

Mansoor Ahmed, *Pakistan's Pathway to the Bomb. Ambition, Politics, and Rivalries* (Washington D.C.: Georgetown University Press, 2022), 291 pp.

For a long time, the dearth of original documents made the issue of nuclear proliferation in South Asia more a topic for security studies and proliferation theories rather than for historical studies. The archival situation has much improved, at least as India is concerned. Mansoor Ahmed's book, while purposefully pertaining to the realm of security and strategic studies, is a valuable contribution to the historical knowledge of Pakistan's nuclear programme thanks to a new range of oral sources and, most importantly, access to personal papers of Munir Ahmed Khan, chairman of the Pakistan Atomic Energy Commission (PAEC) from 1972 to 1991. Accordingly, if the main thrust of the book is demonstrating the paramount role of internal drivers in explaining Pakistan's proliferation, after Peter Lavoy's mythmaking model and Graham Allison's bureaucratic-politics decision-making model, this work offers a huge amount of new, often really innovative information.

In my view, a most interesting feature is Ahmed's interpretation of the 1974 Smiling Buddha detonation as simply the moment when Pakistan's proliferation became irreversible, but neither as the latter's direct cause nor as a sufficient element for explaining its course. This entails the actual reconsideration of both PAEC activities in the 1960s and the radicality of change implicit in the takeover by Munir Ahmed Khan via the national catastrophe of 1971. Compared to the standard narrative, Ahmed details how PAEC chairman Ishrat Husain Usmani sponsored latent proliferation through the plutonium route - the latter made possible by the development of the natural uranium fuel cycle for the peaceful nuclear programme. Others have already pointed out president Ayub Khan's cold reception of this kind of proposal - even though not with such a profusion of details - as well as the staunch opposition of the powerful civil bureaucracy to the whole nuclear effort. A crucial new contribution, however, is the set of recommendations prepared in the summer of 1967 by Munir Ahmed Khan (then an important IAEA official) and the future Nobel-laureate Abdus Salam, who was the influential scientific advisor to Ayub Khan. The document argued that the Indian nuclear threat was imminent and it represented a risk for the survival of the country. Accordingly, Pakistan had to react promptly through an option for an independent deterrent. Such option should consist in the acquisition of plutonium technology in the purview of the nuclear power programme. While India - as Yogesh Joshi has shown - was counting on the constraints imposed on possible Chinese nuclear blackmail by the superpowers' implicit threat of intervention, M.A. Khan and Salam argued that Pakistan could not "count on someone else's arsenal" and that "world public opinion [would] not give us any tangible defence" (p. 37).

The events of 1971 acted as a catalyst allowing the rise of the 'bomb lobby' with Bhutto and M.A. Khan at the helm of the country and the PAEC respectively. In the latter case, this ushered in a new work culture characterised by compartmentalisation and *jugaardh* (namely, resorting to local improvisation to solve technological problems). The Indian detonation in 1974 added urgency to the ongoing reorientation of the nuclear programme, leading to the inclusion of the uranium enrichment route in addition to the plutonium route. From this point on, Ahmed develops an argument for vindicating the role of M.A. Khan and his closest collaborators at PAEC in the development of Pakistan's deterrent against A.Q. Khan's 'mythmaking' and in the context of the persistent infighting in the Pakistani administration.

The author makes the point that uranium enrichment and plutonium reprocessing and production were complementary routes. They did not exclude each other; rather, what did change over time was the degree of priority assigned to each one. As Ahmed stresses, the centrifuge project began at the same time Pakistan signed a contract for the French to supply a reprocessing plant, so the former should not be considered as a consequence of the increasing difficulties and eventual demise of the French order. Moreover, Ahmed points out that the proposed Chashma reprocessing plant was an unclassified project quite distinct from the so-called New Labs reprocessing facility, being built outside IAEA safeguards from 1974. If anything, the protracted negotiations with the French were useful to obtain design know-how and quietly to begin

procurement for New Labs before the United States stepped up pressure on European suppliers. On the other hand, M.A. Khan's insistence for completing the Chashma plant autonomously became instrumental for president Zia's influential advisers – Ghulam Ishak Khan and Agha Shahi – to try unsuccessfully to remove him by discrediting the plutonium route and PAEC procurement strategy. While the Chashma reprocessing plant was effectively abandoned in 1980, the attempt at circumscribing PAEC activities to nuclear power and agriculture failed. In 1986 PAEC started activities for the construction of the first Pakistani production reactor at Khushab, eventually leading to fruition by 1998 a project which M.A. Khan had devised already in 1972.

Even more fascinating are the parts of the book dealing with uranium enrichment, which lead to a critical reassessment of the real role of Dr. A.Q. Khan in developing Pakistan's deterrent. Of course, Ahmed admits that at least part of the information provided by A.Q. Khan while working at URENCO in The Netherlands were useful for the Pakistani effort, as they added confidence and helped in providing the Pakistanis with a list of necessary materials and equipment. The author's effort, however, aims at downsizing A.Q. Khan's role, or, in other words, dispelling the 'myth' A.Q. Khan created about himself as the 'father' of Pakistan's bomb. First, Ahmed emphasises that PAEC had already put a focus on gas centrifuge as the most promising available technique for uranium enrichment independently and before the letter of September 1974 to Bhutto in which A.Q. Khan offered his help. The Pakistani president's authorisation to Munir Ahmed Khan to proceed with a centrifuge laboratory at Chaklala in February 1975 represented – according to the author – a proof of continuing confidence in PAEC at this regard. Second, Ahmed explains the importance of the surreptitious procurement network organised by mid 1970s by PAEC Shafiq A. Butt under the direct supervision of Munir Ahmed Khan. In 1975 the latter ordered to stockpile all materials and equipment necessary for the project within two years, realising that the window of opportunity was closing as the main nuclear suppliers imposed increasing restrictions after the Indian detonation. Third, the author details how strongly A.Q. Khan looked down on efforts of technological 'indigenisation', which on the contrary were at the heart of PAEC strategy and work culture. All in all, Ahmed apparently concludes that the narrative about an ailing nuclear project eventually redeemed by the intervention of A.Q. Khan was actually the latter's fabrication, which was effectively put through thanks to A.Q. Khan direct access to president Bhutto. The complex issue, of course, is quite delicate since it directly impinges on the overall assessment of the Pakistani nuclear weapons programme primarily as the result of illicit acts of proliferation, notably the theft of URENCO know-how.

All in all, the book is really worth reading. It significantly adds to the knowledge of the history of the Pakistani nuclear deterrent and it is methodologically consistent through its focus on domestic infightings, bureaucratic inertia, and personal narrations as crucial conditioning factors for explaining the dynamics of the deterrent's development. The professional historian might consider it wanting in its dealing of the wider context of these infightings: little is said about the conditioning effects of the 1965 war, for example, or about the enthusiasm generated by the Chinese test in the purview of blossoming relations between the two countries. Most of all, after David Engerman's approach, something more could be said about the international and transnational connections of single domestic actors in the context of the global Cold War and the former's expediency in the promotion of the latter's own agenda. A noticeable example in point might be the opposition of the Ministry of Finance to the nuclear project as such. Finally, while the book is valuable in understanding the net of competing international commercial interests which made Pakistan's procurement policy possible, in my opinion there remains a margin of ambiguity regarding the role of M.A. Khan while at the IAEA. Was he a kind of Pakistani 'fifth column' inside the Agency, as Jacob Darwin Hamblin has recently hinted, or earnestly a young enthusiast aiming at assisting his country's progress?