

Book review forum

Dialogues in Human Geography
1–4


© The Author(s) 2023



Article reuse guidelines:

sagepub.com/journals-permissionsjournals.sagepub.com/home/dhg

Making margins visible

Reviewed by: Thomas Simpson , University of Warwick, tom.simpson@warwick.ac.uk

DOI: 10.1177/20438206231212030

I will use this commentary to draw out some elements of Lachlan Fleetwood's book that I briefly highlighted in a previous, more conventional review article (Simpson, 2023a). But first, I want to reiterate the main take-away from that review: *Science on the Roof of the World* is an essential work not only for historians of colonial South Asia and scholars of mountain spaces but also for all historical geographers and historians of science interested in how global claims emerge from the shakiest (and most slippery) of foundations.

Fleetwood's analysis of images is exemplary. Through extended captions, he avoids ever letting the rich visual practices of his colonial protagonists be reduced to merely illustrative material. He instead shows how diagrams, drawings, and maps were essential constituents of knowledge of and in the Himalaya. Images did work that words could not. At no point, however, does he slip into equating visuals and power, in the fashion of Bruno Latour's (1987) concept of 'immutable mobiles' or the New History of Cartography's couching of maps as weapons of the already dominant (e.g. Harley, 2001). Rather, he positions pictures as fragile attempts to establish authority or advance arguments, often in opposition to claims themselves constituted substantially through pictures. One of Fleetwood's most striking interventions in this vein is his reading of Alexander von Humboldt – the early nineteenth century's most feted field

scientist and, not coincidentally, its most prominent visual innovator – as a figure whose significance was much disputed by British colonialists in the Himalaya. The claim that Humboldt was as much as anything an 'impediment' (p. 37) to those doing science on the roof of the world is a powerfully iconoclastic interpretation grounded partly in deft iconographic analysis. In showing how his subjects did things with images, Fleetwood seems to me a worthy successor to historian of geology Martin Rudwick's pioneering insistence in the 1970s that 'visual modes of communication are...essential for the historical analysis and understanding of scientific knowledge' (Rudwick, 1976: 149).

A notable feature of the images considered in *Science on the Roof of the World* is that they are not only the polished and published means of communicating scientific results and theories. Just as often, they are depictions of field sciences in action. My favourite is an 1853 watercolour of 'Women coolies', on which Fleetwood comments: 'the artist's decision to feature these women is in contrast with the more limited visibility usually given to women's labour in the written accounts from this period'. Here, despite the different power relations resulting from the distinct genre, I was put in mind of Ariella Azoulay's notion that the photograph 'exceeds any presumption of ownership or monopoly and any attempts at being exhaustive...[S]ome other player's presence can be discerned through it, constructing the social relations that allowed its production' (Azoulay, 2008: 11–12). By making good on his promise in the book's introduction to illuminate the roles of Asian actors by 'pay[ing] close attention to the practical, everyday aspects of doing science in remote locations' (pp. 29–30), Fleetwood shows how,

contrary to conventional postcolonial wisdom, colonial archives – especially visual ones – contain multitudes. In this respect, the book belongs alongside Erik Mueggler's *The Paper Road* (2011), another work that brilliantly illuminates the intricacies of Euro-Western image- and knowledge-making in the liminal spaces of upland Asia. Fleetwood's lucid insights into the 'politics of bodily comparison' (p. 100), in which Europeans fashioned themselves and their knowledge of altitude physiology with reference to their Himalayan guides and porters, take forward Mueggler's notion that 'acts of vision are...always embedded in social fields of vision, composed of intersections of multiple pairs of eyes...The visibility to others of one's own gazing body is constitutive of one's gaze' (Mueggler, 2011: 60).

Science on the Roof of the World successfully combines a social constructionist account of 'the vertical globe' – showing how metrics of altitude and its effects were peculiar to expansionist European imperialism – with a materialist account of insurmountable challenges of high places. The compelling analysis of *Bis* – a noxious vegetable gas supposed to be the cause of altitude sickness – is, in Fleetwood's words, 'on the one hand the genealogy of a colonial story', and, on the other, a tale of 'the way that altitude sickness operated as a "friction of terrain"' (p. 111). He manages to intertwine these two registers without letting them become confused in part because of clever use of 'aberrance' as an analytical category. The Himalaya were materially different in consequential ways, but the peculiar array of value judgements that attached to their differences were distinctly colonial and constituted the mountains as 'aberrant and marginal places' (p. 239). Marginality, he reminds us, did not mean irrelevance. The Himalaya were arenas not of 'information famines', in Chris Bayly's (1996: 97) famous formulation of colonial frontiers, but of scientific innovation. Information flows into and out of the mountains may have been marked by 'unevenness' (p. 7), but Fleetwood convincingly demonstrates how marginality was as much a strategy as an impediment for colonial actors. 'Travellers', he tells us, 'exaggerated the idiosyncrasy of their

surroundings, either to excuse their failings or to leverage their ability to overcome these difficulties and produced authoritative knowledge' (p. 9). His identification of the prevalence of this phenomenon in the early 1800s prompts me to rethink my past suggestion that the construction of India's frontiers as a 'reverse heterotopia' – that is, a zone of 'productive tensions' – was primarily a feature of later nineteenth century high imperialism (Simpson, 2021: 7).

In closing these comments, I want to consider the features of *Science on the Roof of the World* that I have highlighted – engaged visual analysis, a focus on the practical elements of field sciences, and the notion of mountains as both socially constructed *and* materially robust entities – in relation to a region beyond the book's scope: the Eastern Himalaya. Doing so speaks to Fleetwood's use of James C. Scott's (2009) theorising, asking how useful 'Zomia' is as an analytical category for colonial science. The eastern Himalaya has some distinct geophysical features relative to the rest of the range. 'Being closer to tropical latitudes', environmental scientist Maharaj K. Pandit points out, it 'developed into [a] "region of extreme relief" due to swifter melting of snow and ice, which carved an extensive network of drainage channels. [Arguably,] the region's highly dissected mountain morphology is the reason behind the wide-ranging species diversity in taxa such as *Rhododendron*' (Pandit, 2017: 7). The monsoon is more intense too, further embedding rugged topography and species diversification. Closer alignment between the west and east of the range exists, however, in the chronology of colonial geopolitics. British expansion into Kumaon and Garhwal, key regions of Fleetwood's study, occurring approximately a decade before the invasion of Assam in the mid-1820s. There is little doubt that images played every bit as important a role colonial expansion in and around the eastern Himalaya as it did further west. Maps, although initially patchy and speculative, were the major desideratum of colonial administrators and scientists. Just as the tributaries of the Ganges were the cartographic focus in Kumaon and Garhwal, those of the Brahmaputra were in the uplands around Assam (Simpson, 2023b). In both areas, forays

out of riverine valleys and into the surrounding mountains were relatively infrequent and arduous and were couched in British visual and written representations as heroic undertakings. Local intermediaries were similarly often occluded in these representations despite being relied upon in practice. Scientific instruments went wrong every bit as frequently, requiring (and enabling) cunning acts of repair.

But the distinct scale and form of the mountains and rivers, and the absence of snow and ice and vastness of rivers in the eastern Himalaya, generated very different forms of ‘the friction of terrain’. Altitude sickness and frozen passes were replaced further east by fevers and unnavigable torrents. The ‘politics of bodily comparison’ in the mountains around Assam involved not only tests of hill-walking stamina but also large-scale violence. While botany was a subject of equally intense focus in both regions, in the east, it centred on distinctive species such as rhododendrons and distinctive processes of transplanting tea. Vegetation was notable there for its overwhelming abundance in humid valleys rather than its troubling paucity on arid plateaus on the northwest Himalaya. In place of a geology focused on fossils was one concerned with coal and petroleum. Despite these significant distinctions, marginality was a colonial construct as much as it was an objective encumbrance in the eastern Himalaya just as further west. These, too, were spaces of trade, religious devotion, and political contestation that were anything but ‘aberrant’ to inhabitants and Asian travellers. But, unlike in the western and central Himalaya, the form of aberrance that colonial personnel mapped onto these regions was not one in which difference was vertically oriented. Beyond a basic division of ‘hills’ and ‘plains’, altitudinal zones mattered less among the generally lower ridges and peaks in the east. Instead, great significance was attached to the social and environmental fragmentation produced by the choppy, steep-sided river valleys. In notable contrast to the tendency of colonial personnel to ‘lump’ people in the western Himalaya into a few broad categories, further east there was a tendency to split communities into innumerable tribes and clans. In the colonial imagination, the eastern Himalaya’s

aberrance lay in its fractal rather than vertically layered quality (Sadan, 2013).

This attempt to apply some of Fleetwood’s thinking to the eastern Himalaya does not pretend to be anything more than a hasty first effort at demonstrating how *Science on the Roof of the World* deserves to inspire new histories of uplands, of colonial science, and of global imaginations. As the opening sentences state clearly and the remainder of the work amply justifies, ‘this is a book about science, and how it changed the shape of mountains. It is also a book about how mountains changed the shape of science’ (p. 1). Many more books that answer to this description should follow in its wake.

Declaration of conflicting interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Thomas Simpson  <https://orcid.org/0000-0002-5992-3948>

Reference

- Azoulay A (2008) *The Civil Contract of Photography*. New York: Zone Books.
- Bayly CA (1996) *Empire and Information: Intelligence Gathering and Social Communication in India, 1780-1870*. Cambridge: Cambridge University Press.
- Harley JB (2001) *The New Nature of Maps: Essays in the History of Cartography*. Baltimore: Johns Hopkins University Press.
- Latour B (1987) *Science in Action: How to Follow Scientists and Engineers through Society*. Cambridge: Harvard University Press.
- Mueggler E (2011) *The Paper Road: Archive and Experience in the Botanical Expedition of West China and Tibet*. Berkeley: University of California Press.
- Pandit MK (2017) *Life in the Himalaya: An Ecosystem at Risk*. Cambridge: Harvard University Press.

- Rudwick MJS (1976) The emergence of a visual language for geological science 1760–1840. *History of Science* 14: 149–195.
- Sadan M (2013) *Being and Becoming Kachin: Histories Beyond the State in the Borderworlds of Burma*. Oxford: Oxford University Press.
- Scott JC (2009) *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*. New Haven: Yale University Press.
- Simpson T (2021) *The Frontier in British India: Space, Science, and Power in the Nineteenth Century*. Cambridge: Cambridge University Press.
- Simpson T (2023a) Lachlan Fleetwood, Science on the roof of the world: Empire and the remaking of the Himalaya. *Isis* 114(1): 206–207.
- Simpson T (2023b) Find the river: Discovering the Tsangpo-Brahmaputra in the age of empire. *Modern Asian Studies*: 1–36.
-