals opaque. In contrast to arguments that India was primarily driven by domestic or normative concerns, Sarkar also argues for the importance of security threats—both internal and external—in shaping Indian decisions. Finally, she broadens the aperture to explore India’s space program, which she argues India similarly advanced by taking advantage of the dual-use nature of the technology to secure foreign assistance.

Both reviewers in this roundtable have many positive things to say about *Ploughshares and Swords*, which received the 2024 Bernard D. Cohn Book Prize from the Association for Asian Studies and 2023 Honorable Mention for Global Development Studies Book Award from the International Studies Association.

Rabia Akhtar and S. Paul Kapur both praise the meticulousness of the historical research, which draws on documents from a wide range of archives, as well as the nuance of the argument, which eschews simple one-variable explanations. The reviewers likewise agreed that a major contribution of the book is its successful casting of doubt about influential narratives that portray Indian nuclear decisionmaking as having been driven primarily by normative beliefs or ideology.

Akhtar and Kapur also both appreciate the relevance of the book for contemporary debates about India’s geopolitical choices in the context of a rising China. As Akhtar suggests, Sarkar’s examination of how India has responded to Chinese threats in the past may hold clues for how it is likely to behave strategically going forward. Similarly, Kapur notes that if Sarkar is right that India has historically been driven less by ideology and more by a strategic framework for navigating a complex domestic and international environment, then we might have higher expectations for India’s capacity to play an effective role in balancing against China’s power in Asia.

While they are overwhelmingly positive in their reactions, both reviewers point to unanswered questions raised by Sarkar’s book. Given Sarkar’s argument that the Indian strategy has been too effective in stifling domestic dissent, Akhtar wonders how democratic governments should go about securing public buy-in for their nuclear programs. For his part, Kapur suggests that Sarkar could have done more to analyze the 1998 nuclear tests and establish the degree to which they are consistent with prior periods of Indian nuclear history.

In her response, Sarkar thanks the reviewers and acknowledges the importance of their critiques while arguing that addressing them is outside the scope of her book. In reply to Akhtar, Sarkar avers that her objective is not to help democracies rally support for their nuclear programs but instead to understand how governments have shielded their nuclear programs from scrutiny in the past. In response to Kapur, she notes that she was unable to fully examine the 1998 tests due to the lack of archival materials that are currently available.

Like any excellent work of scholarship, one of the strengths of Sarkar’s book is that it points to many fruitful research directions that other scholars can pursue. *Ploughshares and Swords* will no doubt serve as a touchstone for scholarship on India’s nuclear history going forward.

Contributors:

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 Review by Rabia Akhtar, The University of Lahore

India's nuclear program continues to attract many scholars and practitioners around the world, primarily because of its many phases, its position in the global nuclear landscape, and its effects on the state of strategic stability on the Subcontinent. Therefore, a lot has been written about its genesis, evolution, and impact. By virtue of being one of the nuclear states in South Asia, India is positioned to strengthen as well as dampen deterrence and crisis stability, and, resultantly, affect strategic stability in an otherwise volatile, complex nuclear environment. All this necessitates further academic inquiries about the Indian nuclear program, with its past, present and future mapped out. This becomes all the more important at a time when the South Asian region is becoming a fertile ground for crises with nuclear undertones. Also, with an assertive and risk-acceptant leadership stewarding India's nuclear program,¹ it would be useful and instructive to understand the significance that Indian leaders have, for the past seven decades, attached to it and its weapons' components. That, however, is not possible unless India's nuclear history is parsed.

Some authoritative accounts on India's nuclear excursion have enriched the discourse on it. These scholarly ruminations hold India's moral and political norms responsible for its reluctant entry to the nuclear weapons' club. In his seminal book on India's nuclear program titled *India's Nuclear Bomb*, George Perkovich answers an important set of questions on how New Delhi has approached nuclear weapons. Shedding light on India's nuclear policy, Perkovich writes that:

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.²

It is this ambiguity and tug of war that Jayita Sarkar analyzes, through the lens of history, in her new book. Charting India's nuclear developments from the 1940s until the 1980s, Sarkar assesses how and why the country's leaders and nuclear managers chose one set of technologies over the other. According to Sarkar, the architects of India's nuclear program saw it as advantageous for the country's geopolitical (security) as well as its technopolitical (development) ambitions.

Challenging the assertion that the energy program developed into a weapons one gradually, Sarkar cogently argues that the program was dual-purpose from the very outset. She writes that the "deliberate duality in the nuclear program was the outcome of the leaders' pursuit of freedom of action, which itself resulted from sociotechnical imaginaries of the nation and the role of fission in it. From the program's inception, ploughshares were swords, and swords were ploughshares" (14). Sarkar's linking of India's nuclear program to the country's exercise of freedom of action is instructive for nuclear watchers. This historical account on how India saw the many applications of nuclear technology will be useful to those academicians who wish to theorize and ascertain the impact of emerging technologies and nuclear weapons on strategy and policy.³ If Sarkar's research-laden account, which relies heavily on using archives in various important capitals, is anything to go by, it could be argued that a bevy of lethal weapons, nuclear and non-nuclear, can be seen as

¹ Frank O'Donnell, "India's Nuclear Counter-Revolution: Nuclear Learning and the Future of Deterrence," *The Nonproliferation Review*, 26:5-6, (2019): 407-426, DOI: [10.1080/10736700.2019.1715018](https://doi.org/10.1080/10736700.2019.1715018)

² George Perkovich, *India's Nuclear Bomb* (Los Angeles: University of California Press, 1999).

³ Caitlin Talmadge, "Emerging Technology and Intra-War Escalation Risks: Evidence from the Cold War, Implications for Today," *Journal of Strategic Studies*, 42: (2019): 864-887, DOI: [10.1080/01402390.2019.1631811](https://doi.org/10.1080/01402390.2019.1631811)

those that can increase India's freedom of action. Indeed, the strength of Sarkar's work lies in the fact that it gleans a lot from the archives. Some of the archives she has used are the International Atomic Energy Agency's Archives, the National Archives of India, Tata Central Archives, Dwight D. Eisenhower Archives, and the Library of Congress, besides other notable ones. Further, Sarkar, with a view to contextualizing the set of factors that shaped India's nuclear choices, debunks the myth of a peaceful India, arguing that it does not hold against the phenomena of wars and violence in that country. Moreover, attributing India's stand against global nonproliferation to its quest for gaining more freedom of action, Sarkar does not give much credit to the highly touted moralistic approach of India's strategic managers. The author is right in deconstructing the contours of a not-so-peaceful India and a pragmatic opponent of the global nuclear nonproliferation regime. This is primarily because her book assesses New Delhi's nuclear forays through different prisms. In other words, Sarkar's book makes the reader step back and question conventional explanations about India's nuclearization, which give more prominence to domestic political drivers and the prestige phenomenon.

That Sarkar establishes a connection between India's geopolitical ambitions, technological improvements, and nuclear-related decisions is reason enough to link the country's efforts to attain freedom of action with its geopolitical trepidations. Sarkar gives a detailed account of the parleys between Indian, French, and US officials over the procurement of India's atomic earths, stressing that the country's leadership looked askance at extractive colonial relationships. She contends that India's reactor cooperation agreement with the French Commissariat à l'Énergie atomique (CEA) allowed its leaders to pursue and retain their freedom of action, adding that the Atomic Energy Commission of India (AECI) used atomic earths as the techno-political tool to articulate "its opposition to US policies of stockpiling, control, and censorship in the realm of nuclear fission" (54). India's proclivity to augment its space for acting freely permeated its approaches towards foreign and security policies. As adroitly explained by Sarkar, India expanded its nuclear program, with a view to concurrently meeting national development and national security goals. Sarkar adds new evidence to the mix, explaining how India kept the nuclear weapons option open after suffering an ignominious defeat in the 1962 Sino-Indo war. Other than speeding up India's nuclear program, the war pushed its space program forward. India's space program, too, was steered in a manner which allowed India a degree of freedom. At a time when scholars are trying to make sense of nuclear transitions in South Asia,⁴ or to analyze how Indian leaders can leverage nuclear weapons going forward, Sarkar's framing of the China factor in India's nuclear history is highly useful. What's more, even today, India can think of relying on ambiguity to achieve multiple geopolitical and territorial goals through its nuclear program. That said, the costs of doing so may be prohibitive in an even otherwise fraught strategic environment.

Sarkar's focus on identifying how and where India's nuclear fraternity safeguarded its freedom of action adds to the discourse on nuclear proliferation. Nuclear enthusiasts in India, by diversifying the suppliers and the technologies India acquired, navigated the restrictions that the strengthened nonproliferation regime had imposed on India and other countries in the 1960s and 1970s. Sarkar sheds light on what she calls India's "Technopolitical Responses to the NPT." Alluding to their grit and determination of the leaders of India's nuclear program to evade constrictions, Sarkar writes that they pursued rocket technologies to develop delivery vehicles before they had produced and tested an actual nuclear device" (136). All this, it must be stressed, does show how difficult it is to stop prospective proliferants from using canny and uncanny means to achieve their end goals. This task becomes all the more onerous when a state's nuclear developments, partially or fully, are being dictated by a bigger adversary. While Sarkar rightly alludes to China not causing a

⁴ Ashley J. Tellis, *Striking Asymmetries: Nuclear Transitions in Southern Asia* (Washington, D.C., Carnegie Endowment for International Peace Publications Department, 2022).

mad sprint towards nuclear weapons, her analyses fittingly speak to the impact of China's nuclear developments on those of India.

The author takes a deep dive into the world of the 1970s, when India was ruled by Prime Minister Indira Gandhi. She argues that India's geopolitical anxieties did not end with its victory in the 1971 Indo-Pak War. These anxieties, coupled with Gandhi's battles on the internal front, however, did not stop the nuclear program from growing. In fact, they led to simultaneous, concurrent actions pointing to the desire of India's leaders to bolster territoriality. As Sarkar explains, India's nuclear exports to Middle Eastern countries typified the integration of technopolitics with geopolitics given that Gandhi wanted to enhance her country's relations with states that expressed similar geopolitical preferences. Sarkar's excellent dissection of India's oil diplomacy in the 1970s testifies to how geopolitically significant its nuclear complex had become. Besides, as Libya's case suggests, it is difficult to strike a balance between stopping the spread of nuclear weapons and ensuring access to peaceful uses of nuclear energy. This quandary incentivizes willing buyers to meet suppliers, and, in the process, threatens to shake the very foundations of the nonproliferation regime.

Next, Sarkar chronicles the bickering that ensued India's 1974 nuclear tests. Documenting India's official position on the test and the flurry of criticisms it faced, Sarkar emphasizes how Indian leaders worked to maintain the country's freedom of action. She argues that ambiguous messaging around the cost of India's Pokhran-1 nuclear test in 1974 worked in its favor. To Sarkar, one of the advantages of economic opacity is that it staved off internal pressure and censure, especially during a debilitating economic crisis. One could argue that turning skepticism into applause at home emboldened the doyens of the Indian nuclear program. With the nuclear narrative controlled, Gandhi felt confident enough not only to openly mull over conducting nuclear explosions but also to use the threat of doing so as a bargaining chip in talks with the United States. Sarkar, however, criticizes the freedom of action of India's nuclear elite. She laments that this influential group has practically closed the window for opposition to the nuclear empire, simply because opposing nuclear energy and nuclear weapons is portrayed as being against economic modernity and national security, respectively. This point raises many questions for scholars going forward. One of the fundamental puzzles that nuclear watchers must look to solve is this: how best should democracies rally support for their nuclear programs?

Sarkar's book presents a provocative account of India's nuclear developments, one which nuclear aficionados must engage with. This masterpiece in history brings to light new knowledge about India's nuclear program, which can also help break new theoretical grounds, especially apropos of leadership, technology, and decisionmaking. Therefore, this book is a must-read for anyone who is interested in understanding the antecedents of Nuclear India.

Review by S. Paul Kapur, U.S. Naval Postgraduate School

In *Ploughshares and Swords: India's Nuclear Program and the Global Cold War*, Jayita Sarkar offers an in-depth history of India's quest for a nuclear capability, beginning before the country's independence in 1947, and concluding during the early 1980s.¹ Drawing on a wealth of archival materials from the United States, India, the United Kingdom, and elsewhere, as well as a wide range of secondary sources, Sarkar explains why India wanted a nuclear capability, and shows how it went about developing one. She tells a story of dualities. Dual motives—economic and security—drove India to pursue a general nuclear capability. Dual security threats—internal and external—encouraged India to develop nuclear weapons. And dual scientific efforts—nuclear and space—were mutually complementary, enabling India to acquire a nuclear-weapons capacity even in the face of significant material and political obstacles.

Sarkar shows that, contrary to conventional wisdom, India's motives for and methods of nuclear acquisition were not primarily normative. Rather, over decades, Indian leaders made deliberate strategic choices, taking the steps necessary to develop a nuclear capability that could provide the country with important economic and security benefits. These steps were sometimes unconventional, and did not always mirror those of the existing nuclear powers. But this did not render the Indian nuclear program ineffective. Rather, it gave the program a unique character, enabling India to acquire a nuclear capability on its own terms.

Independent India's founding leaders had mixed views about the development of a nuclear capability. Both Mahatma Gandhi and Jawaharlal Nehru were opposed to nuclear weapons, which Gandhi characterized as the "most diabolical use of science."² But Nehru diverged from Gandhi regarding the role that scientific progress would play in the development of the new nation. While Gandhi envisioned an India composed of traditional, self-sufficient villages, Nehru sought to propel India into a larger world of economic development and modernity. He therefore supported national projects to promote scientific advancement, including in the nuclear sphere. India's leading scientists, many of whom had received advanced training at top European universities, and Indian industrialists, who maintained extensive overseas business connections and could help underwrite Indian research efforts, shared Nehru's vision. Thus, Indian political leaders, and the country's scientific and industrial elites, decided early on that India should pursue a nuclear capability.

As Sarkar explains, a dual rationale underlay the Indian decision. First, the acquisition of a nuclear capability could be developmentally beneficial, providing India with badly needed energy, and facilitating projects such as port construction and the mining of ores. Second, the effort could provide India with a nuclear weapons capability, which would generate deterrence and protect it from external dangers.

To pursue this strategy and advance its nuclear program, India needed freedom of action, allowing it to employ a wide range of tactics, and draw upon multiple political, technological, and economic resources. It achieved this freedom through what Sarkar calls "hyperdiversification;" India partnered with private companies and foreign atomic energy agencies, acquired different types of research and power reactors, developed technologies for use in nuclear energy and in space, and secured materials and technology from countries around the world, including both of the superpowers (3). The scientists who directed these multiple efforts, she writes, "enjoyed unwavering support" from those in positions of political and economic power (8).

¹ The opinions expressed in this review are my own, and do not necessarily reflect those of the Department of Defense.

² Quoted in Sumit Sarkar, "The BJP Bomb and Aspects of Nationalism," *Economic and Political Weekly*, Vol. 33, No. 27 (July 4-10, 1998), 1725-1730.

Sarkar argues that the nuclear program's dual-use nature, and the diversity of the tactics employed to advance it, stifled dissent within India, even as they increased Indian leaders' options abroad. For the size and diversity of the effort hid its flaws and failures, making Indian society more willing to accept it. Also, the program's twin goals ensured that any opposition to it could be construed as opposition to India's internal development and external security, which was tantamount to opposing India itself. Thus, Sarkar writes, by "controlling the discourse on modernity," Indian leaders both advanced the nuclear program and reduced democratic accountability within India (14).

The dual goals and diverse tactics of India's nuclear program also helped to shield it from external scrutiny. The international community had deemed the developmental use of nuclear energy as legitimate. Cloaking the Indian nuclear program in the mantle of economic development thus made it harder to criticize and obscured the program's military implications.

Sarkar argues that Indian leaders' particular interest in a nuclear weapons program resulted from a second duality—the simultaneously internal and external nature of security threats to India. India contended with blurred boundaries between dangers from within and without; internal strife could erupt into international conflict, and international conflict could trigger the eruption of domestic violence. This duality created strategic anxiety amongst Indian leaders and gave nuclear weapons, with their unique ability to protect and deter, a heightened geopolitical salience.

Sarkar explains that India's pursuit of a nuclear weapons capability was facilitated by a third duality—co-development of Indian nuclear and space capabilities. The close relationship between the two programs helped to obscure the nature and extent of Indian nuclear pursuits. In addition, the space program developed rockets that could be used not just for space research, but also to deliver nuclear weapons. Typically, countries pursued nuclear weapons capabilities in a linear fashion, first acquiring fissile material, then developing a weapon, and finally securing delivery vehicles. But India did not have this luxury. International pressures and resource constraints stymied Indian weapons production even as the development of rockets progressed. Faced with this challenge, Indian leaders proceeded in a non-linear manner, using the space program to acquire rockets in parallel with the development of nuclear weapons.

Sarkar notes that such departure from standard procedures was not uncommon for India, giving its nuclear program a unique character, shaped by its particular national preferences and constraints. In the Indian program, nuclear weapons might be developed concurrently with their delivery vehicles, and a rocket component could be transported to a launch site on a bicycle. Nonetheless, the outcome was the same as in more traditional programs—India was able to develop and detonate a nuclear device, which could be used peacefully, for developmental purposes, but also could be a potent weapon of war. India simply achieved this goal in a manner particular to its circumstances.

Sarkar's account of India's nuclear program differs from normative explanations prevalent in the literature. In one such view, India's quest for a nuclear capability was motivated primarily by a post-colonial desire for equity; India developed nuclear weapons because it needed to prove that its scientists were equal to those of the great powers, and to reject what it saw as the discrimination underlying the global non-proliferation regime. Thus, as George Perkovich writes, India's nuclear program was "only vaguely" related to concerns about national security.³ In another prevalent view, the uneven pace of India's decades-long nuclear trajectory resulted from the country's commitment to the principle of "strategic restraint," which eschewed the use of military force and kept India's security policy disconnected from the country's political goals. Therefore, the

³ George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley: University of California Press, 1999), 6.

Indian nuclear program was an example of what Stephen Cohen and Sunil Dasgupta call India's propensity for "arming without strategic purpose."⁴

Unlike these views, which see India's nuclear program as a largely normative, astrategic project, Sarkar casts India as a fundamentally strategic actor. In this telling, India deliberately engaged in a decades-long process of scientific development, with major economic and security implications, in an environment of material constraint and political opposition. Sarkar's account does not deny that equity was important to India, that India's nuclear trajectory was sometimes disjointed, or that India achieved its nuclear goals slowly. But equity, in this view, is a reason why India should be treated like other states and allowed to acquire a nuclear capability, rather than the reason that India wanted a nuclear capability in the first place. And the nuclear program's zigzags and delays were largely a function of India's adaptation to a unique combination of material and political constraints, not the result of an astrategic approach to security policy.

Other scholars have also taken a strategic view of India's nuclear program, arguing that it was driven primarily by a quest for security, though bureaucratic and domestic politics mattered as well.⁵ Sarkar's deep grounding in the program's history enables her to tell an even more nuanced story. In it, India behaved strategically, but this strategy was not narrowly focused, transparent, or linear. Rather, it was multifaceted, complicated, and obfuscated by multiple purposes, actors, vectors, and resources.

Sarkar's account is important because it shows that there are many ways for a state to act strategically. Behavior that appears incompetent or irrational may be a reasonable response to local resource constraints, political pressures, and opportunities. Sarkar's story also has implications for India's growing role on the world stage. Does India possess the strategic wherewithal to serve as a "net security provider," and help to keep the Indo-Pacific region free and open in the face of rising Chinese power?⁶ If India's strategic behavior is concerned mainly with settling post-colonial scores, and unable to connect security policy with national goals, it will have difficulty meeting this new challenge. But if, as Sarkar suggests, India has the ability to shepherd a complex strategic effort through decades, promoting national economic and security interests while navigating a difficult material and political environment, success in its emerging international role is more likely.

In the book's epilogue, Sarkar characterizes India's nuclear program as an "anti-dissent machine," arguing that it has become a "disciplining device of the state" (202-203). This section might be better used to offer a discussion of India's 1998 nuclear tests, which finally made India a full-fledged nuclear-weapons state. This is particularly true given that Sarkar has already explained how the nuclear program stifled dissent and undermined democratic accountability within India. Readers will wonder how the 1998 tests fit into Sarkar's analytic framework, and comport with her discussion of the nuclear program through the early 1980s.

This issue aside, however, *Ploughshares and Swords* is a highly informative work that makes new and important points about India's nuclear history. The book pushes us to reconsider our understanding of India's nuclear

⁴ Stephen P. Cohen and Sunil Dasgupta, *Arming Without Aiming: India's Military Modernization* (New Delhi: Penguin, 2010), xii, 97-122.

⁵ See, for example, Sumit Ganguly, "India's Pathway to Pokhran II: The Prospects and Sources of New Delhi's Nuclear Weapons Program," *International Security*, Vol. 23, No. 4 (Spring 1999), 148-177.

⁶ See Press Trust of India, "India Can Be the Net Security Provider in Indian Ocean Region: Rajanath," *Business Standard*, February 4, 2021, https://www.business-standard.com/article/current-affairs/india-can-be-the-net-security-provider-in-indian-ocean-region-rajanath-121020301779_1.html.

pathway, and to broaden our view of strategic behavior generally. And it has significant implications for India's ability to act purposefully on today's world stage.

 Response by Jayita Sarkar, University of Glasgow

It is the dream for authors to be able to engage with readers and reviewers after the publication of their monographs. It is an honor, therefore, to have my book be subject of this H-Diplo forum. Both reviewers paid meticulous attention in reading *Ploughshares and Swords*, making insightful observations about the book's strengths and contributions. I remain indebted to each of them for their generosity in terms of time and labor. Rabia Akhtar, S. Paul Kapur and Nick Miller are remarkable social scientists whose work I greatly admire. I am grateful for their engagement with my book.¹

In her generous review, Rabia Akhtar calls the book “a provocative account” and a “must-read for anyone who is interested in understanding the antecedents of nuclear India.” She writes that the “book makes the reader step back and question conventional explanations about India’s nuclearization,” which have so far prioritized domestic politics and prestige. She thus refers to political scientist Scott Sagan’s renowned article on “three models in search of a bomb,” which since its publication in the mid-1990s has become a timeless aid for undergraduates and newcomers to the subject to assess country-level drivers for nuclear proliferation.² Akhtar underscores the book’s emphasis on the significance of China, particularly of Indian policymakers’ fears of Chinese influence along the disputed borderlands. She emphasizes that the book goes beyond the “highly touted moralistic approach,” which features the ideological imperatives that are often claimed to have driven India’s slow development of nuclear weapons.³

Broaching the notion of the “anti-dissent machine,” which I present in the epilogue as the flip side of “freedom of action” (202), Akhtar draws attention to the relationship between democracies and nuclear weapons programs. She raises the question, “How best should democracies rally support for their nuclear programs?” While the issue of the best way in which to bolster support for nuclear weapons is a pertinent question for political scientists and policymakers, it is not one that I pursue in my book. Nor is that the goal of my scholarship.

My concern has been the opposite, namely, how large infrastructure projects such as nuclear programs—when simultaneously serving civilian and military purposes—can and often suppress dissent, functioning as an “anti-dissent machine” in practice, preventing accountability and transparency in the name of the nation. That said, recent social-scientific research is pursuing the question of the lack of effective public control of nuclear weapons in democracies, which might be of interest to those pursuing this question.⁴

In his thoughtful review, S. Paul Kapur calls the book a “highly informative work” with “significant implications” about “strategic behavior generally” and “India’s nuclear pathway” specifically. His assessment is a careful articulation of the connected dualities that run as through threads in *Ploughshares and Swords*: civilian

¹ Rabia Akhtar, *The Blind Eye: U.S. Non-proliferation Policy Towards Pakistan from Ford to Clinton* (Lahore: University of Lahore, 2018); S. Paul Kapur, *Dangerous Deterrent: Nuclear Weapons Proliferation and Conflict in South Asia* (Palo Alto, CA: Stanford University Press, 2007); Nicholas L. Miller, *Stopping the Bomb: The Sources and Effectiveness of US Nonproliferation Policy* (Ithaca, NY: Cornell University Press, 2018).

² Scott D. Sagan, “Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb,” *International Security* 21:3 (1996-1997): 54-86.

³ See for example, Rohan Mukherjee, “Nuclear Ambiguity and International Status: India in the Eighteen-Nation Committee on Disarmament, 1962–1969,” in *India and the Cold War*, ed. Manu Bhagavan (Chapel Hill, NC: University of North Carolina Press, 2019), 126-50; Manjari Chatterjee Miller, *Wronged by Empire: Post-Imperial Ideology and Foreign Policy in India and China* (Palo Alto, CA: Stanford University Press, 2013), 82-105.

⁴ See for example: Thomas Fraise, “Nuclear Weapons Programs, Secrecy, and Democracy in the United Kingdom, France, and Sweden (1939–1974),” (PhD diss., Sciences Po Paris, 2023).

and military uses; nuclear and outer space technologies; and security/insecurity outside the borders of the nation-state and in the borderlands. Like Akhtar, Kapur also underlines how the book challenges conventional wisdom by obviating “normative explanations prevalent in the literature.” His review correctly reinforces how the processes involving India’s nuclear program were “multifaceted, complicated, and obfuscated by multiple purposes, actors, vectors, and resources.”

Kapur’s suggestion to incorporate the significance of the 1998 nuclear weapon tests in South Asia is understandable. Other reviews have also suggested that the 2005 US-India civilian nuclear agreement should have been discussed at length, and that a sequel to the book might be due.⁵ While I can understand why social scientists would like to know more about the present, as a historian, I was limited to the available archival sources, which in my case, stopped around the 1980s.

That said, India’s nuclear program is widely studied by political scientists and international relations scholars, who have written on the last 25 years of the nuclear program.⁶ A new generation of political scientists is keen to incorporate declassified archival sources as part of mixed-methods research to shed light on contemporary policy questions related to South Asia. Even if historians do not immediately join the fray to weigh in on twenty-first century concerns of nuclear politics in the subcontinent, there is still social scientific knowledge to count upon, even though that literature poses and answers different questions than the works of historians do.

I am grateful and honored to have received such insightful engagement with my monograph from scholars whose work I admire and whose collegiality I cherish. I think I have addressed the questions and comments raised by the two remarkable reviewers. I thank them again for their insights, and to Cindy Ewing and Diane Labrosse for their patience and persistence in guiding this discussion to its conclusion.

⁵ A Roundtable on Jayita Sarkar, *Ploughshares and Swords: India’s Nuclear Program in the Global Cold War*, Andrew J. Rotter, William Thomas Allison, Nicholas Evans Sarantakes, Tanvi Madan, and Jeffrey Crean, *Passport: The Society for Historians of American Foreign Relations Review*, April 2023. Author’s Response, September 2023.

⁶ See for example: Sumit Ganguly and S. Paul Kapur, *India, Pakistan, and the Bomb: Debating Nuclear Stability in South Asia* (New York: Columbia University Press, 2010); Harsh V. Pant and Yogesh Joshi, *Indian Nuclear Policy* (New York: Oxford University Press, 2018); Rajesh Rajagopalan and Atul Mishra, *Nuclear South Asia: Keywords and Concepts* (Abingdon, Routledge, 2014); Siddharth Mallavarapu, *Banning the Bomb: The Politics of Norm Creation* (London, Pearson, 2007).