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HISTORIOGRAPHICAL REVIEW

MODERN MOUNTAINS FROM THE ENLIGHTENMENT TO THE ANTHROPOCENE*

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ABSTRACT. *Recent scholarship across a range of historical sub-disciplines shows that uplands are where many forms of modernity are both crafted and overwhelmed. Maintaining multiple tensions – between assimilation and distinction, between projections of power and material and human resistance, and between knowledge and elusiveness – is essential to the modernities crafted in mountain spaces. This review highlights a number of common threads running through recent writings on modern mountains. These include heightened attention to the importance of mountains as arenas for the performance of gendered, racial, national, and class-based subjectivities, and the persistence of earlier attitudes and activities in avowedly disenchanted modern visions of uplands. For all of the successes of recent scholarship, more work remains in order to consider mountains in global contexts and to come to terms with our continued entanglement in modern ways of understanding and acting in high places. Looking ahead, it is vital that historians think with and about mountains in order to contribute positively and persuasively to discussions on the human and environmental impacts of global change.*

I

Shortly before he died on Mount Everest in 1924, one of the most famous modern mountain-men of all, George Mallory, possibly uttered his most famous words. Mallory told a press conference in New York that the world's highest peak was worth climbing 'because it's there'.[1] In her book on mountaineering cultures of the high Himalaya, anthropologist Sherry B. Ortner gives a new twist to Mallory's statement, proposing that it was far from the robustly

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[1] For details of this episode, see Wade Davis, *Into the silence: the Great War, Mallory and the conquest of Everest* (London, 2012), pp. 465–6.

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matter-of-fact assertion of man against mountain that has been conventionally assumed.[2] Rather than imagining it being delivered with a casual wave of the hand and at high tempo, we might better understand the stakes of modern mountaineering if we think of Mallory's words issuing in deliberative fashion, each more emphatic than the last. 'The "there" of Everest', Ortner puts to us, 'contrasts with the "here" of the modern.'[3] Yet as Ortner acknowledges and many recent histories of diverse upland spaces around the world confirm, mountains' significance within modern imaginaries and practices rely on a fine balance, or rather perpetual oscillation, between subsuming and distinguishing. Mountains are quintessential products of modernity even as, and precisely because, they figure as its limit and its other. Whether or not the whole thing was merely the invention of an American journalist eager for a natty line, we should perhaps imagine that Mallory at once said 'because it's there' and 'because it *is there*'.

Maintaining indeterminacy towards Mallory's delivery illuminates a key trend in historical work of the past two decades on mountains. Uplands are now widely understood as spaces in which many variants of modernity are both crafted and challenged. The works considered in this historiographical review have adopted various understandings of 'modernity' and 'the modern'. Many recent publications pluralize these definitions and subject them to explicit critical analysis, whereas older work often tacitly supposed that modernity is a singular and straightforward concept.[4] In order to allow these differences to emerge, I will impose only a minimal definition of modernity as any project or way of thinking that is predicated on distinction from a previous era. In keeping with recent scholarship, the review will not suggest that 'mountains' are characterized by intrinsic material form or content, but are defined in contrast to surrounding areas in ways that include but almost always go beyond vertical difference.[5] As will emerge throughout this review, the latest works on modern histories of mountains collectively suggest that upland spaces and peoples provide those who seek to 'make it new' with the productive tensions that they require: the

[2] Peter L. Bayers critiques Mallory's words as a key instance of occluding the 'masculine imperial and anti-imperial ideologies [that] fuel the impetus to climb a mountain': Peter L. Bayers, *Imperial ascent: mountaineering, masculinity, and empire* (Boulder, CO, 2003), p. 15. For an alternative reading, see Edwin Bernbaum's claim that Mallory's response gained traction because of its 'intriguing, Zen-like nature': Bernbaum, *Sacred mountains of the world* (San Francisco, CA, 1994), p. 238.

[3] Sherry B. Ortner, *Life and death on Mt. Everest: Sherpas and Himalayan mountaineering* (Princeton, NJ, 1999), p. 39.

[4] On these trends in historical and humanities scholarship more broadly, see Shmuel Eisenstadt, 'Multiple modernities', *Daedalus*, 129 (2000), pp. 1–29; Frederick Cooper, *Colonialism in question: theory, knowledge, history* (Berkeley, CA, 2005), pp. 113–50; Dipesh Chakrabarty, 'The muddle of modernity', *American Historical Review*, 116 (2011), pp. 663–75.

[5] Bernard Debarbieux and Gilles Rudaz, *The mountain: a political history from the Enlightenment to the present*, trans. Jane Marie Todd (Chicago, IL, 2015), p. 14; Denis Cosgrove and Veronica della Dora, 'Introduction: high places', in Denis Cosgrove and Veronica della Dora, eds., *High places: cultural geographies of mountains, ice and science* (London, 2009), pp. 1–16, at p. 1.

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resistance without which there is no power; the disarray without which there is no order; the archaic without which there is no modern. Whether as locales of science, politics, or adventure (which, although dealt with in separate sections below, are far from mutually exclusive activities), high places across the globe have often functioned as multivalent heterotopias, spaces of otherness.[6] At times, they have been imagined as pure and natural in opposition to the filth and artifice of urban civilization; at others, they have figured as jumbled and overawing in distinction to stultifying and predictable lowland society.

This review will show that recent studies of conceptions of and interactions with mountains across the globe over the past few centuries tell us something significant about modernities. The historian of mountaineering Peter Hansen's claim that 'modernity can only ever be performed, not achieved' holds good across varied specific manifestations detailed in the works considered in this review.[7] Scholars have shown that mountains function as key spaces of modern schemes when and where they provide credible challenges. They act as hinterlands of partial state penetration and national self-definition, proving grounds for the physical and cerebral qualities of highly selective elites, and locales of laborious knowledge production. Many moderns have dreamt of flattening the great pinnacles of the earth in ideational terms, of melting into air these proverbially solid topographical features.[8] Often, their aspirations have fallen short, and when they have succeeded, the overwhelming majority have felt flat and have sought to re-establish verticality. As surely as varied modernities have come to define mountains, so the enduring presence of mountains has shaped many modernities.

The remainder of the review starts by considering older historiographical perspectives on mountains as arenas of modernity and assessing the continued significance of these outlooks. The bulk of the review is comprised of three further sections, each of which focuses on a burgeoning field of historical scholarship within which mountains have become increasingly prominent during the past few decades. The first of these sections looks at historians of science who have turned to uplands as privileged but challenging spaces of knowledge production. The second assesses historical work on mountains as politicized spaces, examining how themes of nationalism and state resistance have become prominent in recent scholarship. The third addresses studies of mountaineering and climbing, often taken to be quintessential modern activities in upland arenas, and shows how dialogues with theories from post-colonialism and gender studies have revitalized this field. The review concludes by looking ahead and

[6] On the concept of 'heterotopia', see Michel Foucault, 'Of other spaces', trans. Jay Miskowiec, *Diacritics*, 16 (1986), pp. 22–7.

[7] Peter H. Hansen, *The summits of modern man: mountaineering after the Enlightenment* (Cambridge, MA, 2013), p. 15. See also Veronica della Dora, *Mountain: nature and culture* (London, 2016), p. 108.

[8] My terminology here is adapted from Marshall Berman, *All that is solid melts into air: the experience of modernity* (London, 1982).

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arguing that historians should build on recent attempts to use studies of mountains to intervene in pressing debates on environmental issues.

II

Critical analyses of previous attitudes towards and activities in mountains first developed as a means of defining modern attitudes towards and activities in these spaces. In other words, the historiography of mountain spaces is not only co-extensive with modern modernities but a necessary constituent of them. Mountains loomed large as eighteenth-century savants, including the predominantly Alps-based Horace-Bénédict de Saussure, 'burst the limits of time' in terms of advancing a new conception of the earth's deep history.[9] Extending the age of the planet was bound up in another temporal act: distinguishing a present in which mountains are spaces of significance and action from a past in which they were spaces of horror and avoidance. As Veronica della Dora contends in her wide-ranging overview book *Mountain: nature and culture*, mountains thereby 'shaped modern perceptions of time and history'.[10] From these beginnings, there emerged through nineteenth-century writings a dominant framework for understanding the history of mountain spaces, many core features of which remained largely unchallenged until the late twentieth century.[11] A canon of European (and later Western) men was positioned at the forefront of innovating modern imaginings of mountains against a backdrop of superstition and backwardness. Excepting a few scattered but important precursors, such as the Italian man of letters Francesco Petrarch for his claimed ascent on Mont Ventoux in 1336 and the Swiss scholar Conrad Gessner for his celebrations of mountain climbing in the sixteenth century, this was represented as a phenomenon originating in the eighteenth and nineteenth centuries.[12]

English-language texts in particular claimed that members of the British middle and upper classes took the lead in mountain modernity during the Victorian era. The advent of climbing for climbing's sake rather than as a means of gathering knowledge or fulfilling spiritual aspirations was represented as the culmination of trends towards greater engagement with mountain regions. The celebratory tone of this Whiggish narrative is unsurprising given that, until well into the twentieth century, most historical accounts of uplands

[9] Martin J. S. Rudwick, *Bursting the limits of time: the reconstruction of geohistory in the age of revolution* (Chicago, IL, 2005), pp. 15–21, 641–2.

[10] Della Dora, *Mountain*, p. 140.

[11] See, for example, Leslie Stephen, *The playground of Europe* (London, 1871); W. A. B. Coolidge, *The Alps in nature and history* (London, 1908); G. R. de Beer, *Early travellers in the Alps* (London, 1930); Ronald Clark, *The Victorian mountaineers* (London, 1953); Claire Eliane Engel, *Mountaineering in the Alps: an historical survey* (London, 1971).

[12] In this vein, Peter H. Hansen effectively argues that William Windham's 'discovery' of Mont Blanc in 1741 'has served as a foundation myth in narratives of mountaineering and modernity': Hansen, *The summits of modern man*, p. 33.

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were authored by people with a keen (and often professional) interest in mountaineering. These writings also posited a collection of counterpoints or opponents to modern attitudes, including 'primitive mountain inhabitants', women, and the lower classes.[13] Perhaps the most influential and infamous pejorative rendering of those beyond the pale of the modern mountaineering elite appeared in Leslie Stephen's *The playground of Europe* (1871). Stephen was a writer and leading figure in what he and other authors constructed as the British-led 'Golden Age' of climbing during the mid-Victorian period. His book served as travel memoir, ode to mountaineering, and historical overview of attitudes towards the Alps. It also excoriated women, upland inhabitants, and the 'innumerable tourists [who] have done all they can to cocknify (if that is the right derivative from cockney) the scenery'.[14] Stephen separated attitudes to mountains into 'the Old School' and 'the New School' and claimed that 'the dividing line may be drawn around 1760', lending precision to the already established trend of understanding the later eighteenth century as a time of rupture.[15] Mysticism and horror, coupled with a lack of refined sensibility and acute observation, were among the main features of Stephen's 'Old School'.[16] Cerebral and bodily exertion precipitated the transition to 'the New School', revealing the mountains to be 'superlatively beautiful objects'.[17] In keeping with most historical accounts of mountain attitudes and activities published before the later twentieth century, Stephen at times proposed and extolled a definite break between pre-modern and modern eras.[18]

Yet, to read *The playground of Europe* as a simple tale of disenchantment and progress as some recent historians have been wont to do omits the ways in which 'the Old School' and 'the New School' were complicated and partly interwoven categories.[19] For one thing, Stephen did not understand the transition to be a result of positive progress alone. The corrosive effects of urbanization and industrial modernity were part of the story: it was only when 'unsophisticated nature' was made scarce that it became valued.[20] For another, as was the case with other authors that harnessed historical schemes to normative accounts of modernity, Stephen constructed mountains as objects that were never fully subjugated by the rational and athletic efforts of modern men like himself. Mountains remained, he avowed, active and communicative presences with a 'language' of their own. Their message required immersively engaged

[13] Quotation from Coolidge, *The Alps*, p. 75; see also Engel, *Mountaineering in the Alps*, p. 24.

[14] Stephen, *The playground of Europe*, pp. 354–5.

[15] Ibid., pp. 44–5.

[16] Ibid., pp. 1–39.

[17] Ibid., pp. 40–78; quotation at p. 41.

[18] See, for example, Gavin de Beer's distinction in 1930 between 'early travellers' and the 'modern standpoint' in de Beer, *Early travellers*, pp. vii–viii.

[19] At one point, Peter Hansen reads *The playground of Europe* in this way: Hansen, *The summits of modern man*, pp. 7–8.

[20] Stephen, *The playground of Europe*, p. 32.

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rather than coolly removed human interlocutors – 'true worshippers' in Stephen's notably religious phrasing – and took the form not of hard data and 'bare mathematical units' but of intense revelation.[21] Here, as in much of what Stephen's fellow mountaineer-author Douglas Freshfield called 'the enormous moraine of mountain literature' that accumulated from the second half of the nineteenth century, nature and culture were both distinguished and intermingled.[22] Finally, a great deal of this literature suggested that survivals or adapted features from pre-modernity were crucial parts of modern mountain imaginaries. For instance, Stephen proposed that the 'monsters and demons' that 'old travellers' thought resided in the uplands were another expression of the 'sense of awe which we describe by calling the mountain itself sublime and beautiful'.[23] New and old, pre-modern and modern, were substantially entangled.

The remainder of this review focuses on what we might think of as a 'New School' of mountain histories that has developed from diverse sources and has taken varied directions during the past few decades. Writings of the nineteenth and twentieth centuries, including *The playground of Europe*, not only provide source material for recent scholarship but also form an 'Old School' from which this scholarship asserts its critical distance. Yet, like Stephen and his historiographical ilk, this new divide between old and new – this fresh attempt to instantiate a present by proclaiming a break from the past – is fraught and partial. Just as mountain modernities are never pristine ruptures but rather recapitulate and recast elements of what went before, so our own post- or anti-modern critiques perhaps 'never quite overcome' our objects of criticism.[24]

I see the distinction between the present-day 'New School' and what came before in the historiography of mountain spaces as having four main aspects, which will be fleshed out during the rest of this review. First, recent scholarship is in general committed to problematizing elements that older accounts tended to celebrate, including masculinity, racial-civilizational schemas, and nation- and empire-building. Second, most scholars of the history of mountain spaces now draw extensively on fields such as post-colonialism and gender studies in order to view historical attitudes to mountains through a critical lens. Third, since ground-breaking work in the mid-twentieth century by the likes of Fernand Braudel (whose *The Mediterranean and the Mediterranean world in the*

[21] Ibid., pp. 359–71.

[22] Douglas W. Freshfield, 'On mountains and mankind', *Geographical Journal*, 24 (1904), pp. 443–60, at p. 452. At this point, I depart from Bernard Debarbieux and Gilles Rudaz's claim that since the eighteenth century mountains have been placed decisively apart from culture and on the side of nature: Debarbieux and Rudaz, *The mountain*, pp. 15–16. On the simultaneous assertion and blurring of the nature/culture divide in modernity, see Bruno Latour, *We have never been modern*, trans. Catherine Porter (Cambridge, MA, 1993), pp. 10–11.

[23] Stephen, *The playground of Europe*, pp. 24–5.

[24] The concept of 'never quite overcoming' as a way of thinking shifts between the pre-modern, modern, and post-modern appears in Judith Butler, 'Revisiting bodies and pleasures', *Theory, Culture & Society*, 16 (1999), pp. 11–20.

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age of Philip II famously stated that 'Mountains Come First') and Marjorie Hope Nicolson (whose *Mountain gloom and mountain glory* theorized and historicized sublime aesthetics), mountains have gradually entered mainstream academic humanities scholarship.[25] The history of mountaineering no longer holds the near-monopoly on analyses of past dealings with mountains that it had until the mid-twentieth century, and has itself been reconfigured into a vibrant field in dialogue with broader trends in the humanities. Fourth, much recent scholarship explicitly works to advance the conception that modernity is not a singular entity but rather the ever-changing, constantly contested, messy processes that bubble up from competing agendas for innovation. Earlier work tended, often tacitly, to endorse the view that modernity was a singular process emanating from the West that entailed the erasure of 'traditional' distinctions.

Despite these points of difference between recent and older scholarship, continuities persist. While many historians highlight the localized and contingent cultures and activities of moderns in high places, others (and sometimes the same historians in other places in their texts) critique modernity as a set of monolithic values and structures. When doing so, they merely flip the moral valence of the bundle of prejudicial attitudes they suppose moderns enacted in the mountains – such as racism, misogyny, and ecological violence – without giving adequate space to contestations of and paradoxes within these attitudes. Some instances of this shortcoming are discussed in the sections that follow. Getting away from the roll-call of great men and great mountains constructed in previous work has also occasionally proven difficult. Men of science from the decades either side of the turn of the nineteenth century such as Horace-Bénédict de Saussure and Alexander von Humboldt, and the climbers of the British-dominated 'Golden Age', still appear frequently. They are not always relativized as people of their times and places as consistently as might be hoped. Likewise, the Alps and North American uplands often figure as preponderant and normative mountain spaces, especially in work on global mountain imaginaries. Focusing on other people and other spaces is firmly on the agenda of many historians, but undoubtedly remains a work in progress in the face of powerful survivals from the past.

Historiographical survivals are not necessarily negative, however. As Peter Hansen notes in his book on the cultures and politics of climbing Mont Blanc, *The summits of modern man: mountaineering after the Enlightenment*, one compelling reason to stay with old writings is that they contain much that can be put to use at a time when new attitudes are needed. Hansen proposes that the more spiritualized elements of Leslie Stephen's approach to mountains in *The playground of Europe* might be read as a precursor to the imperative to think seriously

[25] Fernand Braudel, *The Mediterranean and the Mediterranean world in the age of Philip II*, trans. Sian Reynolds (Berkeley, CA, 1972; orig. edn 1949), pp. 25–53; Marjorie Hope Nicolson, *Mountain gloom and mountain glory: the development of the aesthetics of the infinite* (Ithaca, NY, 1959).

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about mountains – or as Hansen puts it, to 'think like a mountain' – in the Anthropocene.[26] What Hansen does here is, in my opinion, akin to what Stephen did in suggesting the 'the Old School's' demons and monsters were precursors to 'the New School's' sense of awe. Both find allies in the era they critique, and in doing so suggest that the past and the present are less homogeneous and less securely distinct eras than conventionally thought. As I will claim in the concluding section, recent histories of mountain spaces have done much to reveal the diversity and contingency of various modernities. In order to give meaning and urgency to global environmental crises, scholars in arts and humanities need to participate in the collective work of telling better stories.[27] Scholars of the history of mountain spaces are well positioned to unearth notions of nature and the non-human as active presences worth caring about, rather than passive stuff that humans could or should exploit with impunity. Even the most bombastic and interventionist modern schemes in mountains have tended to contain a sense of the uncanniness of these gigantic features.[28] Engaging deeply with the complex histories of mountain modernities holds out unusual promise for comprehending the lineage of extant environmental concepts and innovating ways to address present global challenges.[29]

III

Over the past twenty years, historians of science have started exploring higher altitudes. Their work goes beyond the long-acknowledged truth that scientific endeavours were vital aspects of those forays into the European Alps in the later eighteenth century that have been represented as the first modern mountain activities. Instead, these historians show that mountains have inflected knowledge in significant ways and that scientific enterprises have been crucial to how mountains are defined.[30] A 'spatial turn' in the history of science, which is attentive to the ways in which practices and theories 'bear the stamp of the environments within which they are constructed', is a major influence

[26] Hansen, *The summits of modern man*, p. 28.

[27] Nayanika Mathur, 'The task of the climate translator', *Economic and Political Weekly*, 52 (2017), pp. 77–84; Amitav Ghosh, *The great derangement: climate change and the unthinkable* (Chicago, IL, 2016); Dipesh Chakrabarty, 'The climate of history: four theses', *Critical Inquiry*, 35 (2009), pp. 197–222.

[28] On the significance of the uncanny in narratives of climate change, see Ghosh, *The great derangement*, p. 30.

[29] For a similar programme in the history of political thought, see Katrina Forrester and Sophie Smith, eds., *Nature, action and the future: political thought and the environment* (Cambridge, 2018).

[30] Michael S. Reidy, 'The most recent orogeny: verticality and why mountains matter', *Historical Studies in the Natural Sciences*, 47 (2017), pp. 578–87.

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on these scholarly journeys into upland areas.[31] The resulting studies focus not only on mountains as objects of study but also as privileged spaces in which scientists have sought to glean terrestrial and extraterrestrial truths. As Charlotte Bigg, David Aubin, and Philipp Felsch put it in a 2009 overview of mountain sciences, 'the mountain is both the *where* and the *what* of scientific investigations. It is simultaneously the scientific workplace and the object of study.'[32]

Whether the peaks are objects or locations of knowledge, one feature widely evident in recent histories of mountain sciences has been tensions between, on one hand, the circumscribed and specific nature of mountain spaces and, on the other, the production of knowledge claims that aspire to universal truth. In a range of locales and junctures from the eighteenth century to the present day, construing mountains as exceptional has been simultaneously necessary to and problematic for their status as scientific spaces. Some recent work, such as a 2009 special issue of the journal *Science in Context*, probes the ways in which mountains have been conceptualized as laboratories.[33] This scholarship addresses a key question in the history of science since at least the 1980s: how did circumscribed laboratory spaces come to be understood as privileged locations for the production of valid knowledge?[34] In relation to uplands, this focus is driven partly by actors' categories, especially de Saussure's 1779 characterization of the Alps as 'the laboratory of nature'.[35] The notion that mountains were invaluable arenas for the derivation of wider truths did not necessarily require such explicit pronouncements and was not specific to the Alps in the late eighteenth century. Nicky Reeves shows that the extreme conditions of a Scottish mountainside, when paired with a credible observer and instrumentation, were seen in the 1770s to have 'allowed universal truths to be revealed' about gravitational attraction.[36] Instances of the assumed epistemological distinction of upland areas multiplied to the point that 'mountain-as-laboratory' became 'commonplace' during the nineteenth century and spread across continents, especially into the Americas.[37]

[31] Charles W. J. Withers and David N. Livingstone, 'Thinking geographically about nineteenth-century science', in Charles W. J. Withers and David N. Livingstone, eds., *Geographies of nineteenth-century science* (Chicago, IL, 2011), pp. 1–20, at p. 1. See also David N. Livingstone, *Putting science in its place: geographies of scientific knowledge* (Chicago, IL, 2003).

[32] Charlotte Bigg, David Aubin, and Philipp Felsch, 'Introduction: the laboratory of nature – science in the mountains', *Science in Context*, 22 (2009), pp. 311–21, at p. 314.

[33] *Science in Context*, 22, 3 (2009).

[34] This question is famously posed and pondered in Steven Shapin and Simon Schaffer, *Leviathan and the air pump: Hobbes, Boyle, and the experimental life* (Princeton, NJ, 1985).

[35] Horace-Bénédict de Saussure, *Voyages dans les Alpes* (1779), quoted in Bigg, Aubin, and Felsch, 'The laboratory of nature', p. 317.

[36] Nicky Reeves, '"To demonstrate the exactness of the instrument": mountainside trials of precision in Scotland, 1774', *Science in Context*, 22 (2009), pp. 323–40, at p. 325.

[37] Bigg, Aubin, and Felsch, 'The laboratory of nature', p. 317.

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A number of recent studies go beyond a 'mountain-as-laboratory' paradigm and suggest how mountains are spaces that unsettle and rework conventional distinctions between 'lab' and 'field' sciences.[38] K. Maria D. Lane's *Geographies of Mars: seeing and knowing the red planet* provides an exemplary model of how such an approach can enhance our understanding of knowledge of, and in, high places.[39] Lane's book focuses on the Martian 'canal sensation' during the decades either side of the turn of the twentieth century, when landscape features on Mars became the focus of intensive debate in much of Europe and North America, especially regarding whether they were indicative of intelligent life. Lane shows that terrestrial mountainous locations were key influences on both the production and reception of claims about Mars. The 'canal sensation' was entangled with a transition from low- to high-altitude astronomical observatories, particularly in the United States.[40] Although the qualities of mountain air were often cited as a central rationale for this shift to higher slopes, romanticist descriptions and depictions of jagged peaks and vertiginous valleys were equally integral components in establishing epistemic authority. Stories and images of remoteness, sublimity, and manly labour tended to trump quantitative optical data. Lane argues that astronomers' perceived reliability rested on casting their operations at altitude in the mould of explorer-pioneers, drawing on widely established tropes of heroism in high mountains.[41] Rugged individualism went hand-in-hand with rugged aesthetics. In spaces represented as upland wildernesses, astronomy became 'a kind of field geography'.[42] For its practitioners, 'the higher, the more remote, the more rugged, and the more sublime, the better'.[43]

Lane's deft and sensitive analysis represents a pinnacle for a series of interconnected trends that can be discerned more generally among recent histories of mountain sciences. One such trend is to investigate how representations of observational practices in high places generally sought to sustain a productive tension between, on the one hand, a regulated gaze commonly taken to be a hallmark of modern scientific methods, and, on the other, embodied and improvised actions often assumed to be antithetical to reliable knowledge production.[44] As Bigg, Aubin, and Felsch put it, 'scientists are often immersed in the mountain while they often strive to objectively detach themselves from

[38] Vanessa Heggie, 'Why isn't exploration a science?', *Isis*, 105 (2014), pp. 318–34; Jeremy Vetter, 'Rocky mountain high science: teaching, research, and nature at field stations', in Jeremy Vetter, ed., *Knowing global environments: new historical perspectives on the field sciences* (New Brunswick, NJ, 2011), pp. 108–34, at p. 109.

[39] K. Maria D. Lane, *Geographies of Mars: seeing and knowing the red planet* (Chicago, IL, 2011), p. 17.

[40] Ibid., p. 66.

[41] Ibid., pp. 97–139.

[42] Ibid., p. 107.

[43] Ibid., p. 95.

[44] Ibid., pp. 92–3.

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it'.[45] This tension is evident in Bruce Hevly's 1996 account of Alpine glaciology in the mid-Victorian era, a field of knowledge with a large public following in Britain. Interest was sustained by fierce contests between competing theories of glacial motion in which accounts of physically laborious fieldwork experiences were essential to establishing credibility.[46] In Hevly's memorable phrase, this was '"muscular science,"…analogous to the "muscular Christianity" of nineteenth-century Britain'.[47] As such, it fits into a broader tendency revealed in scholarship on mountain sciences from the Alps to the Himalaya to the Andes, and from de Saussure's time into the twentieth century: gathering knowledge presupposed intimate entanglements of knowing subject and known object.[48] The separation of observer and observed, often reckoned to be a foundational feature of modern sciences, tended to blur at altitude.

A second productive tension in mountain sciences suggested in Lane's work and borne out in other recent literature is the enduring figure of mountains as distinctive and pure, yet connected spaces. As Lane's analysis of high observatories indicates and Joshua Nall's study of telegraphic news and the Martian 'canal sensation' confirms, discursive constructions of uplands as isolated were partially contradicted by the very media and infrastructures necessary to popularize this notion among lowland audiences.[49] This points to a more general truth: scientific disciplines that conceived of mountains as privileged epistemological spaces shared a 'persistent tension between the requirements of isolation and communication'.[50] Writing about the troubled establishment of the Harvard College Observatory in the Andes during the 1880s and 1890s, Catherine Nisbett Becker reminds us of the important point that altitude was not merely a discursive construct in mountain sciences.[51] She insists that the vertical displacement from the mountainside observatory to the valley below posed challenges to maintaining the types of disciplinary 'control at a distance' necessary for credible knowledge that were far more significant than the horizontal separation of Peru from Massachusetts. She also points out that connectivity was

[45] Bigg, Aubin, and Felsch, 'The laboratory of nature', p. 314.

[46] Bruce Hevly, 'The heroic science of glacier motion', *Osiris*, 11 (1996), pp. 66–86; on the importance of narratives of physical hardship in British endeavours in the early nineteenth-century Himalaya, see Lachlan Fleetwood, '"No former travellers having attained such a height on the Earth's surface": instruments, inscriptions, and bodies in the Himalaya, 1800–1830', *History of Science*, 56 (2018), p. 6.

[47] Hevly, 'The heroic science', p. 84.

[48] For example, Sarah W. Tracy, 'The physiology of extremes: Ancel Keys and the International High Altitude Expedition of 1935', *Bulletin of the History of Medicine*, 86 (2012), pp. 627–60; Fleetwood, '"No former travellers"'; Heggie, 'Why isn't exploration a science?', p. 319.

[49] Joshua Nall, 'Constructing canals on Mars: event astronomy and the transmission of international telegraphic news', *Isis*, 10 (2017), pp. 280–306.

[50] Bigg, Aubin, and Felsch, 'The laboratory of nature', p. 316.

[51] Catherine Nisbett Becker, 'Professionals on the peak', *Science in Context*, 22 (2009), pp. 487–507.

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a two-way problem: 'men on the mountain…had to trust that their clarity and honesty would not be lost in transit to Cambridge'.[52]

Becker's analysis is among those that allow us to contest Jon Mathieu's contention in his book on 'the globalisation of perception' of mountain spaces, *The third dimension: a comparative history of mountains in the modern era*, that uplands did not substantially inflect knowledge production. Mathieu argues that 'the specialized research fields themselves…for the most part produced the lens through which an area was observed and laboratory work was undertaken…The mountains were subject to a disciplinary grid that continually altered and shifted.'[53] On this point, I side with Becker: scientific practitioners in various fields perceived that mountains impacted their activities and did not merely implement pre-formed practices and theories. Plenty of scope remains for extending Becker's and Lane's arguments beyond astronomy in the Americas around the turn of the twentieth century, and tracing the dynamic inter-relations (rather than deterministic linkages) between the material peculiarities of other high places, the ways in which they were represented, and the forms of knowledge produced there. More should be done to understand how mountains move sciences just as sciences move mountains.

Geographies of Mars conceives of mountains as spaces of unusually intensive entanglements of aesthetic, physical, and scientific practices: 'as mountains came to be seen in art and literature as places of transcendence and divinity, they also came to be seen in science as sites of purity and vision'.[54] Recent scholarship confirms that mountain modernities rarely, if ever, relied on compartmentalizing distinct forms of knowledge. Instead, as Bigg, Aubin, and Felsch comment, 'hybrid' populations gathered on mountains and undertook 'a diversity of pursuits…bound by underlying common values: masculinity, nationalism, and a fascination for extraordinary landscapes and physical exploits nurtured by the literary or artistic outpourings of previous generations'.[55] We might again consider Hevly's account of mid-Victorian glaciology, in which climbers such as Edward Whymper and artists such as John Ruskin intervened in debates on glacial motion by championing and bolstering particular geologists' theories.[56] Daniel Speich's work on cartography in nineteenth-century Switzerland provides a different instance of this phenomenon. Speich shows how an entangled bundle of aesthetic attitudes, technocratic techniques, representational modes, and political priorities generated a novel 'concern' for mountains that 'gave rise to the mountain as a matter of fact'.[57] There seems, then, to be significant

[52] Ibid., pp. 489–90.

[53] Jon Mathieu, *The third dimension: a comparative history of mountains in the modern era*, trans. Katherine Brun (Cambridge, 2011), p. 37.

[54] Lane, *Geographies of Mars*, p. 79

[55] Bigg, Aubin, and Felsch, 'The laboratory of nature', pp. 314–15.

[56] Hevly, 'The heroic science', pp. 73–5.

[57] Daniel Speich, 'Mountains made in Switzerland: facts and concerns in nineteenth-century cartography', *Science in Context*, 22 (2009), pp. 387–408, at p. 389.

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analytical value in conceiving of mountain moderns as 'hybrids' straddling and crossing boundaries often more rigorously enforced, in rhetorical terms at least, in the lowlands.

A further way in which mountains can be understood as destabilizing the package of features conventionally assumed to be integral to modern science (and modernity more broadly[58]) is the challenge they pose to vision. Clear vision has been widely conceived as an integral element of gleaning scientific truth, with sight enjoying sensory primacy in modern ways of knowing.[59] The uplands, and in particular high peaks, have often promised unparalleled fields of sight affording unique opportunities for knowledge gathering and spatial mastery. Yet they could also pose unusually strong impediments to sight, in the form of clouds, steep valleys, and perplexing topographies, as well as threatening vision's sensory primacy through demanding an unusual degree of embodied labour.[60] As Ann C. Colley and Lachlan Fleetwood have suggested, the gigantic Himalaya had a particular tendency to overwhelm any stable sense of the imperial gaze's mastery during the nineteenth and twentieth centuries.[61] Some recent scholarship has joined older literary works in celebrating what the Scottish writer Nan Shepherd termed the 'queer but invigorating' forms of vision at altitude.[62] Jan von Brevern's article on nineteenth-century photographer Aimé Civiale's series of large panoramic images collectively covering 'almost all of the high Alps' is a case in point. Von Brevern argues that Civiale's photographs were premised not on exactness and objectivity, but on an undefined promise 'to bring out the unexpected' – that is, to be useful in ways that could not be specified or predicted in advance.[63] Mountains were, then, extraordinary visual spaces in which quintessentially modern technologies and modalities of sight were widely understood to have great potential but also met with severe challenges.

[58] Jonathan Crary, *Techniques of the observer: on vision and modernity in the nineteenth century* (Cambridge MA, 1990).

[59] See, for example, Sumathi Ramaswamy, 'Introduction: the work of vision in the age of European empires', in Sumathi Ramaswamy and Martin Jay, eds., *Empires of vision: a reader* (Durham, NC, 2014), pp. 1–24; Denis Cosgrove, *Geography and vision: seeing, imagining and representing the world* (London, 2008).

[60] Lane, *Geographies of Mars*, p. 137; Robert Macfarlane, *Mountains of the mind: a history of a fascination* (London, 2003), p. 156; della Dora, *Mountain*, pp. 107–38; Thomas Simpson, '"Clean out of the map": knowing and doubting space at India's high imperial frontiers', *History of Science*, 55 (2017), pp. 3–36.

[61] Ann C. Colley, *Victorians in the mountains: sinking the sublime* (Farnham, 2010), pp. 9, 224; Fleetwood, '"No former travellers"'.

[62] Nan Shepherd, *The living mountain* (Edinburgh, 1979), p. 101.

[63] Jan von Brevern, 'Counting on the unexpected: Aimé Civiale's mountain photography', *Science in Context*, 22 (2009), pp. 409–37. On the visual experiences associated with panoramic images more generally, see Charlotte Bigg, 'The panorama, or la nature a coup d'œil', in Erna Fiorentini, ed., *Observing nature – representing experience: the osmotic dynamics of romanticism 1800–1850* (Berlin, 2007), pp. 73–95; Stephan Oettermann, *The panorama: history of a mass medium*, trans. Deborah Lucas Schneider (New York, NY, 1997).

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In the past decade, a number of historians of science have detailed how the emphasis on the body that frequently accompanied doubts over the capacity of vision not only inflected ideas of how to know aspects of the external world, but also became the subject of its own field of inquiry. Mountain physiology, the study of bodily functions and capacities in high places, developed throughout the nineteenth century in conjunction with (often tentative) notions that the body could be used as an instrument of measurement and perception.[64] As historian Philipp Felsch shows, mountain physiology was another manifestation of the 'hybrid' activities of moderns on mountains, emerging especially in conjunction with *fin de siècle* European concerns with corporeal fallibility. A number of Felsch's arguments are contentious, however. He posits a relatively sharp transition in the mid-nineteenth century from a 'contemplative' sublimity to embodied concerns and claims that the British did not share these anxieties as they 'stood contrary to the proud athletic ideals of English mountaineering'.[65] In fact, romanticism persisted as an important strand of British cultures of mountaineering in the late nineteenth century, and notions of bodies at risk contributed to the perceived heroism of climbing.[66] Physiological investigations represented a development of sublime aesthetics rather than a departure, with fragile bodies tested by awesome landscapes.

Vanessa Heggie's and Sarah W. Tracy's analyses of the subsequent phase of mountain physiology during the late nineteenth and twentieth centuries take us full circle back to the notion of mountains as laboratories with which this section opened.[67] Focusing on Europeans in the Alps and the Himalaya, Heggie shows that physiologists directly counterposed mountains to lowland labs as sites of knowledge production and generally came to favour the 'high-altitude fact' generated in 'unreplicable' upland locales over 'the fact created in sea-level laboratories'.[68] Tracy similarly shows how in 1930s America metropolitan laboratories came to be understood as inferior to 'climatic heroism' on the part of researcher-participants in the Andes. These men compared their own bodily capacities with those of upland inhabitants to produce knowledge

[64] On body-as-instrument in upland spaces during the earlier nineteenth century, see Dorinda Outram, 'On being Perseus: new knowledge, dislocation, and enlightenment exploration', in David N. Livingstone and Charles W. J. Withers, eds., *Geography and enlightenment* (Chicago, IL, 1996), pp. 281–94, at pp. 287–9; Fleetwood, '"No former travellers"', p. 8.

[65] Philipp Felsch, 'Mountains of sublimity, mountains of fatigue: towards a history of speechlessness in the Alps', *Science in Context*, 22 (2009), pp. 341–64, at pp. 357–8.

[66] David Robbins, 'Sport, hegemony and the middle class: the Victorian mountaineers', *Theory, Culture & Society*, 4 (1987), pp. 579–601; Michael S. Reidy, 'Mountaineering, masculinity, and the male body in mid-Victorian Britain', *Osiris*, 30 (2015), pp. 158–81; Elaine Freedgood, *Victorian writing about risk: imagining a safe England in a dangerous world* (Cambridge, 2000), pp. 99–131.

[67] Vanessa Heggie, 'Experimental physiology, Everest and oxygen: from the ghastly kitchens to the gasping lung', *British Journal of the History of Science*, 46 (2013), pp. 123–47; Tracy, 'The physiology of extremes'.

[68] Heggie, 'Experimental physiology', pp. 132, 146.

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of 'normal' human physiology.[69] Twentieth-century mountain physiology, mid-Victorian glaciology, high-altitude observatory culture in turn-of-twentieth-century America, and Himalayan surveying during the age of empire all shared a conception that upland spaces demanded embodied, labour-intensive experience rather than the removed modes of observation and compilation associated with both laboratory spaces and 'armchair' theorizing.[70] Recent scholarship has indicated that many moderns valued uplands precisely because they were *not* – or at least, not consistently – laboratory-like, ordered heterotopias. Contrary to established notions of modern ways of knowing, sciences of and on mountains tended to configure their sites as spaces in which the potential for disorder and danger were the very qualities that valorized observers and validated data.

IV

It is only within the past few decades that historians have seriously interrogated the importance and peculiarities of mountains as spaces of science. Much the same can be said of the historiography of mountains as spaces of politics. In his 1949 book *The Mediterranean and the Mediterranean world in the age of Philip II*, Fernand Braudel famously proclaimed of the uplands that ring the 'Middle Sea' that 'their history is to have none, to remain almost always on the fringe of the great waves of civilization'.[71] Although revolutionary in many other respects, here Braudel's work followed a well-established trend of conceiving of uplands as timeless and without history and politics.[72] A host of recent studies shows that, on the contrary, mountains have become deeply politicized spaces and objects, especially under the influence of the interventionist technologies and expansionist impulses of modern states. In itself, this is nothing new: even Braudel recognized the extension into the uplands of 'the immense weight of modern administration'.[73] What marks out the best work of the past two decades in this area is attention both to the variety of and competition between political schemes applied to mountains, and to the ways in which the exigencies of mountain regions have reshaped these schemes. These two features push firmly against any notion of modernity as singular and globally uniform.

One of the most productive focal points of recent histories of mountain politics is the 'nationalization' of uplands. Oliver Zimmer's 1998 analysis of the means by which the Alps became the national symbol of Switzerland is a pioneering study in this field. Zimmer argues that between the late eighteenth century and the end of the Second World War, the Alps were configured as

[69] Tracy, 'The physiology of extremes', quotation at p. 630.
[70] Hevly, 'The heroic science', p. 66.
[71] Braudel, *The Mediterranean* p. 34.
[72] See, for example, Coolidge, *The Alps*, p. 75.
[73] Braudel, *The Mediterranean*, p. 40.

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central to the Swiss nation in two distinct ways. Until c. 1870, the mountains were understood as a unifying force binding together the heterogeneous elements of Swiss society, a process he terms 'the nationalization of nature'. Against the backdrop of ethno-linguistic nationalism elsewhere in Europe, from c. 1870 what Zimmer calls 'the naturalization of the nation' took over: Alpine landscape was portrayed as determining Swiss national character, overcoming linguistic diversity in doing so.[74] Subsequent work by Bernard C. Schär has extended this analysis, suggesting that Swiss self-representations as a mountain nation relied on a global framework taking in exploration in tropical regions, rather than being confined to the Alps alone.[75]

In the case of this famously mountainous country, a major task for historians is to show that, in Zimmer's words, 'there was nothing inevitable about the Alps becoming Switzerland's most salient national symbol'.[76] But scholars looking at other countries have productively adopted and adapted Zimmer's terminology of 'nationalizing' mountains. Work by, among others, Marco Armiero on Italy and Lee Wallace Holt and Tait Keller on Germany and Austria highlights the First World War as a vital moment in the nationalization of mountains in western and central Europe.[77] The decades prior to the outbreak of conflict saw in this region an expansion of interest in mountains, but the tenor of this interest shifted from an inclusive vision of uplands as spaces of freedom to what Keller terms 'national fantasies of conquest and victory'.[78] Especially in Italy, conflict prompted radically enhanced interference in the Alps, which charged the mountains with patriotic meaning and launched large-scale infrastructural incursions that persisted long after military action drew to a close.[79] Historians have begun to recognize that war provides impetus for reimagining and materially reinscribing the national significance of upland areas well beyond Europe, as in recent studies on the impact of militarized tensions between India and China on the populations and environments of the

[74] Oliver Zimmer, 'In search of natural identity: Alpine landscape and the reconstruction of the Swiss nation', *Comparative Studies in Society and History*, 40 (1998), pp. 637–65.

[75] Bernard C. Schär, 'On the tropical origins of the Alps: science and the colonial imagination of Switzerland, 1700–1900', in Patricia Purtschert and Harold Fischer-Tiné, eds., *Colonial Switzerland: rethinking colonialism from the margins* (London, 2015), pp. 29–49.

[76] Zimmer, 'In search of natural identity', pp. 637–8.

[77] Marco Armiero, 'Nationalizing the mountains: natural and political landscapes in World War I', in Marco Armiero and Marcus Hall, eds., *Nature and history in modern Italy* (Athens, OH, 2010), pp. 231–50; Marco Armiero, *A rugged nation: mountains and the making of modern Italy: nineteenth and twentieth centuries* (Cambridge, 2011); Lee Wallace Holt, 'Mountains, mountaineering and modernity: a cultural history of German and Austrian mountaineering, 1900–1945' (Ph.D. diss., Texas, 2008); Tait Keller, 'The mountains roar: the Alps during the Great War', *Environmental History*, 14 (2009), pp. 253–74.

[78] Keller, 'The mountains roar', p. 254.

[79] Armiero, 'Nationalizing the mountains'.

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Himalaya.[80] In turn, war has often looked very different in mountains. For instance, the reliance on individual soldiers in the Alps during the First World War was clearly distinct from the mechanized techniques of trench warfare.[81] National identities have also tended to be changed in mountains just as projects of nationalization altered upland spaces and communities. Italy provides a good example: here, the First World War left a legacy of perceiving the Alps as 'the repository of a valuable genetic and environmental heritage'.[82]

From the late nineteenth century, mountains beyond the confines of Europe were nationalized in varied ways. Susan B. Schrepfer's book *Nature's altars: mountains, gender, and American environmentalism* shows how uplands became increasingly influential in the United States as the previously expanding western frontier was declared closed around the turn of the twentieth century.[83] The mountains were so important as an American national space that they were subjected to legislative intervention throughout the twentieth century that designated them 'wilderness'. These initiatives on the part of the federal government embedded masculine conventions of sublimity and 'removed native and pastoral peoples and designated the heights as sites of recreational use, scientific study, and aesthetic inspiration'.[84] Recent work by Kären Wigen shows that partially comparable undertakings took place in Japan from the 1890s, with mountains serving as focal points for schemes of national renewal rooted in masculine norms that balanced athleticism and contemplation.[85] Unlike their contemporaries in the United States, *fin de siècle* Japanese advocates of mountain-based nationalism were responding in part to fears of interference from Western imperial powers. Turning to the mountains was part of what one leading figure at the time described as the need for Japan to become 'the Britain of the East'.[86] Scholarship by the likes of Sarah W. Tracy on the significance of the Andes in South American *indigenismo* identities during the 1930s and Jong-Heon Jin on the Paektudaegan mountain range as a marker of Korean autonomy and unity in the late twentieth century is indicative of the widespread and ongoing importance of uplands as means of asserting anti-colonial forms of national distinctiveness.[87] Recent work on nationalization

[80] Maharaj K. Pandit, *Life in the Himalaya: an ecosystem at risk* (Cambridge, MA, 2017), pp. 163–88; Bérénice Guyot-Rechard, *Shadow states: India, China and the Himalayas, 1910–1962* (Cambridge, 2017).

[81] Armiero, 'Nationalizing the mountains', p. 235.

[82] Ibid., pp. 238–9.

[83] Susan B. Schrepfer, *Nature's altars: mountains, gender, and American environmentalism* (Lawrence, KA, 2005).

[84] Ibid., quotation at p. 2.

[85] Kären Wigen, 'Discovering the Japanese Alps: Meiji mountaineering and the quest for geographical enlightenment', *Journal of Japanese Studies*, 31 (2005), pp. 1–26.

[86] Shiga Shigetaka, quoted in Wigen, 'Discovering the Japanese Alps', pp. 10–11.

[87] Tracy, 'The physiology of extremes', pp. 651–6; Jong-Heon Jin, 'Paektudaegan: science and colonialism, memory and mapping in Korean high places', in Cosgrove and della Dora, eds., *High places*, pp. 196–215.

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shows that, contrary to Braudel's suggestion, mountain politics are not limited to the unilateral impositions of lowland states, but instead entail dynamic interactions encompassing local actors and global trends as well as national specificities.

Perhaps the most influential recent historical study of uplands – and the clearest refutation of mountains as spaces without politics – is James C. Scott's *The art of not being governed: an anarchist history of upland Southeast Asia.*[88] As well as focusing on the area studies-busting region of Zomia, Scott uses mountains as a figure of the anarchist resistance to the state that he advocates. 'The massif', he proposes, 'has signified the basic political choice confronting much of mankind.'[89] Scott's is a *longue durée* argument, and in this sense, as well as in his notion of environmental agency, he is a successor to Fernand Braudel.[90] But he sharply criticizes the suggestion that uplands' relative inaccessibility means that 'their history is to have none'.[91] Instead, he insists on the entwined nature of mountain spaces and the agency of their inhabitants and suggests that hill populations and their cultures are results of deliberate attempts to evade 'the oppressions of state-making projects in the valleys'.[92] Although not the only areas suited to such evasion, mountain regions are especially significant because of the challenges their terrain poses to the introduction of state strategies of control, extraction, and surveillance.

Given that his account of Zomia is not only spatially capacious but also relatively timeless in its suggestion of long-running processes of interaction and flux, what does Scott make of governmental modernities in the mountains?[93] He repeatedly states that his model does not hold good for the later twentieth century, the period of 'the world's last great enclosure' culminating in 'a fully occupied world'.[94] This process, driven by an amalgam of conceptions of state sovereignty, 'distance demolishing technologies', and late capitalism's rapacious demand for resources,[95] lends the analysis an elegiac tone, underpinned by a sense of much-lamented loss. Scott's analysis is at its best when it recognizes that many lowland agents of modernity share, and directly inform,

[88] James C. Scott, *The art of not being governed: an anarchist history of upland Southeast Asia* (New Haven, CT, 2009).
[89] Ibid., p. 325.
[90] Ibid., pp. 51–4.
[91] Braudel, *The Mediterranean*, p. 34; Scott, *The art of not being governed*, p. 329. See also Jon Mathieu, 'The European Alps – an exceptional range of mountains? Braudel's argument put to the test', *European Review of History: Revue européenne d'histoire*, 24 (2017), pp. 96–107, at pp. 96–7.
[92] Scott, *The art of not being governed*, p. ix. For a critique of Scott as excessively environmentally determinist, see Sara Shneiderman, 'Are the central Himalayas in Zomia? Some scholarly and political considerations across time and space', *Journal of Global History*, 5 (2010), pp. 289–312.
[93] For a sensitive critique of Zomia as insufficiently attuned to internal variations, see Jean Michaud, 'Editorial – Zomia and beyond', *Journal of Global History*, 5 (2010), pp. 187–214.
[94] Scott, *The art of not being governed*, pp. 282, 324.
[95] Ibid., p. 11.

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at least some of his qualms about the cultural and political flattening of hill regions.[96] There is, he argues, a 'semiotic need' for 'barbarian' others in order for the 'civilizing center…to have any real meaning'.[97] Scott acknowledges that when this delicate balance is upset, not only local people but also 'reflective' lowlanders bemoan the loss.[98] This line of analysis accords with one of the most compelling suggestions in recent work on uplands as spaces of science and of adventure: mountains assume vital importance in modern schemes insofar as they figure as enduring limit points.

Scott's emphasis on the extreme effects of high imperialism and national expansion on uplands as political and cultural spaces enables his valuable insight into what we might think of as moderns' extreme ambivalence in the mountains. But it comes with the significant flaw of exaggerating the degree to which lowland agendas came by the later twentieth century to dominate hill regions across the world. Scott does not sufficiently acknowledge that many highlands and their communities remain areas of partial and exceptional forms of state sovereignty. The upland fringes of the Indian subcontinent provide multiple cases of how state penetration of mountains remains patchy and problematic. The continued viciousness of domestic 'counter-insurgency' campaigns in north-east India and international ones in the Afghan–Pakistan borderlands may indicate modern states' military capacities, but they also evidence their limited reach.[99] Even though drone images flatten rugged terrain and enable a new form of killing, efforts to normalize state interventions in the mountains have often foundered against reasserted verticality by resisting populations.[100] Mountains and their people remain, in many cases, thorns – or in anthropologist Akbar Ahmed's term for Pashtun uplanders, 'thistles' – in the side of states capable of historically unprecedented projections of influence.[101] They still sap the energy and legitimacy of great powers, forcing states into material and moral dead-ends. They also continue to provide these states with (in the words of the poet Constantine Cavafy, quoted by Scott) 'a kind of solution': the alibis and rationales for the formulation of exceptions without which self-proclaimed civilizations might lack meaning and military-industrial complexes might lack purpose.[102] Many people now tend to flee not to proximate

[96] Especially Scott's near namesake, James George Scott, an administrator in colonial Upper Burma, whom he cites approvingly on multiple occasions throughout *The art of not being governed*.

[97] Scott, *The art of not being governed*, pp. 105–16.

[98] Ibid., p. 335.

[99] On north-eastern India, see Sanjib Baruah, *Durable disorder: understanding the politics of northeast India* (New Delhi, 2005).

[100] On the optics of drone warfare, see Derek Gregory, 'From a view to a kill: drones and late modern war', *Theory, Culture & Society*, 28 (2011), pp. 188–215.

[101] Akbar Ahmed, *The thistle and the drone: how America's war on terror became a global war on tribal Islam* (New Delhi, 2013).

[102] Constantine Cavafy, 'Waiting for the barbarians' (1914), quoted in Scott, *The art of not being governed*, p. 98.

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hills but across continents and seas to avoid states' demands (and failures); but despite the colossal advances in state technologies, mountain terrain often retains some friction.

If we admit the continued importance of uplands as spaces of political resistance, we might say that ours is an age in which two kinds of 'mountaineer' exist. Until the later nineteenth century, 'mountaineer' was a pejorative term for supposedly recalcitrant upland dwellers, before transitioning to denote people who climbed peaks.[103] Until the later twentieth century, these two groups were described as opposites, and the transition between them acted as a marker of increased penetration of uplands by avowedly modern outsiders.[104] Related to this was the disqualification of uplanders from being mountaineers in the later sense: they were instead relegated to lower categories such as 'porters' and 'guides'.[105] Recent works on mountain politics and climbing during periods of modern state expansion suggest that the dynamics between the two types of 'mountaineer' are more entangled. They attest to broader complexities within mountain modernities, including the inadequacy of positing a temporal rupture between internally coherent pre-modern and modern epochs and the need instead to acknowledge overlapping 'orders of time'.[106] As Bernard Debarbieux and Gilles Rudaz demonstrate in *The mountain: a political history from the Enlightenment to the present*, uplanders were curiously ambivalent figures in modern imaginaries, by turns denigrated as developmentally backward, unsanitary, and irredeemable others and vaunted as models of cultural purity and physicality.[107] The mountaineers to whom this review now turns – those who climb mountains – have also had uneasy relationships with mainstream cultural and political modernities. They are commonly thought to constitute the summit of national and imperial endeavours and normative visions of masculinity and heroism, but many have been among civilization's most intractable discontents. Historians have recently shown that climbing mountaineers, every bit as much as their erstwhile namesakes, can be both emblems and opponents of the modern.[108]

V

Histories of mountaineering have proliferated in recent years. Many of these works have looked to fields such as post-colonialism and gender studies to formulate critically engaged stances. In this respect, they contrast with earlier

[103] Debarbieux and Rudaz, *The mountain*, pp. 29–33.

[104] For example, Engel, *Mountaineering in the Alps*, p. 24.

[105] Bigg, Aubin, and Felsch, 'The laboratory of nature', p. 315; Hansen, *The summits of modern man*, pp. 120, 136, 153.

[106] On the concept of 'orders of time', see François Hartog, *Regimes of historicity: presentism and experiences of time*, trans. Saskia Brown (New York, NY, 2015).

[107] Debarbieux and Rudaz, *The mountain*, pp. 72–88.

[108] Ibid., p. 72.

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studies which, as Peter Hansen writes, were 'frequently…histories with the politics left out'.[109] Yet the best of the recent work on mountaineering does more than view climbing as the rehearsal of pre-existing and monolithic power dynamics. Instead, it shows that mountains tended to be spaces of contestation and ambiguity. Hansen's *The summits of modern man* draws on Shmuel Eisenstadt's idea of 'multiple modernities' to tease out the variable stakes of telling stories from the eighteenth century to the present day about reaching the top of Mont Blanc, western Europe's highest peak.[110] In his earlier work, Hansen suggested that European mountaineering developed a form of modernity that went against Weberian notions of rationality, secularization, and disenchantment, instead ambivalently combining 'mountain conquest with mountain worship'.[111] *The summits of modern man* goes further, convincingly demonstrating that the distinct social, political, and intellectual rationales and subjectivities of pioneering climbers in the late eighteenth-century Alps meant that even when they made it to the top together, 'they [did] not necessarily occupy the same summit position'.[112] It also shows how these early ascents were afterwards persistently reworked, with competing visions of what it meant to be modern 'chang[ing] the "facts" of the first ascent of Mont Blanc'.[113]

Joseph E. Taylor's study of twentieth-century Californian climbing cultures and notions of environment, *Pilgrims of the vertical: Yosemite rock climbers and nature at risk*, is prominent among the studies that indicate how mountaineering's multiple modernities extended well beyond Europe's Alps. Taylor goes further than Hansen in arguing that even the motives and practices of individual climbers tended to be fragmented, drawing on 'different values at different times'.[114] Mysticism jostled with secularization, and romanticized notions of dissolving the self intermingled with pronouncements of heroic conquest. That inconsistencies go all the way down, being as discernible within individuals as between groups, is linked in Taylor's analysis to 'tensions of modernity', especially the tendency for developed societies to undercut the markers of value and attainment upon which they were founded.[115] This contention serves as a useful corrective to Hansen's intermittent tendency to suggest (and then to critique) the internal coherence of particular visions of mountaineering.[116]

[109] Hansen, *The summits of modern man*, p. 8.

[110] Eisenstadt, 'Multiple modernities'.

[111] Peter H. Hansen, 'Modern mountains: the performative consciousness of modernity in Britain, 1870–1940', in Martin Daunton and Bernhard Rieger, eds., *Meanings of modernity: Britain from the late Victorian era to World War II* (Oxford, 2001), pp. 185–202, at pp. 186–8.

[112] Hansen, *The summits of modern man*, p. 117.

[113] Ibid., pp. 269–70.

[114] Joseph E. Taylor III, *Pilgrims of the vertical: Yosemite rock climbers and nature at risk* (Cambridge, MA, 2010), pp. 57–8.

[115] Ibid., p. 17.

[116] A pertinent example is his reading of *The playground of Europe* as the archetype of 'narratives of secularization and disenchantment', and prescription 'to recognize our multiple modernities and provincialize' the likes of Stephen: Hansen, *The summits of modern man*, p. 11.

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A number of other recent histories of mountaineering reinforce and deepen the notion that climbing has comprised a heterogeneous (and often competing) range of activities and attitudes. For instance, work on British mountaineering in the Himalaya has indicated how it articulated varied, and often partially contestatory, versions of empire, even as it relied thoroughly on infrastructures of imperial dominance.[117] And while it is beyond doubt that mountaineering has tended to be entwined with markers of masculinity, Taylor has suggested that gendered patterns of distinction and exclusion came behind dynamics premised on race and nation.[118] As Clare Roche demonstrates, women were active climbers and, equally importantly, formed substantial audiences for representations of climbing, from the earliest days of its expansion around the turn of the nineteenth century.[119] Women in the western United States were, as Susan Schrepfer establishes, at the forefront of advancing a 'feminine sublime' that had a substantial impact on adventure and environmentalist cultures.[120] Recent scholarly attention to women mountaineers highlights a multiplicity of motives and receptions, ranging from explicit statements of gender equality to clear disavowals of the same. This work also shows the continued strong conceptual association of mountaineering with masculinity.[121] A number of scholars have, however, unpacked moments in which mountains acted as key locations for the fragmentation of existing masculine identities and the formulation and performance of new ones.[122] As Michael Reidy reveals, late Victorian British climbers developed a version of ascetic manliness rooted in wiry physiques, their bodily and social distinctiveness often defined in relation to brawnier, less cerebral guides.[123] Japanese mountaineers around the turn of the twentieth century also focused on remaining 'gentlemanly' by avoiding excessive muscularity.[124] Recent histories show how mountaineering was deeply

[117] Bayers, *Imperial ascent*, pp. 75–97; Davis, *Into the silence*; Peter H. Hansen, 'Vertical boundaries, national identities: British mountaineering on the frontiers of Europe and the empire, 1868–1914', *Journal of Imperial and Commonwealth History*, 24 (1996), pp. 48–71; Peter H. Hansen, 'The dancing lamas of Everest: cinema, orientalism, and Anglo-Tibetan relations in the 1920s', *American Historical Review*, 101 (1996), pp. 712–47.

[118] Taylor, *Pilgrims of the vertical*, p. 7.

[119] Clare Roche, 'Women climbers, 1850–1900: a challenge to male hegemony?', *Sport in History*, 33 (2013), pp. 236–59.

[120] Schrepfer, *Nature's altars*, pp. 67–95, 101–25, 181–207.

[121] Hansen, *The summits of modern man*, pp. 172–4; Maurice Isserman and Stewart Weaver, *Fallen giants: a history of Himalayan mountaineering from the age of empire to the age of extremes* (New Haven, CT, 2008), pp. 424–7; Taylor, *Pilgrims of the vertical*, pp. 6, 223; Ortner, *Life and death on Mt. Everest*, pp. 217–47.

[122] On anthropologists' use of practice and performance as a means of mediating between systemic constraints and individual autonomy and change, see Sherry B. Ortner, 'Theory in anthropology since the sixties', *Comparative Studies in Society and History*, 26 (1984), pp. 126–66, at pp. 144–57.

[123] Reidy, 'Mountaineering, masculinity', p. 174.

[124] Wigen, 'Discovering the Japanese Alps', p. 24.

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imbued with gendered norms, but also reconfigured these norms, meaning that they differed substantially between mountain spaces and over time.

Ideals of asceticism frequently went beyond bodily ideals, becoming major factors in debates over 'fair play' and the role of technological aids in climbing. Joseph Taylor, along with other historians such as Kerwin Lee Klein in work on mountaineering in the Italian Dolomites during the early twentieth century, show that judgements of how to climb 'properly' varied between situated contexts and depended on attempts to achieve distinction within specific climbing communities.[125] When and where climbing seemed too easy, techniques and tools were adapted in ways that deliberately 'nurtured uncertainty'.[126] And what Klein terms 'new ways of seeing and moving' – that is, innovative aesthetic and athletic standards – contributed to the acceptance and further development of particular equipment.[127] Such a focus on contingency and dynamic contexts is one of the features common to the most compelling recent studies of mountaineering.[128] The anthropologist Sherry Ortner's concept of 'serious games' is among the most theoretically robust of these renderings, and the lack of explicit uptake of this idea in subsequent histories of mountaineering is somewhat surprising. Ortner suggests that the rationales and actions of Westerners and Sherpas in the Himalaya throughout the twentieth century were shaped in relation to each other, and always went beyond acting according to pre-ordained cultural scripts. Structures of power were present in climbing and related activities, but not determinative; multiple agencies were involved, but each never had anything like autonomy.[129]

Taken as a whole, recent histories give the sense that mountaineering has long been uneasily counter-cultural, located, in Ortner's appropriately cautious formulation, 'at a somewhat critical angle to the dominant culture'.[130] Just as scientists forwarded claims of the remoteness and distinction of upland spaces even as their endeavours in these areas relied on connectivity to the lowlands, so mountaineering departs from but always 'addresses itself back to (and back against)' mainstream norms.[131] As Taylor makes especially clear, climbers tend to be reliant on the very elements they avowedly critique. While European and American climbers in particular have scoffed at elements of conventional modernities such as routine, material accumulation, and technological progress, almost all relied on industrially produced technologies and drew on features that were, or became, part of dominant cultures, such as the valorization of

[125] Kerwin Lee Klein, 'A vertical world: the eastern Alps and modern mountaineering', *Journal of Historical Sociology*, 24 (2011), pp. 519–48.

[126] Taylor, *Pilgrims of the vertical*, p. 7.

[127] Klein, 'A vertical world', pp. 531–2.

[128] See especially Hansen's play on Shahid Amin's words, asking 'must literates always exemplify a code when they speak?': *The summits of modern man*, p. 146.

[129] Ortner, *Life and death on Mt. Everest*, pp. 23–4.

[130] Ibid., p. 8.

[131] Ibid., p. 35.

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risk and heroic individualism.[132] Most mountaineers have relied on the means of developed society – money, transport, leisure time – to get to the mountains, and their activities once there were performances addressed back to audiences beyond the 'wilderness'.[133] Climbers have long and widely partaken in the logics of materialism and social recognition that many claimed to rise above.[134] It seems that the counter-cultural aspect of various (and often competing) brands of mountaineering lay as much in the tendency to take to excess particular strands of dominant cultures as in the avowed denigration of others.

The recent foregrounding of national and imperial politics in the history of mountaineering has indicated that climbers' perspectives on upland peoples has been marked by ambivalence and elision every bit as much as their outlook on mainstream cultures. From the eighteenth-century Alps to the twentieth-century Himalaya, climbing has involved efforts to set the outsiders apart from and above locals.[135] And as Joseph Taylor argues, climbers in Yosemite who scorned imperialist attitudes seemed unable or unwilling to face their own 'invasion of Indian territory'.[136] Yet for all the Western-centric power dynamics, mountaineering has been transformative for many other communities in ways that go beyond the simple diffusion of climbing culture from Europe and the United States. Ortner's *Life and death on Mt. Everest* remains a pathbreaking study in this respect. It suggests that for Sherpas, climbing is grounded in 'desires for (among other things) "money" and "modernity," which themselves carry different meanings for the Sherpas than they do for the sahibs'.[137] Westerners' climbing has transformed Sherpa culture, but in ways that have at least as much to do with currents and conflicts within Sherpa society as impositions from without. Western constructions of Sherpas and Sherpa reconfigurations of these constructions are co-extensive and dynamically inter-related: Sherpa imaginings and practices have impacted how and why outsiders climb in the high Himalaya.[138]

Subsequent work has borne out and deepened Ortner's insights in relation to other mountaineering locales. Wigen's study of the Japanese Alps around the turn of the twentieth century outlines how a culture of climbing that partially addressed itself to the leading Western powers also insisted on the distinctiveness of Japanese upland imaginaries. Japanese mountaineers deliberately employed indigenous aesthetic categories such as *tettō* (wildness) in place of European notions such as sublimity.[139] That mountaineering discourses

[132] Freedgood, *Victorian writing about risk*, pp. 99–131.
[133] Taylor, *Pilgrims of the vertical*, p. 250.
[134] Ibid., pp. 180–1.
[135] Hansen, *The summits of modern man*, p. 273, passim.
[136] Taylor, *Pilgrims of the vertical*, p. 214.
[137] Ortner, *Life and death on Mt. Everest*, pp. 22–3.
[138] Ibid., pp. 5, 20, 185.
[139] Wigen, 'Discovering the Japanese Alps'.

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beyond Europe and North America have blended the derivative and the original is reiterated in Joy Logan's book on climbing in the Andean region of Mendoza, *Aconcagua: the invention of mountaineering on America's highest peak*.[140] Logan shows how Mendocino communities 're-script[ed]' European arrogance concerning first ascents into stories and acts in which they, and South America more generally, hold the heights.[141]

Logan and Wigen are part of a broader scholarly trend in recent decades that takes cues from post-colonialist theory and seeks to 'provincialize' Western mountains.[142] Such work shows how mountain modernities built on extant traditions in the Global South and thereby came to look very different across the world. Although the fact that mountaineering was long analysed as a quintessentially Western activity means that it is a particularly apposite phenomenon to provincialize, historians have also begun to view other mountain activities through this analytical lens. At the forefront of this work is a pair of books from established German- and French-language fields of mountain scholarship that have been recently translated into English, Jon Mathieu's *The third dimension* and Bernard Debarbieux and Gilles Rudaz's *The mountain*. Both show how, even at the height of the age of European imperial domination, sites beyond Europe and North America gave rise to influential ways of thinking about and acting in mountains. In contrast to an older generation of mountain histories, the books show that the West's mountains, especially the Alps, did not set an inflexible template for comprehending mountains worldwide. Further work in this vein is required to address the occasional presence of problematic simplifications in scholarship otherwise sensitive to the need to consider the global as a category of connection rather than uniformity. For instance, Debarbieux and Rudaz suggest that ethnographic and developmental models of non-European upland peoples in colonial and post-colonial eras took the form of 'a preconstructed grid, somewhat like that used for cartography'.[143] In thinking about mountains as global objects, historians would do well to focus on the myriad ways in which mountain terrain and inhabitants provincialized moderns' models and categories.

Paying attention to the ways in which distinctive mountain modernities emerged in various upland sites, especially through resistance on the part of inhabitants and intractable terrain, should not mean downplaying homogenizing forces that emanate from and serve to privilege the West.[144] Some histories that focus on mountaineering during the closing decades of the twentieth

[140] Joy Logan, *Aconcagua: the invention of mountaineering on America's highest peak* (Tucson, AZ, 2011).

[141] Ibid., p. 8.

[142] Dipesh Chakrabarty, *Provincializing Europe: postcolonial thought and historical difference* (2nd edn, Princeton, NJ, 2008).

[143] Debarbieux and Rudaz, *The mountain*, pp. 152, 167–92.

[144] See, for example, Michael S. Reidy on British imperial efforts to '[reorganize] global environments both horizontally and vertically' during the nineteenth century: Reidy, 'From

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century make this point effectively, suggesting how local variations have been subsumed into a Western-dominated 'commodification of adventure'.[145] For instance, Joy Logan shows that Mendoza continues to project itself as 'exotic and premodern' in part because it 'recognizes the selling power of its subordination within Anglo-European adventure markets'.[146] Maurice Isserman and Stewart Weaver claim that during the late twentieth century, a globally widespread 'age of extremes' in which individualism and commercialization run rampant marked mountaineering.[147] In this era, a long-standing contradiction in numerous climbing cultures between mountains as inviolably sacred and as a space of human conquest has been pushed further than ever before. As Jon Mathieu outlines, mountains have become globally recognized emblems of environmental concerns, designated 'a major ecosystem' at the 1992 UN Conference on Environment and Development, or 'Earth Summit', in Rio de Janeiro.[148] At the same time, and often precisely on the basis of their status as spaces apart from normality and mainstream modernities, they have been subsumed into market logics and prone to heightened exploitation and damage.[149]

VI

One American consumer of Tenzing Norgay and Edmund Hillary's first ascent of Mount Everest in 1953 wrote: 'my first reaction was depression…Now the mightiest mountain has succumbed; puny man has stood on the top of the world. What next?'[150] Similar glimmers of recognizing tensions and self-destructive logics have accompanied many mountain modernities. In the present day, the most pressing 'what next?' relates to impacts of anthropogenic environmental interference. What comes next in the historiography of modern mountains must engage and speak to the question of what comes next for environments, species, and human society. Notions of nature as non-renewable and agentive have come to seem compelling, and anxious visions of a radically and catastrophically changed future are rife. Under these circumstances, mountains are good to think with and vital to think about. As threatened and in some cases depleted resources, they stand as a reproach to the frenzied activities of moderns. Yet, in the words of the ecological philosopher Arne Næss, they

the oceans to the mountains: spatial science in an age of empire', in Vetter, ed., *Knowing global environments*, pp. 17–38, quotations at p. 18.

145 Logan, *Aconcagua*, p. 90.

146 Ibid., p. 224.

147 Isserman and Weaver, *Fallen giants*, pp. 398–453.

148 Jon Mathieu, 'The globalisation of mountain perception: how much of a western imposition?', *Summerhill: IIAS Review*, 20 (2014), pp. 8–17, at pp. 13–14. See also Schrepfer, *Nature's altars*.

149 Taylor, *Pilgrims of the vertical*, pp. 259–77; Isserman and Weaver, *Fallen giants*, pp. 437–8.

150 Alfred B. Fitt, quoted in Isserman and Weaver, *Fallen giants*, pp. 293–4.

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remain 'solid, stable, unmoving' and retain 'a certain greatness', calling forth 'modesty' from the people who interact with them.[151] The sense that we have moved beyond the conquest, extraction, and heroism that are supposed hallmarks of modern attitudes to mountains generates a rationale for critical reflection and enables such perspectives to be viewed as consigned to the past and removed from ourselves. However, mountains have a tendency to put neat temporal schemes and technologies out of joint. The tendency for explorers' chronometers and associated recording methods to malfunction at altitude is one instance of high places frustrating efforts to measure time.[152] Lived, experiential time too has often seemed to go awry in the uplands, as famously rendered in the increasingly dilated tempo of Thomas Mann's 1924 epic of life and death in an Alpine sanatorium, *The magic mountain*.[153] And despite serving as privileged spaces for the development of conjectures about human variation and deep natural history, mountains have just as frequently befuddled developmental taxonomies.[154]

The complexities of upland temporalities affect scholarship and advocacy in the present moment every bit as much as they impacted the subjects of our histories. Just as Leslie Stephen's separation of 'the Old School' of pre-modern attitudes to mountains and 'the New School' of modern outlooks occluded continuities and survivals, so present-day scholars occasionally fall into the traps of constructing excessively homogenized notions of modernity and its mountains, and of overestimating the rupture between them back then and us here now. We are not beyond modernity in our relations to mountains, but rather, as Peter Hansen suggests, at a 'threshold' defined by 'unstable' understandings of humanity and nature.[155] Even the most critically engaged commentators today continue to be significantly beholden to ideas and activities bequeathed from mountain modernities, and many of the concepts that undergird environmental concerns are co-extensive with the processes they seek to rectify.[156]

[151] Arne Næss, 'Modesty and the conquest of mountains', in Arne Næss, *Ecology of wisdom*, ed. Alan Drengson and Bill Devall (Berkeley, CA, 2008), pp. 65–7.

[152] See, for example, Marie-Noëlle Bourguet, 'A portable world: the notebooks of European travellers (eighteenth to nineteenth centuries)', *Intellectual History Review*, 20 (2010), pp. 377–400, at pp. 377–8; R. H. Phillimore, *Historical records of the survey of India*, v: *1844 to 1861: Andrew Waugh* (Dehra Dun, 1968), pp. 146–7.

[153] Thomas Mann, *Der Zauberberg* (Berlin, 1924); see also della Dora, *Mountain*, pp. 162–3.

[154] Macfarlane, *Mountains of the mind*, pp. 22–65; della Dora, *Mountain*, pp. 139–64; Sumit Guha, 'Lower strata, older races, and aboriginal peoples: racial anthropology and mythical history past and present', *Journal of Asian Studies*, 57 (1998), pp. 423–41; Thomas Simpson, 'Historicizing humans in colonial India', in Efram Sera-Shriar, ed., *Historicizing humans: deep time, evolution and race in nineteenth-century British sciences* (Pittsburgh, PA, 2018), pp. 113–37.

[155] Hansen, *The summits of modern man*, p. 302.

[156] Libby Robin, Sverker Sörlin, and Paul Warde, eds., *The future of nature: documents of global change* (New Haven, CT, 2013), especially Robin, Sörlin, and Warde, 'Introduction: documenting global change', p. 11; Mark Carey, 'The history of ice: how glaciers became an endangered species', *Environmental History*, 12 (2007), pp. 497–527.

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The most sensitive recent scholarship recognizes and addresses this entanglement. Hansen relates the launch of an environmentalist initiative in Chamonix in 2004, which made use of an existing religious festival and simultaneously celebrated the 1808 first ascent of Mont Blanc by a woman.[157] Joseph Taylor opens and concludes *Pilgrims of the vertical* by acknowledging his own long-term immersion in classic tales of mountaineering and personal investment in the very values he historicizes and criticizes.[158] Sherry Ortner says of the glory-seeking, hyper-masculine culture of Western mountaineering that 'in the end I think I "got it"', developing sympathy for its underlying complexities and tensions.[159] The best recent historical studies show that, in their understandings of mountains, moderns were a diverse and conflicted bunch, while also probing the corollary that we are not as securely distinct from our predecessors as we might wish.

Looking ahead, mountains provide historians and other humanities scholars with clear openings to grapple with and relate to global change. In Veronica della Dora's words, mountains 'call us to reflect not only on the deep past but also on a "deep future"'.[160] History as a discipline must play a part in fostering 'recognition' of global change in the strong sense that Amitav Ghosh outlines in *The great derangement*: harking back to something of which one was previously, if only dimly, aware, and thereby 'effecting an instant change in our understanding of that which is beheld'.[161] As Dipesh Chakrabarty has argued, the discipline must also adapt to a new 'climate' that includes the dissolution of a reliable distinction between natural history and human history.[162] Mountains warrant particular prominence in these disciplinary reckonings and adjustments since, as recent work considered in this review highlights, they have always compelled some sense of the uncanny and have seemed to elude complete mastery by human agency. They have rarely if ever seemed lifeless or inert, and no variant of modernity has flattened them through entirely subsuming them into universal schemes. Acknowledging nature as an agent – something Ghosh terms 'unthinkable' in modern arts, humanities, and sciences alike – has long and widely been understood in the mountains.[163]

Future mountain histories should certainly draw on the perspectives of groups under-represented in scholarship to date, foregrounding the imaginaries and activities of modernities' racial, gendered, and class-based others and its fringe players, those who lacked iconic status.[164] But these

[157] Hansen, *The summits of modern man*, p. 148.
[158] Taylor, *Pilgrims of the vertical*, pp. 2, 6, 277.
[159] Ortner, *Life and death on Mt. Everest*, p. 8.
[160] Della Dora, *Mountain*, p. 164.
[161] Ghosh, *The great derangement*, pp. 4–5.
[162] Chakrabarty, 'The climate of history', pp. 201–7.
[163] Ghosh, *The great derangement*, p. 22, passim.
[164] An excellent example of this work is Nayanika Mathur's account of human–big cat relations in the Himalaya, and her methodological considerations concerning 'translation' as a prime task of scholars in the Anthropocene: Mathur, 'The task of the climate translator'.

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histories-to-come can and must work with even the most mainstream mountain modernities, because they contain traces of configuring human–non-human relations and imagining the dynamics between nature and culture in ways that go beyond assumed separation and unidirectional imposition. The existing literature shows how mountains and their people have always reworked the already multiple and ambivalent modernities to which they have been exposed. Historians now must make a virtue of this in order to render some of the meaningful stories needed for the question 'what next?' to be answered in positive and persuasive ways.

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