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Reviewed by Jayita Sarkar, Harvard University on 7 October 2014

Reponse by Gaurav Kampani, Assistant Professor of Political Science, University of Tulsa

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Jayita Sarkar's generous though critical review of my article flags several aspects concerning its methodology and substance. These criticisms demand answers and I am happy to provide them.

Sarkar is critical of the elite interview method used to suss the core claims made in the article, which because of the sensitivity of the data and the anonymity of several interviewees, leaves its findings generally unverifiable. By contrast, the archival method that Sarkar uses and favors avoids the above pitfalls and constitutes the gold standard for in-depth case analysis of the kind represented in my research.

On issues of substance as well, Sarkar is skeptical about my thesis. She thinks the complex phenomenon of the slow pace of Indian weaponization must have multiple causes that transcend secrecy, which I identify as the principal stumbling block. She suggests resource constraints and U.S.-led international technology denials to India's nuclear sector from the time of its first nuclear test in 1974 as alternative explanations for this very same outcome. Arguing that my research overlooks the ballistic missile component of India's weaponization effort and that my explanation does not specify with precision the instrumental nature of U.S. pressure that was the cause behind Indian secrecy, she

concludes her critique by pointing out that no nuclear proliferation program exists in isolation. Rather, the degree of external assistance plays a critical role in determining the pace and success of a country's nuclear weapon acquisition efforts.

Sarkar's methodological concern, although serious, misses the point of data scarcity. Her substantive concerns are similarly misplaced.

Archival data pertaining to recent nuclear developments in India are simply unavailable. This pertains to both western and Indian archives. In the West, laws and rules exist to declassify many but the most sensitive records after a mandatory 20-30 year hold. Not so in India, where the government stopped declassifying even nominal defense records from the late-1950s onward. Hence the cross-referencing that Sarkar suggests perforce cannot happen without recourse to elite interviews in India. More significantly, information pertaining to my research findings is of yet unavailable in western archives. The only method of obtaining it, absent access to national technical means, is elite interviews.

In India, the small social network of scientists and officials who executed the weaponization program in the 1990s adopted a deliberate strategy of verbal communications. They avoided committing sensitive policy plans and decision-making flows to paper lest documents leak to foreign intelligence agencies. In some instances principals drew up policy plans in pencil to avoid attention from their staff and then destroyed those documents soon after a particular meeting. This process of secrecy left the institutional memory of the state in that period a blank slate, a condition that pertains until today. Knowledge of many sensitive decisions and policy plans remains in the memory of this small but dwindling network of former state officials, many of whom vow to carry 'India's most precious secrets' to the grave.

A government- or quasi government- sponsored oral history project could still save the day. But to best of my knowledge there is no such project in the works. Some members of this network have indicated that they may yet write memoirs. No memoirs containing sensitive information pertaining to the nuclear weaponization program, however, have appeared to date. Given all these challenges, elite interviews are the only method of obtaining such sensitive information. Proposed alternative methods are just theory.

Of course archival research constitutes a superior method. The challenge before qualitative researchers, however, is to institutionalize a set of best practices that narrow the gap between archival and elite interview methods. For example, should non-attributable interview data be subject to mandatory release similar to declassification rules that pertain to government records after a certain time period? Should journals that publish such data become repositories for them and allow other researchers varying degrees of access subject to a set of pre-determined criteria? Can we institute professional norms that allow individual researchers to approach their peers for access to non-attributable published data? If yes, then what 'use rules' ought to obtain? How might we protect the identities of non-attributable sources while devising means to crosscheck the veracity of their claims? When sensitive and unique data often constitute the argument in proliferation studies, a sub-field largely dominated by desktop research, how might researchers who exhibit entrepreneurship in obtaining new data protect their competitive advantage while ensuring progress of a broader research agenda? We need answers to these questions and not iterations attesting to the superiority of one method over another irrespective of context.

All this said, proliferation research that draws on elite interview methods does not constitute the last word on its subject. Its objective often is to boldly go where other researchers do not dare to because of the perceived impossibility of obtaining data. Its attempt is to lay down markers for others to follow. The researcher hopes to provoke reactions from an information-denying establishment as means to developing a mature conversation in a hitherto forbidden domain. Eventually and over time, the researcher believes that more cascades of information will vet established and claimed truths and grow a body of research. This is public goods creation through the development of information and knowledge markets. Unlike archival research, which is the equivalent of feeding off a dead carcass in the jungle, the elite interview method is fresh kill that feeds a current hunger for data. It constitutes intellectual entrepreneurialism of an acutely daring variety.

Sarkar's substantive concerns and proposed alternative explanations of resource constraints and technology denials, also fail to pass muster. Scholars generally agree that the Indian state is generous in funding its nuclear, space, and defense research and development sectors, collectively known as the 'strategic enclave.' In fact, the state's generosity has never been found wanting in the last three decades. The evidence from the most authoritative histories on India's nuclear weaponization program as well as from my interviews makes clear that money was never the problem. The consensus in the available histories and among my interlocutors is that India's problems are institutional and organizational. What scholars generally debate are the causes for this institutional and organizational dysfunction.

Similarly, U.S.-led technology denials had little impact on the weaponization program. In fact, the U.S. government's own declassified documents from the 1980s attest ¹to the Indian nuclear sector's successes in circumventing U.S. technology controls. The more specific hurdle in India's weaponization path was that of integrating the weapon with the Mirage 2000. Technology denials did not stand in the way of India acquiring two squadrons of Mirages from France in the mid-1980. Problems arose because the Indian Air Force (IAF) was never tasked with evaluating the aircraft for nuclear missions or mastering skills (computer source codes for example) essential for transforming the aircraft into a nuclear vector. For example, the IAF successfully rewrote the source codes for the Anglo-French Jaguar's computer system that India acquired in the late-1970s. That process took about five years to accomplish. The process in the Mirage turned out far more complicated because of its fly-by-wire technology. Senior IAF officials who participated and observed the weaponization program from the sidelines are convinced that better coordination and information sharing could have prevented delays. The problem in the Indian case is once again institutional and organizational.

My article deliberately sidesteps the subject of India's ballistic missile program and weaponization in this period. This is not an oversight, as Sarkar suggests. Rather, weaponization in the early 1990s focused on combat aircraft because of their sophistication, reliability, and flexibility. Missiles developed until then did not fit the bill as nuclear vectors because of their short-range and unreliability. Once again the problem was not one of resources or technology. Secrecy concerns stemming from the fear of U.S. sanctions were the principal reason why the Indian government maintained firewalls between India's sophisticated civilian space agency with its advanced rocketry program and its military missile programs. And although Sarkar maintains that my research does not specify the precise sources of U.S. nonproliferation pressures that triggered such excruciating demands for secrecy within the Indian state, I do specify the threat of U.S. economic sanctions, particularly the

¹ "India's Nuclear Procurement Strategy: Implications for the United States," Directorate of Intelligence, CIA-RDPS00854R00020012000-0 (Approved for Release: July 1, 2011), p. iii.6, 12.

threat to withhold IMF support for India's fragile and liberalizing economy in the early and mid-1990s.

Finally, Sarkar is correct in observing that horizontal and vertical proliferation between established nuclear weapon states and nuclear wannabe states can obviate many retarding effects of secrecy. Observe, however, how internal coordination problems disrupted nuclear weapon aspirations in Iraq and Iran. Observe South Africa and Pakistan's long time-lines for nuclear weapons development. To be sure, India's case is an outlier. But that is also because it is representative of the sort of isolating pressures and coordination difficulties that proliferating states currently face. That said, I address the problem of secrecy and clandestine proliferation in the concluding chapter of my dissertation, which I hope to publish as a book.

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