

Ramnath, Aparajith: *The Birth of an Indian Profession. Engineers, Industry, and the State, 1900–47*. New Delhi: Oxford University Press 2017. ISBN: 9780199469871; 288 p.

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India, as Aparajith Ramnath reminds us in this timely book, is a country that „worships“ engineers. Yet, for all the contemporary hype surrounding this diverse and often romanticized professional group, research on its historical development remains relatively sparse and defined by a number of enduring paradigms that have also circumscribed the history of science, technology and medicine in South Asia more generally. These have included a focus on individual, elite scientists – at the expense of broader communities of practice and their respective work cultures – as well as a preference for examining developments in these fields through the lenses of a colonial vs nationalist narrative that has obscured the state’s shifting engagement with science and technology in India in the first half of the twentieth century (pp. 4f.).

From the perspective of a history of technology and labour, there is, I would argue, another dimension worth considering here, one which the present book does not take into account. This is related to Greg Downey’s argument, in his study of the „hidden workers“ of information internetworks, that, „[p]aradoxically, the more the Internet grows in scale and scope, the more its virtual attractions obscure its physical foundation.“¹ While the expanding technological networks of the nineteenth and early twentieth centuries, for example those enabled by railways and telegraphs, did not offer the „virtual attractions“ of the contemporary Internet as such, it is nevertheless the case that these technologies, along with a host of others like dams, canals and roads, have often been more visible, both to historians and the general public, than the actual human workers who made them possible in the first place. In the context of colonial India, this can also be read as a reminder of the stubborn persistence of certain imperial ideologies, in par-

ticular those that fashioned such technologies into flagbearers of modernity and scientific progress, in the process also helping to insulate them to a certain extent from their more complex – and arguably messier – human dimensions. Nostalgic arguments about the technological blessings that the British have bestowed upon India often point to railways, roads and the like as pertinent examples of the benign character of their rule. Perhaps unsurprisingly, they have also been much less inclined to delve into the more intricate and often less comfortable details of the human stories that infused such technological „transfers“.

Ramnath’s book is thus an important attempt to uncover such „hidden workers“ in colonial India and bring their voices to the fore by drawing not only on colonial records, but also on the memoirs of the engineers themselves and periodical publications in the form of specialist journals. His analysis focuses on engineers active in three main areas during the period 1900–47, namely public works, railways and the private industry. The first two chapters identify and discuss, against the background of broader political developments and the establishment of professional institutions for engineers in the subcontinent, two main trends that shaped the trajectory of engineering as a profession during the first half of the twentieth century. One was Indianization, which saw a gradual, albeit uneven increase in the number of Indians working across various fields of engineering. The other was industrialization, a process reflected, amongst others, in a growing percentage of mechanical and electrical engineers as the century advanced.

The remaining three chapters each focus on a certain sector of activity – public works, railways and the Tata Steel Works – to provide a more detailed investigation of the „work culture“ of engineering, including important insights about how notions of race shaped practices of recruitment and remuneration and how these played out differently in the state and private sector. For example, Ramnath

¹Greg Downey, *Virtual Webs, Physical Technologies, and Hidden Workers: The Spaces of Labor in Information Internetworks*, in: *Technology and Culture* 42 (2001), pp. 209–235, here p. 211.

shows that one crucial difference between Indianization as implemented by the colonial state with regard to the railways and the Tata Steel Works was that the latter was „largely an internal process, driven more by concerns of economy than by political demands“, among them intensifying calls for the nationalization of railway lines run by companies (p. 229). Furthermore, like in the case of public works, the colonial state proved very reluctant to „Indianize“ the upper echelons of the service, more so because of the strategic importance of railways for defence and military purposes. Such considerations, Ramnath points out, were less important in the case of the private industry, an aspect also reflected in the specifics of the work culture itself: while public works functioned predominantly within a colonial paradigm that regarded engineers as „gentlemen generalists“ (pp. 114–123) – according to which it was Indian character that was found to be lacking, rather than their technical expertise – Tata Steel Works prized „specialists with practical knowledge, stamina, and willingness to work with their hands“ (p. 229). This did not mean, however, that physical attributes did not play a role in the recruitment of Tata’s engineers or that the process of recruitment was less elitist. But it did mean that the company was able to eschew to a certain extent the reliance on colonial institutions, most notably by drawing on extra-imperial expertise – American, German and French – in crafting its own engineering culture and setting up an alternative avenue for schooling those engineers, as demonstrated by the establishment of Tata’s Jamshedpur Technical Institute in 1921 (p. 184).

Overall, this is a well-written and convincing narrative, one that certainly deserves to be widely read and will hopefully inspire similar studies of the problems it discusses. The one objection that might be raised is that at times the emphasis on an opposition between an „internal“, economic logic and a political logic in explaining processes of Indianization across state and privately managed spheres of activity might be read as painting a more egalitarian and politically insulated picture of the private industry than it actually was (and, judging by countless contemporary accounts,

continues to be). Racial prejudice against Indians, for example, was not a British-specific problem, but also an American one, as Ramnath’s own account suggests (e.g. p. 188). Similarly, differential rates of pay for Indians and Westerners who performed the same job, whether for the colonial state or the private sector (p. 201), were another powerful indicator of the structural inequalities that beset work relations and came to a head, for example, in the strikes that hit Tata in the 1920s. Not without relevance, on some occasions those disturbances were quelled by appeal to the repressive apparatus of the colonial state. Finally, the colonial government’s own policies were shaped by a complex combination of political and economic imperatives, perhaps best reflected in its pervasive preoccupation with cost-cutting at almost all levels of activity. Put differently, rather than pitching the domains of the economic and the political against each other, the book would have benefited from a more explicit recognition of and thorough engagement with their long-lasting and complicated entanglement. This is, however, a minor charge that does not detract from the overall quality of this study.

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