

## William Beinart and Saul Dubow, *The Scientific Imagination in South Africa: 1700 to the Present*

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*The Scientific Imagination in South Africa* is an erudite, eminently readable work by historians William Beinart and Saul Dubow. The book offers a *longue durée* history of scientific activity in southern Africa since the mid-seventeenth century, when ‘the Cape and subsequently all of South Africa became part of an expanded global imaginary’ (p. 1). Exploring an extensive array of diverse scientific practices in southern Africa, Beinart and Dubow establish ‘the importance of scientific research in the region ... the importance of the region in some branches of scientific work ... [and] the inescapable necessity of understanding the impact of science and technology in South African history’ (p. 28). Throughout the book, the authors pay close attention to the ways in which science was ‘imbricated in the exercise of power’ (p. 3), revealing both how science was at times deployed in the service of colonialism and apartheid and, distinctly, how colonialism and apartheid shaped the production of scientific knowledge. However, the authors’ demonstration of the ubiquity of scientific activities in South Africa’s history challenges commonplace assumptions in African studies about science’s exclusive function as a tool of empire. Rather, Beinart and Dubow show how the sciences in South Africa have been and continue to be ‘enormously diverse, often relatively autonomous of colonial institutions and power, and even exciting and inventive’ (p. 25).

The book begins in the eighteenth-century Cape Colony, following the itineraries and observations of several scientific travellers who journeyed along the routes opened by colonial expansion. Delving into their accounts of southern Africa, Beinart and Dubow reveal how ‘local knowledge was absorbed into their texts and provided an important source for their attempts at scientific understanding’ (p. 30). The authors then examine changes to scientific practices as the Cape shifted to British control at the start of the nineteenth century. They reveal how the sciences – particularly astronomy, botany, geology, archaeology and medicine – became increasingly intertwined with British colonial institutions, such as learned societies, libraries, museums and botanical gardens. As the authors explain, ‘institutions became important loci of colonial knowledge and self-awareness ... [and] gave expression to an assertive sense of colonial pride and respectability’ (p. 106). Beinart and Dubow emphasize how connected southern Africa was to European and global scientific endeavours in the eighteenth and nineteenth centuries; indeed, as they point out, ‘every vessel going from Europe to the Indian Ocean, Asia or Australasia passed, and generally stopped at, a South African port’ (p. 105). Thus, as they show, South Africa became an important nexus in a developing global eighteenth- and nineteenth-century scientific imaginary.

The third chapter, which focuses on the late nineteenth century’s ‘decades of intense conflict and imperial assertion’ (p. 109) by Britain, reveals the impacts of South Africa’s agricultural and mineral revolutions on the region’s political conditions and vice versa. Exploring the industrial production of firearms, animal husbandry, diamond and gold mining, railway construction and veterinary and human medicine, the authors show

that, unlike in earlier periods, 'science and technology were an intrinsic element in colonial power' between 1870 and 1902 (p. 154).

The next two chapters examine scientific activities between the establishment of the Union of South Africa in 1902 and the official implementation of apartheid in 1948. Here, the book explains how science, 'in the guise of efficiency and progress' (p. 155), informed pre-apartheid segregation discourses and politics. It pays close attention to the foundation of new national scientific institutions, which were modelled on British equivalents but came to characterize 'a self-governing state' (p. 160). The book explores how scientific rhetoric was deployed for global and domestic political purposes by the Anglophile statesman Jan Smuts, for whom 'international statesmanship, institution-building, and scientific advance were powerfully conjoined' (p. 193). The authors present a detailed history of the state's investment in different scientific endeavours and their impact both locally and internationally in the first half of the twentieth century, prior to the country's increasing isolation under apartheid. Parallel to its discussion of state-directed science, the fifth chapter also brings to light efforts by the African National Congress and its president, the practising doctor Alfred B. Xuma, to promote social medicine and include black communities in scientific and medical training.

The sixth chapter, on the sciences during apartheid, shows that the 'government sought to adapt rather than disrupt industrial development; it took considerable care to cement international links, especially where economic and strategic interests were at play' (p. 264). The authors explain the ways in which the apartheid regime sought to articulate a 'techno-nationalist' domestic policy, with a strong emphasis on developing self-sufficiency in light of growing international condemnation, and heavily funded research into military technology.

The final chapter explains how the 'African Renaissance', promoted by the second democratically elected president, Thabo Mbeki, once again transformed the scientific imagination in South Africa. The authors explore the similarities and differences between Mbeki's 'mobilisation of science and philosophy in pursuit of patriotism and developmental progress and the white South Africanism expounded by Jan Smuts' (p. 320). They examine the interplay – at times productive and at others destructive – between modern science and Indigenous knowledges, focusing especially on Mbeki's promotion of 'Big Science' astronomical projects and on his complex yet ultimately damaging approach to the HIV/AIDS crisis.

In summary, *The Scientific Imagination* makes an important contribution to ongoing debates in the global history of science. Challenging the 'flattening' tendencies of the discipline, which often overlooks the power differences between different knowledge-producing agents, the authors highlight 'fluidity and hybridity where this can be demonstrated, yet remain alert to power differentials in knowledge systems and to blockages in exchange' (p. 24). As such, the book's analysis of historical scientific practices constitutes an excellent exemplar for historians seeking to examine how both local conditions and global forces shaped the production, use and reception of scientific knowledge in colonial and postcolonial contexts.

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