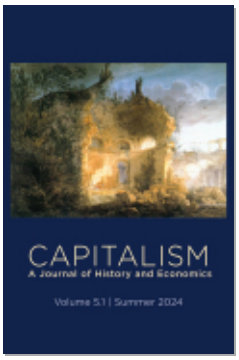
PROJECT MUSE®

Two Stories and Ten Theses on Teaching the Science/Knowledge Divide in Global History



Helen Tilley

Capitalism: A Journal of History and Economics, Volume 5, Number 1, Winter 2024, pp. 152-199 (Article)

Published by University of Pennsylvania Press
DOI: https://doi.org/10.1353/cap.2024.a934541

For additional information about this article
https://muse.jhu.edu/article/934541

[194.230.147.62] Project MUSE (2024-08-13 16:20 GMT)

Two Stories and Ten Theses on Teaching the Science/Knowledge Divide in Global History

Helen Tilley
Northwestern University

> You cannot know a single thing in its entirety . . . unless you know all.
> —*A. B. Dhruva, Commentary on Mallişeṇa's* Syādvādamañjarī *(ca. 1292 CE), 1933*

> Ācārya Dhruva thinks if we do not adopt English as the medium [of instruction], but learn it merely as a foreign language, it will share the fate of Persian, Sanskrit, etc. I should have to say, with due respect . . . that this view is not quite correct . . . the riches in our knowledge [from our "mother tongue"] lie buried in the ground.
> —*Mohandas Gandhi, speech to the Gujarat Education Conference, 1917*[1]

Most people will know something about Mohandas Gandhi (1869–1948), but very few people will know the name of his contemporary,

Note: I wrote this in dialogue with Andrew Amstutz, Shireen Hamza, and Eric Gurevitch. We had a fabulous set of exchanges about the first draft and I am indebted to them for their engagement (and entirely responsible for errors). I am grateful also to Carolyn Biltoft, Bernie Lightman, Marc Flandreau, Susan Pearson, Charu Singh, Robyn d'Avignon, and Mischa Suter for their feedback and encouragement. The content builds upon a graduate seminar I regularly teach that typically attracts students training in area studies such as African, Latin American, European, North American, Asian, and Middle Eastern history. Few students enter as historians of science in-the-making, but all understand that historicizing technology, medicine, and epistemology in the part of the world they study is a net benefit, especially as future teachers. One of my own greatest teachers was my mother Susan Tilley (1945–2023) who first introduced me to so many subjects I now explore, including the *Rig Veda* and metaphysics. Background research for this essay was supported by a grant from the National Science Foundation (#1456984).

[1] *Ācārya* is an honorific that can mean master. Dhruva, *Syādvādamañjarī of Mallişeṇa*, 14. (The pagination for the English section begins after the original Sanskrit and falls in the middle of the book.) Gandhi's speech was translated from Gujarati to English; see Gandhi, "Speech," trans. Mishra, 83.

Copyright © [2024] Trustees of the University of Pennsylvania

[194.230.147.62] Project MUSE (2024-08-13 16:20 GMT)

Ānandshankar B. Dhruva (1869–1942). Dhruva was a Gujarati professor of Sanskrit who had an illustrious career. It began in 1892 with an appointment at Gujarat College in Ahmedabad and ended in 1936 at Banaras Hindu University (BHU), a thirteen-hundred-acre campus bordering the banks of the Ganges in Uttar Pradesh, where he spent seventeen years as pro-vice-chancellor.[2] In 1933, Dhruva published an extensive commentary on a thirteenth-century Jain philosopher, Ācārya Mallişeṇa, who had many claims to fame, including discussing in print the parable of the blind men and the elephant. As Dhruva would have known, this parable circulated far and wide, moving in different languages across trade routes and oceans. Its beauty was in its simplicity. By the second half of the nineteenth century, whether audiences heard it spoken or read it as text, it had become a quintessential tool for teaching people about the nature of reality, consciousness, and perception. Aptly, this was true even in places where elephants did not exist, at least not in the wild.

By the time Dhruva became a professor, people in Gujarat already had a reputation for being wizards of industry, so much so that one of his younger colleagues stressed in a memorial that the region had been blessed by Lakshmi, the Hindu goddess of wealth and good fortune. This allowed Gujaratis "to hold the strings of commerce all over India." Ordinarily, as Professor Ardeshir Wadia continued in his remembrance, such generosity would mean the goddess of wisdom and arts, Sarasvati, might have looked elsewhere to bestow her own gifts, but she made an exception with Dhruva: "even wealthy Gujarat produced . . . a worthy favorite of Sarasvati." Dhruva was thus fated to be "a great savant," someone who balanced wisdom and humility in pursuit of a wealth of knowledge.[3] He would not have been surprised to learn that Gujarat is today a "growth engine" of India, leading

[2] He was born in Ahmedabad and returned there after he retired to be close to his children. He completed two degrees in Sanskrit studies plus one in law. Besides his books, translations, and annotated texts, he also edited the journal *Vasanta* for forty years. He taught classes on Sanskrit, English, philosophy, and logic. He began at BHU in October 1919 and ended his tenure in March 1936. In 1930, he served as president of India's Inter-University Board, and from 1937 until his death, he led the Gujarat Vernacular Society. See Trivedi, "Life Sketch," and Dar and Somaskandan, *History of Banaras Hindu University*, 462.

[3] Wadia, "The Late Acharya," 12, 14. A Parsi barrister and sociologist who trained in law and economics at Oxford and founded the philosophy department at the University of Mysore (in 1916), Ardeshir Ruttondji Wadia (1888–1971) published several books including *The Ethics of Feminism* (1923). For a recent essay on his life's work, see Jal, "A. R. Wadia."

the country in industrial output and exports.[4] Yet, much like his compatriot Gandhi, Dhruva would have been skeptical of the trade-offs; material riches were no substitute for metaphysical insights or collective solidarity. When pressed early in his own career to choose between workers or capital gain, he threw his weight behind people. Indeed, he described BHU's mission as bridging divides between East and West, technology and philosophy, worship and work, which were all "parts of a whole" and essential to "conscious human endeavor."[5]

Following Dhruva's lead, this essay argues that students who learn to navigate the science/knowledge divide in global history are better able to understand the roots of other divides too, whether these be economic, legal, military, social, or environmental. It offers a gentle rejoinder to scholars who write compelling syntheses about the history of *European* knowledge or the *global* history of science, but whose methods foreclose connections across continents or erase (and flatten out) vibrant epistemic and political cultures because they do not fit their story line.[6] It begins with a set of comparative—and loaded—questions: How do knowledge systems come into being, and who or what maintains them? Why do some become dominant and others disappear? How do some circulate, while others put down deep roots? Which kinds of knowledge scale up, and what tools and models have enabled this? And why would dissenting or subordinate methods and ideas persist? Given that science/knowledge divides are policed as much by historians as anyone else, and given that their dividing lines have oscillated around the Earth over time, it is helpful to debate how one *should* teach others to understand these dynamics in *specific* times and places. How can students working in and on *all* parts of the world learn to historicize scientific phenomena, even as they also learn that other spaces and regions have been repositories of different kinds of praxis?[7]

When experts compare the history of people and places on a planetary scale, they must develop a conceptual vocabulary that works across long sweeps of time and applies everywhere. This is easier said than done. Nearly

[4] The Gujarat State has 5 percent of India's population and 6 percent of the landmass, but its share of industrial output is nearly 20 percent and its ports handled 40 percent of the country's export cargo. Gujarat State, *Socio-Economic Review*, xi–xii.

[5] Dhruva made these points in a discussion of BHU's layout; quoted in Trivedi, "Life Sketch," 22–23.

[6] See, e.g., Burke's two-volume study, *Social History of Knowledge* and Poskett's *Horizons*.

[7] These methods have their own problems, so let me stress that all places and times tend to have people who engage in unhealthy power dynamics around expertise.

all writers take shortcuts by necessity. They see no need to know all and happily limit themselves to narrower aims, telling a *specific* story, tracing a *particular* phenomenon, explaining just *one piece* of a puzzle, creating a *good enough* (rather than perfect) composite picture. Their shortcuts allow them to offer crucial insights about the world, but they can also lead over time to dead ends and delusions. Mallişeṇa in the thirteenth century and Dhruva in the twentieth used the same shorthand to identify this problem: the parable of the blind men and the elephant. This essay unpacks its implications.

I have chosen to frame my ten theses in terms of two stories, one centered on the British Raj and the other centered on the American Empire. They intersect around the "Blind Men and the Elephant" and allow me to get at the nested and recursive dynamics that exist between teachers and knowledge, texts and pedagogy, ideas and political actions, languages and labor, institutions and power, and the legal frameworks and fictions that people use to broker debates. Because I have been enlisting children's books as part of my own pedagogy, these make an appearance too. In the classroom, such stories help students riff on divisions of intellectual labor, the history of built environments, small- and large-scale technologies, and ongoing disputes over what is real.[8] Like parables, narratives written for young people invite audiences to flex their imaginative muscles and see the world from new vantage points. So, let's begin.

Story 1: Kinds of Knowledge and Ways of Teaching

Once upon a time, a young professor who had trained in law and Sanskrit studies, Ānandshankar Dhruva, took part in the Indian National Congress and developed a critique of British rule. Eventually, he met Mohandas Gandhi at the Gujarat Club just after Gandhi returned from South Africa in 1915.[9] The two men formed an immediate bond. Gandhi praised Dhruva's scholarship both in private and public, announcing somewhat naively at the second Humanitarian Conference in 1917 in Bharuch that Dhruva's commentaries on Sanskrit texts had "conclusively proved that non-violence . . .

[8] Three books I find especially useful to puncture dominant epistemologies are Williams's *Everyone Knows What a Dragon Looks Like*; the Akan fable, retold in Haley, *A Story, A Story* about the trickster figure, Anansi, and his efforts to make all stories his property; and Hamilton's version of *The People Could Fly* about ancestral knowledge that guided enslaved people to take magical flight.

[9] At the time of their first meeting, Gandhi already knew of Dhruva's work; see Sen, *Social and Religious Reform Movements*, 243.

was the fundamental trend of Indian culture throughout the ages."[10] Dhruva was such a trustworthy and judicious authority in Ahmedabad that labor leaders and officials asked him in 1918 to arbitrate a strike of nearly 10,000 mill workers against their employers. The workers had privately chastised Gandhi for his class hypocrisy, prompting him to embark on the first of several public fasts, this one to call attention to the mill owners' refusal to negotiate. With Dhruva working on the inside and Gandhi on the outside, the two men helped the strikers secure a 35 percent raise.[11]

Though they disagreed on the role of English in higher education—Gandhi advocated "Indian languages" and Dhruva embraced English—they shared the view, as Gandhi put it, that British rule "saps the mental energy of our people."[12] When Gandhi and the Indian National Congress launched the Non-Cooperation Movement (1920–1922), aiming to boycott British goods and services to undermine the foundations of British rule, they disagreed again on whether students ought to boycott BHU itself. Gandhi believed they should, Dhruva did not, though he still supported the movement's goals on campus, using his leadership positions to advance them.[13] A decade later when Gandhi ended another fast—in response to a controversy over a 1932 ruling allowing certain castes new political opportunities—he asked Dhruva to look into the matter of "untouchability" in Sanskrit texts. Dhruva presented his results before "an assembly of the Pundits," concluding that "untouchability was never a part of true Hinduism . . . and that it was the rankest superstition to treat any human being as untouchable."[14] Gandhi pushed Dhruva to spread his findings widely.[15]

Dhruva had by then spent many years studying the work of thirteenth-century Jain philosopher Ācārya Mallişeṇa. He was fascinated by Mallişeṇa's entire text, especially what it had to say about "systems of truth" and their relationship to knowledge. In one excerpt, he walked readers through

[10] Gandhi, paraphrased in Trivedi, "Life Sketch," 17. He meant nonviolence as ethos rather than practice, but even so the claim is easily refuted. See Pollock, *Language of the Gods*, 35–36.

[11] Guha, *Gandhi*, p. 55.

[12] Gandhi, "Speech," 83.

[13] Trivedi, "Life Sketch," 30, 36–37. BHU's founding leader objected to Gandhi's call for an education boycott during a joint presentation with Gandhi in November 1920. Nearly a quarter of BHU's students decided to join the boycott and quit their studies; students studying Sanskrit heeded the call in the greatest numbers. Renold, *Hindu Education*, 88–89, 99.

[14] Dhruva, paraphrased in Trivedi, "Life Sketch," 37. Whether Dhruva would have used the word *superstition* is unclear.

[15] As Guha points out, Gandhi publicly called untouchability a "crime against humanity," but "was not prepared to criticize the caste system itself." Guha, *Gandhi*, 35, 119.

Mallişeṇa's six types of knowledge: 1) "unlimited, unfailing, . . . extraordinary knowledge," also called wisdom, 2) the knowledge "ordinary human beings acquire," 3) "scriptural knowledge," 4) "knowledge of the distant in time and space," 5) "knowledge of what passes in other minds," and 6) "pure or perfect knowledge which is entirely liberated from the soul or from the bondage of matter."[16] Mallişeṇa was himself interested in how these insights were passed between generations, asking his readers "whether unlimited knowledge is the essential characteristic of a Teacher [*Tīrthaṅkara*]."[17]

Professors in Dhruva's line of work ruminated on this question too, so the stakes were high. Mallişeṇa, he explained, answered by enlisting the views of "heretical thinkers" who said "it [was] immaterial whether one knows everything or not; what matters is whether he knows the essential thing." Dhruva then offered a contemporary twist on Mallişeṇa's exegesis. Specialists did not need to "know the [exact] number of bacteria in a thing" to do something about them; "one must know what has a bearing on life or practice."[18] Ah, good, teachers need not know everything! Not so fast, you can almost hear Dhruva reply. Mallişeṇa, he reported, rejected that answer. People who elected to be teachers had special obligations: "You cannot know a single thing in its entirety . . . unless you know all; thus one and all are organically related, and so is the knowledge of one and the knowledge of all." Teachers needed to have at least two "fundamental" qualities, Mallişeṇa insisted, "unbounded knowledge" and "long sight." Taking the long view on knowledge of things in the universe helped turn a seeker into a *Teacher*. This was where elephants and blind men entered the picture.

As Dhruva explained, both "Reality" and "Truth" were "many-sided." Those who achieved "*partial truths* as seen from particular angles of vision" were not "wholly wrong," but if they made no effort to "see things from the point of view of the opponent as well as from their own" they would be unable to achieve "intellectual *ahiṃsā*," that is, pacificism or "non-injury." The point of Mallişeṇa's writings, Dhruva continued, "was not to revile [the partial truths of] other systems, but to serve the cause of Truth—which is

[16] Dhruva, *Syādvādamañjarī of Mallişeṇa*, 8–19. Types of knowledge reappear throughout the text as do "rival systems of truth."

[17] *Tīrthaṅkara* were technically teachers of the highest order, spiritual teachers, sometimes glossed as "teaching gods." I am taking modest liberties with the literal meaning for this essay.

[18] According to Eric Gurevitch, Mallişeṇa was building upon the work of Dharmakīrti (7th century), who asked, "What is the use of someone's knowing the number of worms (*kīṭa*) for us?" Personal correspondence, December 28, 2023. For fuller context see, Gurevitch, "Epistemology of Difference."

not absolutely confined to any single system."[19] Indeed, one of the lessons of the parable was that *all* senses had their limits and that other ways of apprehending—collaborative perception, transcendent consciousness, and social wisdom—also had value. Imagining any one *sense*-ability as better than others—or placing some sense insights at the top of a hierarchy—meant people might become unconscious of or misperceive what really mattered in the world.

Dhruva is a fascinating case because his life has been largely ignored outside India. Sanskrit specialists still cite his translations, but they say little about his intellectual or political biography or the central role he played at Banaras Hindu University, the first in the British Raj founded outside government circles and intended to bridge Indian history and culture and make "scientific knowledge . . . available to Indians in their own country."[20] Its inaugural professor of modern Indian history was none other than Jadunath Sarkar, whose role was brief because he left in late 1919 to join the Indian Historical Records Commission as a semipermanent member.[21] BHU was modeled on residential universities in Europe and the United States, and its language of instruction was to be English. "As you enter the ground," Dhruva wrote early in his tenure at BHU, a visitor would see first "the Combined Hostel and College for Women," then "a Combined Hospital and Ayurvedic College," then a four-way crossroads from which one could make out "the Colleges of Arts, Science and Engineering, Law," then further along the "Science Laboratories," and finally the epicenter of campus, "where we have started building a Library and Museum . . . [and] a Technological Institute . . . [to house] industrial chemistry and mining and metallurgy." Later in his career, Dhruva spoke of Banaras with more candor, saying that a stranger might take it to be "a city of 'the dead and the dying,'" and "to an

[19] All quotations in Dhruva, *Syādvādamañjarī of Mallişeṇa*, xxvi, lxxiii–lxxiv, and lxxxiii, italics in original. Dhruva uses different diacritics; I have updated them. My thanks to Shireen Hamza for encouraging me to clarify my points about the senses and debility.

[20] Quotation from the 1905 proposal by Madan Mohan Malaviya, in Pandey, *Founder*, 19–20. During the legislative council debate about the university's founding in 1915, Malaviya testified that BHU "will be a denominational institution, but not a sectarian one. It will not promote narrow sectarianism but a broad liberation of mind and a religious spirit which will promote brotherly feeling between man and man" (21). For a critique of Malaviya's prospectus, see Anonymous "Indian Nationalist," "Proposed Hindu University." For Gandhi's controversial opening speech in 1916, see Guha, *Gandhi*, chap. 2. Also see Lütt, "Movement."

[21] See Government of India, *Indian Historical Records Commission*, app. 1, "Government of India—Department of Education, Resolution #77, 21 March 1919," 93–98. On Sarkar, see Chakrabarty, *Calling of History*.

average Hindu, a city of Pandas [experts]," but to "a Hindu with historical imagination [it] is the oldest University in the world."[22] Banaras was indeed a holy city, associated with the deity Shiva and where the devout came to die and be cremated in the hopes of attaining salvation. Ramachandra Guha describes it as a "centre of learning and of pilgrimage . . . probably the oldest and certainly the most storied of Indian cities."[23] Shortly before he himself died, Dhruva asked his eldest son, an Oxford graduate and professor of English at Gujarat College, to donate Dhruva's own library of 10,000 volumes to the Gujarat Vernacular Society. "These have made me," he told a close friend.[24]

Dhruva knew the parable of the blind men and the elephant had deep roots, but just when it was first written down is unclear. Similar ideas about the many-sided nature of reality appear in the Sanskrit *Rig Veda*, dated conservatively to 1200 BCE, and the parable itself is discussed in a Buddhist text dated to circa 100 BCE.[25] It is also found in Sanskrit, Arabic, and Persian texts from the ninth, twelfth, and thirteenth centuries CE.[26] Still later, the story circulated in Chinese and Japanese texts, complete with illustrations.[27] This brings us to the second story: how the parable became so popular and pervasive in the Anglosphere.

Story 2: "Theologic Wars" and Embodied Rights

In the late 1840s, a lawyer and politician from Vermont, John Godfrey Saxe (1816–1887), bored with his career, began to write poems.[28] By 1851 he had moved into the role of editor of the *Burlington Sentinel*. After losing two runs for governor in 1859 and 1860, he decamped with his family to Albany, New York, where he continued to work as a correspondent at the *Albany Evening Journal* and made a living as a poet and satirist on the public lecture

[22] Dhruva, quoted in Trivedi, "Life Sketch," 31, 22.

[23] Guha, *Gandhi*, 27. Other details on Banaras in Dar and Somaskandan, *History of Banaras Hindu University*. The city is today known as Varanasi, but the university retains the name Banaras.

[24] Dhruva, quoted in Trivedi, "Life Sketch," 42–43.

[25] Balcerowicz points out that the parable appears in the Buddhist *Udāna* (ca. 100 BCE), "Some Remarks on the *Naya* Method," in Balcerowicz, *Essays in Jaina Philosophy*, 41.

[26] For Persian and Arabic references, see Meier, "Problem of Nature," esp. 163–70. This is an English translation of the German original published in 1946.

[27] For illustrations from the medieval period to the twentieth century accompanied by Saxe's poem see Bindu, "Blind Men."

[28] Taft, *John Godfrey Saxe*, 49–52. Saxe sold the *Burlington Sentinel* in 1856 and moved to Albany late in 1860.

circuit. A northern Democrat, Saxe was ambivalent about those calling to abolish slavery. Sometime in the early months of the Civil War in 1861, Saxe composed his own version of a "Hindoo Fable," eventually publishing it in his *Clever Stories of Many Nations*.[29] His six blind men "of Indostan" made sense of the elephant in the usual way, each touching one part—the body, the tusk, the trunk, the leg, the ear, the tail—and declaring its essence to be: "like a wall! . . . a spear! . . . a snake! . . . a tree! . . . a fan! . . . a rope!" Saxe's last stanzas offered two morals, one about reality and the other about dogma. The blind men "Disputed loud and long, / Each in his own opinion / Exceeding stiff and strong; / Though each was partly in the right, / And all were in the wrong. / Moral. / So, oft in theologic wars, / The disputants, I ween, / Rail on in utter ignorance / Of what each other mean / *And prate about an Elephant / Not one of them has seen*!"[30] (If Saxe had seen an elephant in real life, it would have been outside his home state of Vermont, which prohibited circuses from performing.)[31]

Saxe's reference to "theologic wars" had a double meaning depending on which side of the North Atlantic his audience lived. How he first heard the parable is unclear, but it seems plausible that he came across it from reports of "native catechists" who were involved in American and British mission work in India. In fact, early in 1861 the *Home and Foreign Missionary Record* published a report from a translator and proselytizer, Krishna Lall, who worked for a mission outside Calcutta. Lall's published diaries told of the work he and a colleague did to teach villagers about "knowledge and the kinds of it," divine and otherwise. British missions had enlisted "native catechists" more actively after the 1857 uprising, in part because Indian soldiers had spread fears that the British were trying to convert Hindus and Muslims to Christianity on a massive scale.[32] Given how many residents in and around Calcutta knew of "the mutiny of the Sepoys," Lall deliberately brought up "the mutineers" in his preaching to turn the rhetorical tables: "they have taken up arms," he told his listeners, "against the lawful authorities without any just cause." Ordinary rules of law, he continued, required

[29] Saxe seems to have published it first on January 25, 1862, in the *Manchester Guardian* in England.

[30] Saxe, *Clever Stories*, 61–64, italics in the original.

[31] Their use as an entertaining species accelerated in the 1870s. Nance, *Entertaining Elephants*, 246, 143–44.

[32] On the missionary background, see Porter, *Religion versus Empire?*, chap. 7. On the role of Indian soldiers, see Morgenstein Fuerst, *Indian Muslim Minorities*.

[194.230.147.62] Project MUSE (2024-08-13 16:20 GMT)

that they be punished, but the British (like Christ) "out of their kind and generous hearts, wanted to pardon the rebels." Not everyone was persuaded of course. Lall reported an encounter with a man who had read the Bible in English and called it a "cunningly devised fable."[33] Here Lall tried to turn the tables again, replying that those who questioned the scriptures were like the blind men with the elephant, taking in only a part and thinking they understood the whole. Lall's claims about British pardons were sheer fantasy—rebels were massacred, hanged, tortured, imprisoned, violated, and blown up—but the ideas would have resonated with someone like Saxe who believed that after war, "Christianity urges her benign doctrine of forgiveness and peace."[34]

For those exposed to Saxe's poem in the United States, the "theologic wars" were also part of recent memory. In the decade leading up to active conflict, white congregations and churches had become a primary venue to debate and amplify Southerners' claims that slavery was ordained by God and written in scripture. When the Confederacy issued its own constitution early in 1861, it invoked in the preamble "the favor and guidance of Almighty God," and later chose for its party motto "God will avenge" (*Deo vindice*). (So much for divine benevolence.) By the summer of 1861, Jefferson Davis called for the Confederacy to undertake its first national fast, appropriating a tactic that Northerners had used and avowing that their opponents had become godless.[35] Saxe wrote his poem to vent his own frustrations that both sides in the "theologic war" had failed to prevent devastating bloodshed, "with an expenditure of money and a magnitude of armies such as the world has never seen before." In 1866, once slavery was abolished and fighting had ceased, he told a massive gathering in New York City's Union Square that he objected to the franchise for African American men and described Reconstruction as unfair to the "Eleven States" of the South. On emancipation, he elaborated, that "as a lover of liberty for all men

[33] All quotations from Lall in Anonymous, "Extracts," 10–12. His parable included only four men (rather than six) and the parts of the elephant were tail/rope, leg/pillar, ear/fan, and trunk/cobra. I suspect the parable had become part of pedagogical practice: see a similar fourfold invocation from another set of diaries in Anonymous, "Foreign Missions," 536.

[34] On the 1857 uprising and aftermath, see Streets, *Martial Races*, chap. 1; Saxe, quoted in "Great Union Rally—The Conservatives in the Metropolis in Council." *New York Times*, September 18, 1866, 1.

[35] Stout, *Upon the Altar of the Nation*, esp. chap. 1, "The Spirit of the South Is Rising," and chap. 5, "To Recognize Our Dependence upon God."

of all colors who are fitted for it, I rejoice." There was no need to add that he did not deem all men fit.[36]

Saxe's books and poems continued to sell and circulate up through the year of his death and beyond. A suffragist—and occasional writer of poems, children's stories, and essays herself—Frances Stoughton Bailey (1851–1893) used the parable in 1883 to frame her critique of men who argued against women getting the vote in Boston. As she explained, such men often insisted that the franchise would fail, as it had "wherever it had been tried, . . . because women did not wish to vote." These same opponents also argued that voting rights "would work untold evil by tending to separate husband and wife, and introducing discord into the family circle." They then enlisted doctors' expertise, saying a woman's nervous system "could not endure the excitements of political life . . . her health would ultimately be wrecked." Finally, they insisted that while "good women" understood the dangers, these "ladies did not appear in person to oppose this bill, because they wished to keep out of politics." Bailey pointed out that such men seemed blind to their own contradictions. "Of course every subject is many-sided," she admitted, but "various sides of a truth will bear a certain relation to each other." In this case, the different sides when combined led to absurdities: "it will be found difficult to explain how [women] can be excited over a matter to which we are so utterly indifferent as to endanger health, or how we shall be spoiled as housekeepers by a right which we shall neglect to exercise."[37] In a different venue, Bailey was more candid and sarcastic: men's urge to "protect" women not just from having the vote but from entering the professions (especially medicine) stemmed from their own childish urge to take opportunities from women, claiming it was for the women's own good: "He cannot stand by and see a woman taste the fruit of that tree of knowledge, and he and his colleagues manfully snatch it away. What a greedy grasping creature woman is! We shudder to think what she might have become."[38] Manly men, she quipped, knew to keep knowledge and its fruits to themselves.

[36] Saxe's speech and those of others on September 16, 1866, are recorded in "Great Union Rally—The Conservatives in the Metropolis in Council." *New York Times*, September 18, 1866, 1.

[37] All quotations are from Bailey, "Blind Men and the Elephant," 127. Whether Bailey read Saxe's poem or saw similar parables circulating in the mission press is unclear. In 1884, an Anglo-American children's magazine published a version "said to be current among natives of India": A. R. B., "Blind Men and the Elephant." Bailey lived in Providence, Rhode Island, and worked for the Woman's Baptist Foreign Missionary Society. See thesis 7 for more details.

[38] Bailey, "We Will Not Have Her Selfish," 236.

On the eve of the Great War, the publishing house Rand-McNally decided to reprint Saxe's poem in *The Holton-Curry Reader* (1914), a series of volumes designed for English teachers. Pupils using the poem in their lessons would learn to pronounce *In'do-stan'*; that India was "a country in Asia"; that *ŏb-sēr-vā'tion* meant "taking account through the senses"; that *mār'vel* meant a "wonderful thing"; and that *grōpe* meant "to feel one's way with the hands." To make the poem age-appropriate, the editors chose to delete Saxe's final stanza about "theologic wars."[39] One reviewer described the texts as ideal for young people "learning to read and reading to learn."[40] The implied moral was clear: for a "Hindu" parable to become a staple of children's English literature, it needed to ignore theology and war. Reality, by contrast, was fair game.

Ten Theses on How to Parse the World: On Reality and Illusions

We have arrived at the ten theses. On the journey here, I found Dhruva's biography and translations a revelation. One of his dear friends explained after he died that his "habit of contemplation had given him a comprehensive vision of this vast universe, and . . . from [this] point of view, the earth of ours was a tiny speck and its modern giants who shook it so tremendously . . . were utterly insignificant."[41] Analysts who wish to make sense of the world would do well to remember this kernel of wisdom. Modern giants do so enjoy defining and ordering reality for the rest of us, but when put in proper perspective they look more like the emperor and his cohort in Hans Christian Andersen's "The Emperor's New Clothes": duped and duplicitous.[42] Put more generously, it looks like grown-ups have agreed to play make-believe.

[39] Saxe, "Blind Men and the Elephant." Rand-McNally was the most prominent publisher to excerpt Saxe's poem. D. C. Heath and Company reprinted it in 1907 in the fifth volume of their *Heath Readers by Grades*. In 1906 in England, Saxe's poem was set to music as part of the "Novello School Song" series for elementary school lessons. Koenigsberger, *Novel and the Menagerie*, 69–70.

[40] Anonymous, "Book Table," 301; also see Teal, "Duplication in School Readers."

[41] Trivedi, "Life Sketch," 39.

[42] In Andersen's 1837 story, the emperor is vain and easily duped by tradesmen who claimed to be able to weave stunning cloth that "had the virtue of being invisible to anyone who was stupid or unfit for office." The "swindlers" then stole the goods they requested and only pretended to weave an outfit. The emperor, uneasy about being the first to look upon the garments, sent two of his wisest officers who went along with the deception because otherwise they would become a "laughing stock" and lose their jobs. When the emperor finally went himself, accompanied by

Thesis 1. Global Spaces: On Geographies of Knowledge

Recent—and victorious—scientific understandings of the Earth and its inhabitants profoundly shape how all historians and scholars study and explain past conditions; a more honest accounting of these epistemological givens would help sharpen efforts to reconstruct geographies of knowledge everywhere over time.

One way for an author to bring a new perspective to an issue—including the science/knowledge divide—is to use a faraway spot as a starting point. In Malliṣeṇa's schema, we can refer to this as "knowledge of the distant in time and space." *Where* one begins a story matters just as much as *when* because places become referents against which other locations are known and measured. I began this essay in India and included a thirteenth-century text on purpose. My initial story would have been very different had I focused on a teacher and linguist in early twentieth-century Greece or Iraq or China or Mexico. Had I begun in the Rift Valley, the Bight of Benin, the island of Haiti and the Dominican Republic, the Andes mountains, or an archipelago in the Pacific, the story might have revolved not around professors and their books but perhaps around a group of sages and their embodied practice.

These days, even when writers want to make the strange familiar or the familiar strange, they tend to describe place-based features and earth-based phenomena using up-to-date standards. Stories would be inaccessible and absurdist if writers approached different places using ideas from different time periods. People may be studied "on their own terms," but places less so. Natural or physical features—a geological formation, a climatic dynamic, a body of water, a mountain range, types of plant life, soils, minerals, and metals, domestic and wild animals, insects and bacteria, or the earth's atmosphere—tend to be invoked with as much scientific accuracy as possible. Readers, after all, should not get lost or be led astray. (And, truth be told, even people are discussed with insights from the human sciences in mind to avoid disorienting audiences.) Fortunately, teachers have more latitude. We can take our students places and let them *grōpe* for a while. This can help them look afresh at dominant scientific descriptions of the Earth and how they came into being.

---

courtiers, everyone was too afraid to admit they saw nothing and declared the garments glorious. At the end of the story, as the emperor paraded in front of the entire city, a child called out, "but the Emperor has nothing on at all," starting a chain reaction until all acknowledged the truth. Andersen, "Emperor's New Clothes."

Thesis 2. Global Languages: On Translations and Imperial Communications

No matter how many languages have been—or still are—spoken in the world, only a few dominate published work in global history, and one of these is the undisputed king, English. No amount of source language diversity alters the imperial histories of languages or their power politics.

Mallisẹna might refer to this thesis as "the knowledge of what passes in other minds."[43] When scholars take different thought-worlds seriously and compare them to thought-worlds in other places and times, it makes global history more robust. The irony of knowing different languages, however, is that these skills alone are never enough to connect historical dots. Scholars must figure out how to locate the doors that their language skills unlock. This too is easier said than done. Not everyone can find the door to *The Secret Garden*.[44] Sheldon Pollock, a specialist in Sanskrit "knowledge systems" before Portuguese, French, and British conquest, has pointed out that while European historians have known *when* vernacular languages began to take precedence across Europe, they have failed to investigate fully *why* and *how* this happened.[45] Sometimes outsiders to a region see patterns that insiders, working in those languages, do not.

If students are to take the world seriously, they should understand not just histories of translation but also histories of imperial languages.[46] This requires that they be taught to respect the methods of historical linguistics too, given that these tools have unlocked much older stories in African history.[47] Those of us who work predominantly in English sources or other triumphant vernaculars—such as Mandarin, Hindi, Arabic, Russian, French, Spanish, Portuguese, Bengali, Turkish, Dutch, Italian, German, Japanese, and Urdu—

[43] This knowledge applied to groups and individuals, so it also meant the ability to read a person's mind or know what someone was thinking.

[44] This is another example of children being depicted as gaining access to insights adults deny or have locked away. The protagonist in *The Secret Garden* (Burnett, 1911) was born in India and her parents died of cholera. Burnett also wrote *The Little Princess* and *Little Lord Fauntleroy*.

[45] Pollock, *Language of the Gods*, 437–38 and chap. 11, "Europe Vernacularized."

[46] To make this point, I pair Michael Gordin's *Scientific Babel* with work focused on Arabic or Mandarin translations and life-worlds, which helps highlight what is gained and lost by different methods. Some of the authors I have assigned include Marwa Elshakry, *Reading Darwin*; Daniel Stolz, *Lighthouse and Observatory*; and Ben Elman, *On Their Own Terms*.

[47] For a selection, see Schoenbrun, *A Green Place*; Ehret, *History and the Testimony of Language*; Stephens, *Poverty and Wealth*; Albaugh and de Luna, *Tracing Language*; de Luna, *Collecting Food*.

have a special responsibility not to run roughshod over the rest. Gandhi understood the "riches . . . buried" in India's languages and helped to standardize Gujarati. Others of his generation were working to make Urdu a "language of science."[48] Vernaculars still spoken around the world contain many semantic clues that could help resolve unsettled debates about perception and reality. Even so, it was Dhruva, a Sanskrit specialist, who believed that English ought to become a primary "mode of instruction" for Indian students alongside their "mother tongues." Such decisions have never been a zero-sum game.

Thesis 3. Global Ontologies: On Metaphysics and Unknowns

No matter how sure scholars want to be about metaphysics and reality—including the dividing lines between scientific and religious knowledge—there will always be things past and present that are unknown, inexplicable, indeterminate, and incommensurable by default and design.

All historians write about things that are real, but they must also skirt around things that are indeterminate, whether by their own standards or those of the past. A German cultural critic, Franz Roh, developed a phrase in the mid-1920s for this liminal state: *magical realism*, stressing that he chose the "word 'magic' as opposed to 'mystic' . . . to indicate that the mystery does not descend to the represented world, but rather hides and palpitates behind it."[49] Things in the world and reality itself, in Roh's view, had an inexplicable and miraculous quality: "the background [of an image] is the last frontier, absolute nothingness, absolute death, from which something emerges and vibrates with energetic intensity. This seems to be a more important viewpoint than the 'objectivity' everyone keeps evoking. The latter doesn't acknowledge that radiation of magic, that spirituality, that lugubrious quality throbbing in the best works [of representation] . . . the unending miracle of eternally mobile and vibrating molecules. Out of that flux, that constant appearance and disappearance of material, permanent objects appear." By studying and trying to represent what was real, Roh argued, one could also learn—just as the students who sounded out the words in Saxe's poem "The Blind Men and the Elephant"—how to *mār'vel*.

[48] Sebastian, "Gandhi and the Standardization of Gujarati"; Amstutz, "Finding a Home for Urdu."

[49] Roh, "Magical Realism," 16, 20–22. Roh published this first in 1925 in German; it was translated into Spanish the same year and circulated as a journal article. I am using the 1995 English translation.

Contrary to conventional methods in most history writing, a reasonable and objective approach to reality would accommodate the enchanted and indeterminate always and everywhere.[50] Doing so would not mean historians were entertaining *super*natural or *ir*rational phenomena, but that they were treating reality, in Malliṣeṇa's words, as "a single thing in its entirety." When scholars set up dividing lines between things scientific and things religious, or things secular and things sacred, or things reasonable and things magical, they distort reality. Peter Gottschalk, another specialist of Indian history, has observed that "in eighteenth-century Europe, there was no such thing as a systematic, empirical study of religion, or the secular comparative study of religion. Globally, few cultures even had a word that resembled what we term in English today *religion*."[51] These epistemic divisions came into being in more rigid ways in the nineteenth and twentieth centuries, which makes it misleading to project them deep back in time.[52] Keeping these historical findings in mind helps create bridges across different parts of the world and allows historians to transgress and subvert the ontological boundaries drawn by history's winners, not to mention by many historians of science. "Until recently," Pamela Smith has acknowledged, such parsing was indeed "seen as part of the work of the historian of science: to determine who belonged in the story of science—that is, who was modern and scientific—and who did not."[53] Their mission led many readers and students down cul-de-sacs. Even so, it does not require an "indigenous" or "subaltern" or "colonized" or "non-Western" perspective to see through classification schemas that flatten reality. Subordinated communities have indeed been custodians of different ways of thinking about the world, yet parallel critiques have also arisen within epicenters of power in a dialogic fashion. To imagine that only certain groups can think differently or that radical critique has ever been free of power relations are methodological

[50] Here I am in dialogue with historians of science who work on wonders, objectivity, reason, and reality. Can reason lose its mind—to invoke an important study of Cold War "giants" in the United States—if the actors working to find the "Holy Grail of *real* rationality" are delusional about the world to begin with? See Erickson et al., *How Reason Almost Lost Its Mind*, 5, 24. Fabian poses related questions in *Out of Our Minds*. Also see Park and Daston, *Wonders and the Order of Nature*; Daston and Galison, *Objectivity*; Shyovitz, *Remembrance of His Wonders*.

[51] Gottschalk, *Religion, Science, and Empire*, 6.

[52] Scholars focused on the Caribbean and Latin America have made similar points for decades; Cañizares-Esguerra, *How to Write the History of the New World*; Palmié, *The Cooking of History*.

[53] Smith, "Science on the Move," 372.

mistakes. Being on the margins of power, however, does give people a better vantage point to call out stupidity and danger when they see it.[54]

Thesis 4. Global Ruptures: On Scientific, Industrial, and Military Revolutions

Big ruptures in history are real. Some have stemmed from autonomous planetary dynamics, while others have arisen from human agency; and many have been a mixture of both. Measuring these ruptures using a European yardstick misconstrues their global dynamics, yet the Europeanness of certain origin stories is also hard to ignore.

Those who take seriously Dhruva's standpoint on the cosmos would understand that the Earth is a special place in terms of the life forms it sustains and the matter it encapsulates. One does not need to know the work of Copernicus, Bacon, Harvey, Descartes, Galileo, Linnaeus, Buffon, Banks, Newton, Malthus, Carnot, Humboldt, Kelvin, Darwin, Pasteur, Koch, Mendel, Mendeleev, Einstein, Freud, Huxley, Oppenheimer, or Watson and Crick to understand this point, but it is nearly impossible to make sense of "modern giants" and the big ruptures they ushered in—or took credit for—without some appreciation of their theories, including how these circulated through the world.[55] By the same token, if one focuses only on these figures or begins and ends every story within European lands, global delusions set in. When people are delusional, confronting them about reality can make them angry and so they lash out. When structures are grounded in delusions, their defenders make similar moves, ratcheting up hostilities against critics or social movements until frictions spark "theologic" and "geopolitical" wars.

Between the late fifteenth century and the present, humans—or rather a small subset of the species operating through networked hubs and passing batons back and forth in a kind of relay race whose pace increased by the century—managed to domesticate the planet, but at the cost of jeopardizing systems that support life.[56] Whether we refer to one or many revolutions

[54] I have used Cruickshank's *Do Glaciers Listen?* to teach some of these points, including about radical incommensurability. Another excellent book for these purposes is d'Avignon's *Ritual Geology*. Historians must always be aware of the dangers of reifying dominant patterns of thought for the time period they study.

[55] One of my favorite books for teaching a part of this history—on thermodynamics—is Rabinbach's *Human Motor*.

[56] I have taught for years John McNeill and Peter Engelke's terrific syntheses in *The Great Acceleration*—riffing on Karl Polanyi's *Great Transformation*—though I tend to start further back

[194.230.147.62] Project MUSE (2024-08-13 16:20 GMT)

in the sciences in the intervening centuries, or discard the phrase "scientific revolution" entirely, matters less than how we understand connections between scientific and other ruptures.[57] To domesticate the planet required industries, industries required empires, empires required militaries, militaries required machines, machines required energy, energy required time, and everything required know-how and human labor, including reproductive labors.

Historians, of all people, should see right away that "one of these things is not like the others," to quote the Sesame Street song. Big ruptures since the fifteenth century have been unevenly fed by earthly ingredients—metals, minerals, and fossil fuels—that no amount of *time* can replace. During the final months of the Second World War, a geologist for the British Empire made a related point: "The astonishing development of mechanized warfare, at sea, on land, and in the air has created an abnormal demand not only for coal, oil, and the metals of heavy industries but for a host of other special minerals and metals some of which are so essential that a shortage of certain of these would seriously jeopardise the result of the war."[58] Global hostilities have left in their wake a militarized planet, controlled by a small number of men and an even smaller number of countries whose powers to destroy and tools to surveil now reach beyond the Earth's atmosphere.[59] Dhruva, Gandhi, and even Saxe considered "modern" wars abhorrent. They also understood better than most that nonviolent means to resist dominant patterns and chart a new course could spark violent reactions. Learning to see opposition to a militarized planet as healthy, and to acknowledge that radical inequalities in military and economic power are pathological, helps put the unenlightened aspects of Eurocentric ruptures front and center.

---

in time to locate catalysts of change; also see McNeill, "Energy, Population, and Environmental Change Since 1750."

[57] Scholars of Iberian empires have broadened our understanding of epistemic ruptures considerably; Cañizares-Esguerra, "On Ignored 'Scientific Revolutions'"; on "three revolutions," see Daston, "When Science Went Modern." For now-classic overviews, see Shapin, *Scientific Revolution*, and Dear, *Revolutionizing the Sciences*. For a recent reassessment of the idea's origins during the interwar decades, see Secord, "Inventing the Scientific Revolution."

[58] Teale, "Contribution of Colonial Geological Survey," 253. My thanks to Uchechukwu Oguchi for this reference.

[59] One way to measure a country's military is through its annual budget plus an inventory of hardware and weapons. For 2021, this metric produced a top twenty: the United States, Russia, China, Japan, India, France, South Korea, Italy, United Kingdom, Turkey, Pakistan, Egypt, Taiwan, Israel, Australia, Thailand, Poland, Germany, Indonesia, and Canada.

Thesis 5. Global Experiments: On Random Controls and Evidentiary Gold Standards

Experimental logics underpin our world and yet the foundations of experimental knowledge are often taken on faith and sometimes rest upon quicksand. The more that institutions invest in experimental trials and random controls, the more likely they will shore up a kind of make-believe world that benefits modern giants at the expense of everyone and everything else.

Early in their institution-building phase, Anglo-European historians of science adopted the view that experimental methods produced "positive" and "superior" knowledge, to quote George Sarton. "Science cannot progress," he wrote, "unless more and better observations and experiments are made all the time." This was a process. "Science is not a being, but a becoming. Thus the love of science is not the love of this or that system, which is bound sooner or later to be superseded by a better one, but simply the love of truth." While Sarton located sciences-in-the-making, from the sixteenth century onward, in "the West," he insisted that "the great intellectual division of mankind is not along geographical or racial lines, but between those who understand and practice the experimental method and those who do not understand and do not practice it."[60] The iconic site for this work came to be called a *laboratory*, but techniques of experimentation were in fact refined in many places: observatories, gardens, hospitals, museums, ships, asylums, schools, prisons, cities, dockyards, islands, empires, and field sites of all scales.[61] In the eyes of discipline-builders, the measure of a successful experiment was what it allowed people to do with new knowledge. The proof was in the pudding.

Students in a variety of fields are today taught that randomized controlled trials (RCTs) should be the global gold standard for evidentiary claims about the world, not just in the medical or natural sciences but also in economics and even law because these tools are defined as less fallible and more rigorous.[62] (Many specialists in computing likewise argue that al-

[60] Sarton, *Introduction to the History of Science*, 24, 25, 29.

[61] I am rehearsing here many of the sites David Livingstone covers in *Putting Science in Its Place*, another great teaching text for what it both includes and excludes. It pairs nicely with Mavhunga, *Transient Workspaces*.

[62] Historians have pointed out that semicontrolled trials began on islands and that their counterpart was the "thought experiment" of Thomas More's *Utopia* (1516), a nowhere land. So many ideas in the physical and environmental sciences developed out of forced and free migrations on a massive scale. Even medical experiments and the practice of informed consent have island and imperial histories. On RCTs in economics, see Webber and Prouse, "New Gold Standard," Rayz-

gorithms and artificial intelligence can make better decisions than humans, because they are designed to be more consistent and have the capacity to assimilate more information.)[63] The love of RCTs and algorithms—not to mention the tautological belief that the powerful have the right to conduct "global experiments" because of their powers—has become a kind of dogma. Area studies scholars have unintentionally reinforced these ideas by locating algorithmic methods deep in Asian and African history, including in children's games.[64]

Dhruva oversaw scientific labs of his own at BHU, yet he understood the fallacy of experimental logics: the very act of reducing variables and controlling for background noise (and subjective influences) could only ever yield "partial truths." The powers of these methods were undeniable, but so too were their blind spots. He and Sarton agreed on this point. The "true scientist," Sarton argued, was one who viewed his theories as "essentially incomplete and precarious." When seekers understood that knowledge and its by-products were unstable, they learned to move slowly and take precautions. Powerful people, by contrast, have often cast doubt on social critics and reacted to precautionary principles with scorn, as if those who urged caution (or argued that machines reflected the fallibilities of their makers) were the real danger. Here, modern giants are like the proverbial "bull elephant in a China shop." To quote Mark Zuckerberg, they aim to "move fast and break things," demanding to call the shots no matter the consequences.[65]

Thesis 6. Global Borders: On Ancestry and Ethnoracial Genealogies

Teachers tend to use the nation-state as a default unit of analysis to explain the past. These methods misconstrue history everywhere they predominate. For

berg, "Fairness in the Field," Donovan, "The Rise of the Randomistas," and Murunga and Ogachi, special issue of *CODESRIA Bulletin*. For a terrific overview of RCTs in law, including development and approaches to "crime," see Stevenson, "Cause, Effect, and the Structure of the Social World."

[63] Erickson et al., *How Reason Almost Lost its Mind*, introduction; Evans and Johns, *Beyond Craft and Code*; Pasquinelli, *Eye of the Master*; Wexler, "Life, Liberty, and Trade Secrets"; and Wexler, "Life, Liberty, and Data Privacy." My thanks to Tim Christiaens for the Pasquinelli reference.

[64] Pasquinelli's first chapter focuses on ancient India and Greece. Studies of African mathematics and counting systems make similar moves; see Tilley, "History and Historiography of Science"; Eglash, *African Fractals*.

[65] In various languages, the proverb is often about a bull elephant; when people started using the saying in English, they used "bull" only, and over time cattle were substituted for elephants.

better composite pictures, including of racial categories and their influences, it helps to think about borders-in-the-making, a method that brings into focus different kinds of polities, jurisdictions, and group genealogies.

Historians understand better than most people the dangers of ethnonationalism and the propaganda necessary to sustain blind patriotism. What we have a harder time addressing are the regional imbalances and nationalist tendencies built into most history departments and training methods. Sebastian Conrad has called national blinkers one of two significant "birth defects" of the social sciences, the other being Eurocentrism.[66] (His reproductive analogy brings to mind a third defect: male-centered worldviews, addressed below.) When writers and teachers use the nation-state as a default unit, it makes it harder to think with other juridical units that have existed within and beyond nations, including empires. Nationalist blinkers tend to ignore the extent to which most places have established extraterritorial rules and accommodated mixed jurisdictions within their borders over time.[67] Legal systems, empires, and borders matter because they have shaped ethnic and diasporic identities by necessity. Yet group consolidation, to invoke David Schoenbrun's work in the Great Lakes region of East Africa, was never inevitable: "group members embraced, refused, or shrugged off the importance of boundary . . . to belonging."[68]

People who have been forced to cross borders in large numbers or found themselves on the wrong side of a border have often had to confront xenophobia and violence. Borders have engendered social conflict at many scales. (You can only *trespass* when you cross a border that someone else controls.) As global borders became more fixed and contested in the nineteenth and twentieth centuries, they also influenced racial thinking and racial laws in regionally specific ways. Singling out just one place or one group-in-the-making as the source of racialized inequality globally misconstrues both the deep and recent past. Borders and ethnogenesis have left rhizome-like roots behind, which different groups have episodically brought back to life so their own social kind can gain more ground.

Saxe, Gandhi, and Dhruva inhabited racial logics of their own and well understood the way scientific and medical ideas of "fitness" were used to

[66] Conrad, *What Is Global History?*, 3–4.

[67] To teach some of these points, I use Tamanaha, "Understanding Legal Pluralism."

[68] The concept of empire allows scholars to include polities beyond those that Europeans created. Schoenbrun, *Names of the Python*, 35. Also see Ogundiran, *The Yorùbá*.

prevent some groups from being allowed to be full members of a polity. During the 1864 US election, for instance, two New York journalists affiliated with the Democratic Party wrote a fake pamphlet trumpeting the idea that Republican Party leaders believed "America" would progress more quickly if white people married "colored races" and if the states of the Union admitted more "peoples from other nations," especially Asia and Africa. (A history of "fake news" would include them.) If the idea of intermarriage did not put off (white male) voters, perhaps inverting credit for three pillars of European civilization would. The pamphlet went on to insist that "Caucasians . . . derived their ideas of Deity and the great hereafter from the earlier and darker races . . . [and] the sciences upon which we pride ourselves and the arts which we call our own, are derived primarily from the Asiatics and Africans."[69] The journalists' goal was to paint Republicans as an existential threat to the ethnonational order. They failed in the short term, but the word they coined to strike fear in the hearts of white families, *miscegenation*, or "the blending of the races" through sex, had a long afterlife, eventually reaching Afrikaner and English settlers in Southern Africa who used the word to frame their own parsing of biological "laws" that underpinned segregation.[70]

Gandhi had cut his teeth as a lawyer on just these debates in south Africa during his time there between 1893 and 1915. When the British colony of Natal's Legislative Council decided to disenfranchise all Indians in 1894, he jumped into action, working to prove that Indian migrants, who outnumbered their "white" counterparts in the colony, were not seeking "political supremacy" but only "equality with civilized races." Not only were people from India "in no way inferior to their Anglo-Saxon brethren," he argued, but the "Indian nation has known, and has exercised, the power of election from times far prior to the time when the Anglo-Saxon races first became

[69] The authors have been identified as David Croly and George Wakeman; see Kaplan, "Miscegenation Issue." Saxe traveled in the same circles and likely knew at least one of them; [Croly and Wakeman], *Miscegenation*, 23. Its title aside, the pamphlet dealt with questions of immigration as well as race-mixing, and it prophesied that "the most perfect and highest type of manhood will not be white or black, but brown" (65). Their early use of "America" and "American" in the title and text is noteworthy.

[70] The 1866 Union Square rally at which Saxe spoke included men carrying signs saying, "We are not in favor of the miscegenationists." For an overview in South Africa, see Findlay, *Miscegenation*. By 1869, the word was being used in German scientific publications about race-mixing in the United States. For a searing critique of Maryland's new law in 1887, see Johnson, an A.M.E. minister and collaborator with Frederick Douglass, "The Law on Miscegenation." Such laws predated the term, but over time these earlier laws were also associated with it.

acquainted with the principles of representation."[71] (Democracy, he insisted, had other origins.) Dhruva likewise had spent a good portion of his career working to counteract colonial hierarchies and ethnic "sectarianism." Still, although both men worked to oppose British efforts to partition Bengal (1905–1911), their open preference for Indians (in South Africa) and "Hindus" (in India) planted seeds that ethnonationalists cultivated for their own violent ends.[72] When Gandhi pushed BHU's leaders in 1920 to boycott their university as part of the noncooperation campaign, he justified his stance by saying "the University was not Hindu *enough*."[73] His strategies to liberate people from empire ran up against other types of social exclusion. BHU has played its own part in exacerbating tensions between Hindus and Muslims and was recently targeted for Hindutva takeover, located as it is in Prime Minister Modi's "parliamentary constituency" of Varanasi (the city once known as Banaras).[74]

Thesis 7. Global Personhood: On Being Human and Its Legal Fictions

All human beings exist in relation to others. This is true even when societies define structural or state obligations in terms of rights-bearing subjects. The concept of legal personhood—whether defined as human, corporate, machine, or other—has developed over time through a matrix of legal instruments and disciplines that conceal ecological connections and authorize legal fictions.

Corporate rights and human rights can both trace their roots to empires. Even so, the many books on the history of human rights tend to leave corporate charters to one side, while the many histories of capitalism tend to avoid painting a complete picture of legal personhood.[75] The blind spots

[71] Gandhi used ideas of fitness for citizenship in his correspondence with the premier of the Colony of Natal and in his open letters; Gandhi to John Robinson, June 29, 1894 (*Collected Works* 1:97–98); Gandhi, "The Indian Franchise: An Appeal to Every Briton in the Colony," December 18, 1895 (*Collected Works* 1:259); and Gandhi, "Open Letter [to Natal Legislative Council]," December 1894 (*Collected Works* 1:150).

[72] On Zulu ethnic consciousness and tensions with Indian populations in South Africa, see Marks, "Patriotism, Patriarchy, and Purity," and Borah, "Aftertaste of Empire."

[73] Renold, *Hindu Education*, 120, italics added.

[74] "Banaras Hindu University Needs Teachers, Gets Hindutva," *Telegraph of India*, November 23, 2022. https://www.telegraphindia.com/india/banaras-hindu-university-needs-teachers-gets-hindutva/cid/1899692.

[75] Two of my favorite books to teach aspects of personhood and rights, though neither addresses corporate personhood, are Szreter and Breckinridge, *Registration and Recognition*, and

are telling. Severing these histories makes it difficult to understand how warfare became so profitable to so many *public* companies—giving incentives to invest in lawful murder for money—or why corporations have more transnational subject rights—to control their destinies, defend their autonomy, and "speak" their minds—than pregnant persons.[76] Such topsy-turvy definitions go back to joint-stock companies themselves, which, as Jennifer Morgan and others have pointed out, were consolidated in the seventeenth century to rule across vast distances and did so in part by turning millions of human beings into actual commodities.[77] As Philip Stern elaborates, "all corporations [of this era] shared a common purpose: to bind a multitude of people together into a legal singularity, an artificial person that could maintain common rights, police community standards and behavior, and administer over and on behalf of the collectivity."[78] Artificial persons became over time like humans in the eyes of the law, one of the many legal fictions that muddies issues around free speech, corporeal sovereignty, and civil rights. You can almost hear Mallişeṇa object: when it comes to making life, he argued, "the making belongs to persons *with a body*."[79]

Being human, of course, means so much more than bearing rights: without social and natural connections, not to mention people who give birth, rights-bearing subjects literally cease to exist. Yet the legal scaffolding that has ushered both corporate persons and rights-bearing subjects into being tends to render invisible social reproduction, and it models laws on the bodies of people who do not and cannot carry life. Saxe, Gandhi, and Dhruva, for all their differences, each assumed that men were the right starting point to think about democratic governance. Women warranted an important place in society, to be sure, but they were an afterthought, brought to the table (or enlisted in movement strategies) only after corporate entities and institutions were molded to fit men's bodies.[80] Thus BHU's need to label only one building "College for Women," because all the others on campus were made

---

Weitz, *A World Divided*. Also see Lamoreaux and Novak, *Corporations and American Democracy*, which includes several excellent chapters on corporate personhood, though the national framework makes it tough to see how corporate personhood evolved in other parts of the world; it also leaves enslavement to one side. For a classic see, Carrithers, Collins, and Lukes, *Category of the Person*.

[76] Grant, *Rulers, Guns, and Money*; Boterbloem, *Dirty Secret of Early Modern Capitalism*.

[77] Morgan, *Reckoning with Slavery*, 74 and chap. 2.

[78] Stern, *Company-State*, 7.

[79] Mallişeṇa is explaining what it takes to *make* in the context of "the maker of the world"; in Dhruva, *Syādvādamañjarī of Mallişeṇa*, lxxxvi, italics in original.

[80] Kishwar, "Gandhi on Women." Gandhi wrote about and included women in his work, but this came after he had formulated his male-centered view of a rights-bearing subject. He started to

for men. Suffragist Frances Bailey had thought about just this issue when she made the case for women's full participation in *public* life. Male-centered precepts, she pointed out, tended to be wrong from the outset.

Bailey wanted to think about legal rights and *sense*-abilities—those *ŏb-sēr-vā'tions* that men might be unable to see—with and through women, including bodily differences.[81] To do so, she paid close attention to the reasons men gave for divisions of labor and compared these to actual hiring practices. Why did so many male business leaders, she mused, choose to employ (white) women in highly skilled work related to accounting and the "mechanical occupations," but still block their entry to the best university training programs and professional societies, including law and medicine?[82] Why did so many (male) scientists invoke biological evidence from "the lower animals"—about the superior strength and size of their male specimens—to draw conclusions about women's fitness or lack thereof for "self-government"?[83] Why indeed were voting rights linked in men's minds to those "who were capable of fighting" while "lawlessness in the State" was defined especially by male clergy as "the fault of the mother" whose children's disobedience could be cured only "by submitting meekly to her husband and letting [children] see that she obeyed him."[84] Bailey explained that "behind all our law stands force" and "masculine blunder," not to mention men's desire for "paternal and marital authority" even when other kinds of rules and roles were possible.[85] (Paternity, it is worth recalling, was not always easy for men to know.)

Bailey was herself groping in the dark and could not see everything. Her articles are silent on the struggles men unprotected by "whiteness" faced in gaining entry to universities and professions. She also sorted the wider world into Christians and "heathens," promoting mission work on every

organize with Indian women in South Africa only in 1913 and spoke of women as the "weaker sex" who could center domestic affairs (Kishwar, 1695).

[81] Partridge, "In Memoriam." Bailey's mother, also a writer, educated her through her teen years; Bailey then spent two years studying at the Normal School in Rhode Island and three more years of directed study focusing on zoology, literature, and political economy. She wrote at least thirty-five articles just for *The Woman's Journal* and thirty to forty "stories" and poems. She never married.

[82] Bailey, "Senses of Women."

[83] Bailey, "Jumping at Conclusions"; Bailey, "Motes and Beams"; and Bailey, "Massachusetts Institute of Technology." In her "Jumping" essay, she wrote: "It is superficial and unscientific to attempt to draw from a single species among the lower animals, any evidence which shall definitely indicate the relative status of human beings" (Bailey, "Jumping," 16).

[84] Bailey, "Reform Work for the *Boston Pilot*," 5; and Bailey, "Straws," 400.

[85] Bailey, "Reform Work for the *Boston Pilot*," 5; Bailey, "Professional Culpability," 22.

[194.230.147.62] Project MUSE (2024-08-13 16:20 GMT)

settled continent, especially as an avenue for "women of color" to convert and become professionals in their own right.[86] Bailey's organization, the Woman's Baptist Foreign Missionary Society, recruited many women to lead missions in Asia, Africa, Europe, and North America, including women of African descent: Louise Cecilia Fleming (1862–1899), Nora Gordon (1866–1901), and Clara Ann Howard (1866–1935) all directed early mission work in the Belgian Congo between 1887 and 1900.[87] Bailey's efforts to see through the maleness of legal norms and scientific theories helped her articulate the ways men made laws of corporate personhood and self in their own image. She considered this a mistake and a sign of society's "unconscious" elevation of men's roles and work.[88] She had a point.

Thesis 8. Global Governance: On Rules and World Ignorance

Rules that make the world better for all have existed in tension with rules designed to control the world for the few. Institutions of global governance were built by the few, for the few, even as they have aimed to be omnipresent. As seats at the table expanded, the majority has tried to change the rules to benefit the many, though their efforts run up against challenges of omniscience.

Builders of empires, political and scientific, have aspired to know all and *see* everywhere, while alleging their truths were dependent on nowhere.[89]

[86] Bailey, *Twenty Years of Gleaning*; on the recruitment of African American women for the Congo, see 16.

[87] Fleming, born to enslaved parents in Florida, was valedictorian of her graduating class at Shaw University in North Carolina (1885) and eventually became a medical doctor (1895), working in the Congo between 1887 and 1891 and again from 1895 until she died from sleeping sickness (African *trypanosomosis*) in 1899. Gordon, born to parents formerly enslaved in Georgia, was a graduate of Spelman Seminary and worked in the Congo from 1889 to 1893 and again, after marrying while on furlough, from 1895 to 1900. Howard was valedictorian of her Spelman Seminary class and worked in the Congo from 1890 to 1897; she joined the faculty at Spelman upon her return. Their work is recounted in Jacobs, "Three African American Women Missionaries."

[88] For her discussion of titles and credentials, see Bailey, "Render unto Caesar," 159. As she put it in this article, "There is nothing distinctively masculine about the affix, M.D. . . . I fail to see why [a degree] does not mean just as much conferred upon a woman as upon a man. Because it means something, it has a sort of commercial value to the woman who has won it. . . . Thus if in speaking of male physicians you habitually place the word Doctor before their names, and, in speaking of women physicians you habitually omit it, you are unconsciously challenging the comparative qualifications of the latter."

[89] I am playing here with debates in the history of science about views from nowhere and everywhere, which leave detailed histories of empire to one side; see Shapin, "Placing the View from Nowhere," and Selcer, "The View from Everywhere."

In English, the pretense of absolute authority is often called *imperiousness*, while efforts to flout reality can be labeled *ignorance*. Small wonder that both stances were hardwired by the few into institutions setting rules in the world for the many. To take a central example, when the word *international* was first applied to the word *law* in 1789 its author, Jeremy Bentham, did not mean to discuss the world as a whole, but only "civilized" nations.[90] Many regions of the world have had leaders who thought about appropriate rules, including means to traverse lands and waterways used by competing parties, but they were in less of a rush than peoples from Europe.[91] By the time other groups figured out the planetary stakes, they had to deal with thickets of law not of their own making.

Professors and judges within powerful countries had no problem being explicit about their vision and codifying it in their institutions and judgments, a process that included historical erasures too.[92] In his 1894 textbook *Principles of International Law*, John Westlake, for instance, asked his readers to join him in a thought experiment. "Let us suppose that the officers or private subjects of a European state, or of one of European origin, advance into a region where they find no native government *capable of controlling white men* or under which white civilisation can exist, and where also no state has yet acquired the sovereignty *under the rules which are internationally recognized between white men*."[93] These men were then within their rights, he argued, to impose their will by force and establish laws that made their actions legal. While Westlake's vision was part fantasy—anticipating a future resting on white dominance—his contemporaries knew it was also part fact, based on a past set of actions in which might did make right. His generation was happy to say everything out loud.

Bailey had tried to articulate just this point more than a decade before Westlake's book appeared. White men seemed to define force as a prerequisite

[90] Bentham, *An Introduction to the Principles*, cccxxiv, emphasis in original: "The word *international*, it must be acknowledged, is a new one . . . It is calculated to express . . . the branch of law which commonly goes under the *law of nations* . . . The chancellor D'Agueffeau has already made, I find, a similar remark: he says, that what is commonly called *droit* des *gens* ought rather to be termed *droit* entre *les gens*." This footnote was removed in later editions.

[91] Mancke spells out these patterns in "Oceanic Space"; also see Mancke, "Empire and State."

[92] On the erasure of conquest and enslavement in US legal textbooks over time, see Park, "History Wars and Property Law." For a detailed overview of the "constitution of the empire," see Blackhawk, "Constitution of American Colonialism."

[93] Westlake, *Principles of International Law*, 143, italics added. Westlake was on the faculty at Cambridge University, worked at Lincoln's Inn, and helped found the first journal of international law.

to a person's or group's right to "self-govern." As Oona Hathaway and Scott Shapiro argue, up through the mid-1920s "war wasn't a departure from civilized politics, it *was* civilized politics. Indeed, states could not imagine doing without it."[94] Gandhi and Dhruva of course knew firsthand the danger of white men's rules and their penchant for violence as they worked to expand their controls over more parts of the world. Seven centuries earlier, Mallişeṇa had implicitly warned people about rule makers who tried to be "*omni*present," because they tended to inflict their will on the majority rather than find ways to get "the many . . . to co-operate to produce a single result . . . without any conflict of wills or consequent confusion." Methods of noninjury or nonviolence—*ahiṃsā*—were tools rulers could use for just this purpose: to address the fact that "knowledge does not actually travel from the knower to the known." Those who aspired to *know all* would find it hard to be *everywhere*. Or, as Mallişeṇa put it, "omniscience does not necessarily involve omnipresence."[95]

One of the main tickets for early admission to "international" organizations tended to be the ability to resist European force or the will of "white men." Japanese leaders said as much after their 1894–1895 contest and victory over China for their new claims of influence in Korea. "Now that we have tested our strength," wrote journalist and historian Tokutomi Sohō, "we know ourselves and we are known by the world." One of Sohō's contemporaries, Okakura Kakuzō, assessed the situation in more pessimistic terms: "European imperialism, which does not disdain to raise the absurd cry of the Yellow Peril, fails to realize that Asia may also awaken to the cruel sense of White Disaster." Summarizing Kakuzō's body of work, historians of the Sino-Japanese conflict were just as blunt: it was "only when Japan had shown its ability to equal the West in killing and destruction that the West accepted it as civilized."[96]

[94] While I disagree with their categories and wider argument, especially about "failed states," I agree with this point. Hathaway and Shapiro, *Internationalists*, xiv.

[95] Mallişeṇa, quoted in Dhruva's introduction, lxxxviii. For a genealogical analysis of Dhruva's phrase "intellectual *ahiṃsā*" and Jain arguments about omniscience, see Cort, "'Intellectual *Ahiṃsā*' Revisited." My thanks to Eric Gurevitch for this reference. Because Cort is focused on tolerance, he is less interested in Mallişeṇa's points about *omnipresence* and whether knowledge travels from knower to known.

[96] Sohō and historians quoted from Jansen et al., "The Historiography of the Sino-Japanese War," 191. Kakuzō, *The Book of Tea*, 12. On Sohō's turn to militarism, see Pierson, *Tokutomi Soho*, chap. 7, "Friend of the Oligarchs"; on Kakuzō's "ultra nationalism," see Clark, "Okakura Tenshin [Kakuzō]."

Critics who seek a better world often denigrate institutions of global governance—especially the League of Nations and the United Nations and their agencies—because they grew out of empires and still operate according to imperial logics. This is understandable and can also be a strategic mistake. The alphabet soup of institutions that so many parts of the world cannot avoid still affords people openings to speak a new language and forge new worlds.[97] Scholars, especially in the history of science, who can avoid the alphabet soup of global institutions inadvertently reveal the world-erasing tools of "modern giants." They have succumbed, consciously or not, to those masters of distraction whose evidentiary trails are designed to reproduce ignorance of certain places and peoples.

Radical inequalities at all geographical scales *do* need to be understood to be altered. Such research inevitably runs through global organizations and their kaleidoscopic world orders. This kind of study is never time wasted *if* one keeps one's sights on the long view and one remembers to keep open bridges across continents. Kakuzō lamented in 1906 that all around him he saw a geopolitical "struggle for wealth and power." "The world is groping in the shadow of egotism and vulgarity. Knowledge is bought through a bad conscience, benevolence practiced for the sake of utility."[98] Scholars have theorized both instrumental knowledge and strategic ignorance, but they have not always paid enough attention to the different ways those allegedly "known" continued to assert their own agency in ways that belied dominant truth claims, especially in the human sciences.[99] The majority of the planet's people have indeed pushed back often against the will of the powerful minority, not just by being ungovernable or deploying their own weapons (of the weak), but by insisting on setting terms for their own self-governance and self-knowledge.[100] Nonhuman nature too, while domesticated and "known" at the planetary level, can take its revenge precisely

[97] A few books I enjoy teaching that get at these openings include Medina, *Cybernetic Revolutionaries*; Hecht, *Being Nuclear*; and Selcer, *Postwar Origins of the Global Environment*. For a useful essay on method, see Biltoft, "Sundry Worlds within the World."

[98] Kakuzō, *The Book of Tea*, 20.

[99] The field of ignorance studies has flourished, but the question of whether and how knowledge *travels* between knower and known—the limits of human consciousness in other words—still needs more attention. McGoey gets at the geopolitical side in *The Unknowers*.

[100] Here I am invoking the work of Scott, *Weapons of the Weak* and *The Art of Not Being Governed*.

because humans need it for their very survival, though leaders like to pretend otherwise.[101]

Thesis 9. Global Piracy: On Enclosures and Intellectual Theft

There is no question that private property has been an organizing force around the world and that ideas too have been an arena for enclosure, known as intellectual property. Yet framing intellectual property primarily in terms of theft can misconstrue global histories of creativity, know-how, and ontology, and lock critics into capitalist and punitive logics, which have dangers of their own.

For most parts of the world, intellectual property as legal doctrine has rather shallow roots. That's why J. E. Casely Hayford (1866–1930), a legal scholar from colonial Ghana (Gold Coast) who had trained in London, could write as late as 1911 that "knowledge is the common property of mankind."[102] A specialist on colonial land claims and dispossession, Hayford understood better than most that building fences, mapping lands, creating three-dimensional systems of territorial control, and establishing rules of ownership and exchange involved different kinds of labor than efforts to fence off ideas or stake claims to innovations. In fact, these conversations were only just accelerating as borders became more fixed and officials in rich countries realized that coarse legal concepts needed polishing so economic wheels could turn more smoothly. For historians, this means that whether the topic is copyright, patents, trademark, trade secrets, or trade-related intellectual property, the pasts of these legal phenomena are still misunderstood on a global scale because they have been examined in a lopsided way, with most scholars focusing on the lands and languages of "modern giants," typically ignoring or failing to compare developments in other places.[103] When scholars of those neglected places—in the so-called Global South—start to write stories about intellectual property, especially in multilingual situations where the cast of characters comes from different continents, they

[101] My first article focused on the Frankfurt School's ideas about nature's revenge and their shift from seeing the domination of human and nonhuman nature as a net gain to a net loss for humanity. Denham (now Tilley), "Cunning of Unreason and Nature's Revolt."

[102] Hayford, *Ethiopia Unbound*, 169.

[103] There are good reasons to begin with the powerful, including their geographical reach, but these methods can still have blind spots. For useful overviews, see Johns, *Piracy*, and Biagioli and Buning, *Technologies of Law*.

sometimes make magical moves around theft that take audiences' eyes off the tangible differences between knowing and doing.[104]

Authors understandably embrace the role of trickster, making social practices seem similar and familiar ("look at how blatant this theft was") without sufficiently examining the steps in the heist or the stranger things that were left out of—or put into—the new package. Consider, for instance, epistemic and therapeutic differences between industrial pharmaceuticals and multispecies remedies, including those with ritual applications. Theft is real, but also fabricated; it is part of a wider dynamic of property relations. Analysts who want to historicize piracy and intellectual enclosures are not wrong to note the prevalence of appropriation, nor are they wrong to want to redistribute wealth based on past harms. Yet, in playing this game in print, critics sometimes lock themselves into a storytelling logic of crime *without* punishment and a legal logic of profits *without* sharing. The critiques, in other words, lay the grooves for the solution to be criminal penalties and privatized wealth. To judge the alleged crime, audiences will expect the forensic evidence to align with the criminal accusations and, if not, they might rebel (and jeer) at the wider goals. In rich countries with growing authoritarian cultures, the stakes of making accurate historical claims around intellectual theft can be higher because fascist-leaning readers may choose to subject different groups of experts to targeted attack, *even when they are right*.[105]

If claims are demonstrably wrong, reactionary figures may use this evidence to fuel dangerous ethnonational and patriarchal fires. It is not just scholars who are made more vulnerable then: the very groups and regions of the world these historians claim to be defending usually experience the fiercest—and most violent—*frontlash*. This term, coined a century after *miscegenation*, arose out of the 1964 US presidential election during an exchange between Dr. Aaron Henry of the Mississippi Freedom Delegation and a CBS news anchor, Roger Mudd. In answering a question about white efforts to roll back African Americans' rights, Henry described the situation not as a backlash but a "forward lash" because the majority group

[104] These studies often overestimate the role of patents in driving innovations and profits too; see Moser, "Patents and Innovation."

[105] Academics working in different fields have experienced targeted harassment for decades, including those working on labor, civil, and human rights; ethnic and Black studies; environmentalism and environmental science; trans, gender, and disability rights; prison and military abolition; indigenous and imperial histories (especially those studying active conflicts), and corporate wrong-doing and white nationalism.

controlled the narrative and insisted on wielding disproportionate powers. During the debate debrief, Mudd shortened the term to "frontlash." Following President Johnson's acceptance speech for the Democratic nomination, he repeated the term when answering journalists' questions about a "white backlash," saying newsmen should pay more attention to the *frontlash*.[106]

While taking is part of any story about capital accumulation—in the form of unremunerated or stolen labor, undervalued or pilfered resources, and pirated people (or body parts)—when scholars choose to use a language of thievery around knowledge, they risk doing damage to past actors' reasons for creating or being.[107] There is an *Alice in Wonderland, Through the Looking Glass* dynamic in play: on one side of the glass are kinds of instrumental knowledge and creative work that scholars put in their proper places: a song, a story, a drug, an industrial process, a brand name, a secret ingredient, a cell line, a work of art, a piece of hardware, an application.[108] Scholars then don their detective hat and step through the glass to go looking for origins or counterparts. Who first made this song, wrote this story,

[106] Sackett, "Frontlash," 157–58. More recently, scholars have used "whitelash" as an equivalent term. On Henry, see Morrison, *Aaron Henry of Mississippi*.

[107] I taught these points in my most recent graduate seminar using the technical critiques and wider debate surrounding Bulstrode's "Black Metallurgists and the Making of the Industrial Revolution," which aimed to tell a symmetrical story about mostly enslaved West African metallurgists in a Jamaican foundry and Henry Cort's 1784 patent for a new technique to produce iron bar from scrap metal. Her claims of technical innovation and theft do not stand up to scrutiny. Yet her defenders, to ward off bad-faith attacks, chose to circle the wagons and suggest that critics who wanted to correct the record must object to the idea of African innovation and/or reparations for slavery. Alas, this is bad strategy on top of bad history. Institutions have a duty to protect scholars from targeted harassment and many have a mixed track record. But editors and authors should be willing to admit mistakes. A few senior historians wanted to make this a story about "progressive" ideology influencing research, but I see it more as a set of unforced errors in a field, the history of science and technology, that has barely taken *longue durée* African history seriously. Were African history central to training programs, more scholars would know the relevant languages, have mastered the core scholarship, and trained with the right specialists. Assuming everyone involved intended the best, the author and editors were still willing to sacrifice the life stories of the metallurgists in order to insist, without sufficient evidence, that Henry Cort stole and patented their innovations. How does this stance help reparations campaigns? Tellingly, the right-wing assault on Black faculty and Black and imperial history programs in Britain continues apace and has yet more fodder for the fire. The most astute public interventions on the controversy were by Anton Howes, "Cort Case," "Does History Have a Replication Crisis?," and "How to be a Public Historian." For her defense, see Slaton and Saraiva, "Editorial," and the British Society for the History of Science Council, "Statement on 'Black Metallurgists.'"

[108] For two different kinds of cross-cultural studies framed in terms of appropriation and theft, respectively, see Coombe, *Cultural Life of Intellectual Properties*, and Osseo-Asare, *Bitter Roots*.

used this drug, came up with this process, had this brand, knew the secret ingredient, inspired this art, invented the hardware, possessed these body parts, wrote this app? But if scholars define and package everything on the other side according to the world of giants-in-the-making, they run into problems, trimming evidence in ways that may not work and leaving lots of actual ideas on the cutting-room floor. To make sense of both sides of the looking glass requires technical know-how that often takes too much *time* to acquire: thus the need for authorial wizardry—"trust me, this is what stealing looks like"—as long as audiences promise not to probe too deeply into the Hatter's claim that the Queen stopped time.[109]

The founders of Banaras Hindu University had to walk this razor's edge of meaning and motive even at the opening ceremony in 1916. With Mohandas Gandhi waiting in the wings, Annie Bessant (1847–1933) gave her own speech explaining the difference between cultural and literal riches. The desire for profits, she implied, tended to destroy cultures that had taken a great deal of time to create. The university would be a failure, she insisted, if its aim was only "for the training of youths for wealth and prosperity." BHU's role would be "to take up the great Hindu culture and enrich it, but not supplant it, with all that the other civilizations can give." She then told a story about the scientific work of Jagadish Chandra Bose (1858–1937), whose research on plant physiology and microwaves was already widely celebrated.[110] During his time in England, she explained, Bose's innovations in telegraphy caught the attention of Guglielmo Marconi, who recognized their usefulness for his Wireless Telegraphy Company, but who could not benefit from it, "unless they took a patent of his ideas." So, they offered to pay Bose for his knowledge. "What did Dr. Bose answer?" Bessant asked the crowd. "He said: 'I will never sell my knowledge; I will tomorrow give to the world everything that I have discovered by my investigation.' To a Hindu, to think of knowledge as a source of gain was a sacrilege."[111] Bessant was right about Bose's motives. He was never driven by financial incentives beyond a desire for equal pay at his university. He dedicated his 1902 book, *Response in the Living and Nonliving*, to his "countrymen," using a *Rig Veda* quote on

[109] An enduring motif of both *Alice in Wonderland* and *Through the Looking Glass* was time's relationship to space and reality, including the idea of space-time portals; see Beer, "Mathematics: Alice in Time." The iconic scene in the film version of *The Wizard of Oz* was even more explicit about wizardry and a lack of evidence: "Pay no attention to that man behind the curtain." Langley, Ryerson, and Woolf, *Wizard of Oz*, 121.

[110] Poskett provides terrific context for Bose's earlier work; Poskett, *Horizons*, 237–44.

[111] Bessant, quoted in Dar and Somaskandan, *History of Banaras Hindu University*, 362.

[194.230.147.62] Project MUSE (2024-08-13 16:20 GMT)

the frontispiece, "The real is one; wise men call it variously." Bose's life work, Bessant insisted, was to be one of those wise men, pursuing knowledge of the real "for its own sake." This included getting at the heart of reaction times to electrical, chemical, and visual stimuli in animate and inanimate things alike. How else to understand recovery times from fatigue or "poison," and "unconscious visual impressions" and their possible "psychical effects"?[112]

Yet Bessant's patent story was misleading. Bose had indeed taken out a patent on his electrical techniques, persuaded by an American activist with an interest in Hindu philosophy, Sara Chapman Bull. They filed the claim jointly in England (six weeks before Marconi filed his own patent), an application granted in 1902, and Bose filed alone in the United States, approved in 1904.[113] Bose chose never to capitalize on his patents and let them expire, as was the fate of the bulk of patent claims then and now. (For Marconi, this meant Bose became irrelevant to his own pursuit of profits and public rewards.) People in India, however, recognized that a starter gun to enclose their expertise had been fired.[114] Gandhi himself, with his focus on self-rule (*swaraj*) and "devotion to the Motherland," inadvertently encouraged his compatriots to join such efforts by patenting products that drew upon *Indian* knowledge.[115] These moves were neither theft nor piracy at the time, but responses—and sometimes forms of resistance—to other kinds of capital and political enclosures.[116] Those who compare the history of intellectual property regimes around the world using fine-grained evidence reveal that there has never been just one "patent episteme" but many,

[112] Bose, *Response in the Living and Nonliving*, chaps. 5, 15, 16, and 19; quotations on 143–44, 179–80.

[113] "Improvements in and Connected with Wireless Telegraphy and Other Signalling," Patent GB190115467A, filed July 30, 1901, granted July 30, 1902. Shortly thereafter, Bose secured his own patent in the United States, "Detector for Electrical Disturbances," US755840A, filed September 30, 1901, granted March 29, 1904. Marconi filed his patent application on September 10. For background, see Bondyopadhyay, "Sir J. C. Bose's Diode Detector," 270, 285.

[114] For the prehistory, see Sagar, "Patent Policy in India under the British Raj." There were four versions of India's patent acts between 1856 and 1911. Just over 15,000 patents were approved through Calcutta's office between these years, with 124 taken out by Indian nationals. Another 42,498 were taken out between 1911 and 1947, with nearly 6,000 taken out by Indian nationals (Sagar, 296).

[115] Winterbottom tells the story of soaps patented in the 1920s that used ingredients from the neem tree; "Becoming 'Traditional.'" Though she does not spell this out, the earliest patent claims discussed neem's medicinal applications.

[116] I address the resistance angle in Tilley, "Traditional Medicine Goes Global."

and that intellectual property infrastructures have served multiple and competing functions.[117]

Thesis 10. Global Metrics: On Counting and Illusory Qualities

Governments and corporations play a central role in defining data about life and death, wealth and health. Their systems of measurement make it difficult for majorities to change the terms of debate and insist upon new measures for a good life. Embedded in most governing metrics are bad-faith assumptions about humans and their natures that let the powerful behave badly.

There were many things that people of Mallişeṇa's time did not and could not anticipate. One of them was metrics. Historians of science have spent decades studying "the mechanization of the world picture," alongside the rise of machines and industrial orders.[118] Included in these stories have been histories of Cartesian coordinates and Newtonian calculus, not to mention the Arabic roots of algebra and binary coding. But the overreliance on measures and models as stand-ins for reality was hard to imagine. These now run the gamut from model organisms to computer simulations, mathematical equations to surrogate effects (for bodily health risks), economic forecasts to demographic projections, gross domestic product to institutional (and country) rankings, classification schemas to measures of system resilience.[119] If you take a close look at the different kinds of metrics and "exemplary narratives" in play around the world you can easily get dizzy and disoriented. This is when you might begin to grasp and even yearn for Mallişeṇa's sixth type of "perfect knowledge," the kind that is "entirely liberated . . . from the bondage of matter." When metrics and models mushroom, they can become an epistemological straitjacket that even clear-minded people find it tough to escape. So, what to do and how to navigate the global divides such metrics create?

Teachers need not reject every "world in the model" to help students see metrics' possibilities and dangers.[120] Dhruva's penchant for pulling back and taking a telescopic view comes in handy. No model, however encompassing

[117] Here I am thinking with Alain Pottage, Mario Biagioli, and Graham Dutfield, among others; Pottage and Biagioli, "Patenting Personalized Medicine"; and Posey and Dutfield, *Beyond Intellectual Property*. Gooday and Wilf make a related point in their introduction to *Patent Cultures*.

[118] Dijksterhuis, *Mechanization of the World Picture*.

[119] Two books that get at this breadth are Creager, Lunbeck, and Wise, *Science without Laws*, and Davis et al., *Governance by Indicators*. Also see Edwards, *A Vast Machine*.

[120] Morgan, *World in the Model*; Raworth, *Doughnut Economics*.

it may seem, has total power, and many can be dismantled and challenged more easily than people—both on the margins and in seats of power—might think. We learn this, in fact, from those "merchants of doubt" who have succeeded in turning people away from worrying about health and environmental threats and from the political strategists who have successfully invested words with magically negative powers, for instance, "communist," "socialist," "politically correct," or "woke."[121] When analysts take different regions seriously and pivot across them, it becomes easier to see where such metrics are vulnerable and how to change them. Often, these moves turn up other mantras that express people's frustrations with metrics' limits. No one wants to be just a number.[122] Even the most complex systems should have at their core moral and humane reasons for being.

Leaving War Elephants and Traveling Illusions Behind

There are more ways to parse the science/knowledge divide, but my hope is that these are useful starting points for debate. Anyone training in these subjects will want to figure out which divides their questions examine and remember that no matter the scale, historical research will only ever yield partial truths. Unlike certain deities, mere mortals work within limits by default. That's partly why Malliṣeṇa and Dhruva were so concerned with the kind of "knowledge that we ordinary human beings acquire." As Dhruva elaborated, this involved "first a bare concept, next a desire for detailed knowledge, then the detailed knowledge, and lastly holding the knowledge as a permanent possession in the mind." For both men, elephants were good to think with and so too were folk who lacked sight. The parable was a constant reminder for them of the many-sided nature of truth and the challenges of perceiving reality in its entirety. Dhruva and Gandhi, Saxe and Bailey all shared these preoccupations. If ordinary humans could just find the right systems of truth and organize their societies around them, they might also find ways to achieve true peace. "The Blind Men and the Elephant" served as a useful heuristic for this quest.

Yet elephants had been integral to cultures of war for millennia. In his many-thousand-year history, Thomas Trautmann notes that as humans

[121] Oreskes and Conway, *Merchants of Doubt*; Feldstein, *Political Correctness*. Conservative and authoritarian strategists make no secret of the fact that they co-opt people-centered critique and terms, turning them into fear-mongering slogans mobilized to resist or roll-back positive change.

[122] Murphy, *Economization of Life*. A related classic is Porter, *Trust in Numbers*.

expanded their habitat in China, especially in the first millennium CE, elephant populations declined. But where monarchs enlisted elephants in war, first in the Indian subcontinent and then across different parts of Eurasia, their populations were sustained because their habitats were conserved.[123] This explains why, when Persian philosopher 'Azīz ibn-Muhammad al-Nasafi wrote down his own version of the parable, also in the thirteenth century, he stressed elephants' role in conflict and the place of print cultures in resolving disputes. Once al-Nasafi's blind men learned that their touch had revealed only a limited perspective, they doubled down on their positions by invoking textual "proofs." "'It is written,' the first said, 'that in war the elephant is sent out ahead of the army. Consequently the elephant must be a shield.' The second said, 'It is written that in war the elephant hurls himself at the hostile army and that the hostile army is thereby shattered. Consequently the elephant must be a kind of club.'"[124] War and human contests over reality were in al-Nasafi's telling two sides of the same coin. His parable ends with the "seer," who "perceived and knew the elephant as it really is," being told by the others, "Your brain is defective and madness assails you." The ultimate lessons of the parable may be these: those who perceive more in a world full of illusions always risk being considered insane as they run up against dogma; what is written down may be no more true than insights that stem from oral cultures; and unknowable things, past and present, are just as important as known certainties.

Environmental historians like to think with nonhuman species too, and some might be clamoring to add that elephants are matriarchal, which has helped ensure their survival. That said, their species is also imperiled and, following Pacific Islanders' efforts with whales and rivers before them, elephants may soon be a candidate for legal personhood.[125] Imperial historians might chime in to say elephants and ivory played a role in European conquests of African and Asian sites, leading to popular children's stories about war and empire, such as Jean de Brunhoff's *Babar* series and Rudyard Kipling's *Just So Stories* and *The Jungle Book*. But the elephant in the room for historians of science remains the ease with which some of its authors still

[123] Trautmann, *Elephants and Kings*. See esp. chap. 4, "Elephant Knowledge," and pt. 2, "The Spread of the War Elephant."

[124] All quotations from al-Nasafi in Meier, "Problem of Nature," 164. The other two men saw the elephant as a pillar and a seat. While the translator used "brain," I suspect the original probably meant something closer to "mind."

[125] Takoko, "A Descendant's Call for Whale Legal Personhood." Also see Salesa, *An Indigenous Ocean*.

inadvertently reinforce too many traveling illusions of modern giants, including their measures of value. As Mallişeṇa reminds us, just because some kinds of knowledge circulate globally does not make them true; and just because some knowers have a big platform and profess to know so much does not make their claims about reality automatically more trustworthy than certain tales of make-believe.

Lorraine Daston once asked in her own survey of the science/knowledge divide, "Can the history of knowledge be saved?" She had in mind the field's amorphous and contradictory mission. It is also fair to ask if the history of science is worth saving. As Daston points out, the field's "original disciplinary narrative . . . is simply untenable on scholarly grounds."[126] Still, ridding it of its flawed precepts remains an unfinished project. In my own work trying to bridge divides between African, imperial, and science studies, I have long wondered whether "the history of science [is] ready for the world."[127] The field is getting there, partly because people working to change things from the outside in have stayed involved, but a more frank assessment of its blind spots and partial perspectives is still needed.[128]

References

Albaugh, Ericka, and Kathryn de Luna, eds. *Tracing Language Movement in Africa*. Oxford: Oxford University Press, 2018.

Amstutz, Andrew. "Finding a Home for Urdu: Islam and Science in Modern South Asia." PhD diss., Cornell University, 2017.

Andersen, Hans Christian. "The Emperor's New Clothes." In *The Fairy Tales of Hans Christian Andersen*, edited and translated by Neil Philip, 246–51. London: Reader's Digest Association, 2004.

Anonymous "Indian Nationalist." "The Proposed Hindu University." *Hindustan Review* 13 (1905–6): 361–73.

Anonymous. "Book Table: Holton Curry Readers." *Journal of Education* 81 (1915): 301.

Anonymous. "Extracts from the Journal of Baboo Krishna Lall Moonshee." *Home and Foreign Missionary Record for the Free Church of Scotland* 16 (January 1, 1861): 10–12.

[126] Daston, "History of Science and the History of Knowledge," 144.

[127] Tilley, "Global Histories, Vernacular Science, and African Genealogies."

[128] My thanks to Pablo Gómez, Gabriela Soto Laveaga, Sean Hsiang-lin Lei, Projit Mukharji, and Marwa Elshakry for discussing this point with me over the years.

Anonymous. "Foreign Missions: Native Catechists." *Home and Foreign Missionary Record for the Free Church of Scotland* 2 (November 1, 1846): 535–36.
A. R. B. "The Blind Men and the Elephant." *Chatterbox Magazine*, no. 2 (1884): 14.
Bailey, Frances Stoughton. "The Blind Men and the Elephant." *Woman's Journal* 14 (April 21, 1883): 127.
———. "Jumping at Conclusions." *Woman's Journal* 10 (January 11, 1879): 16.
———. "The Massachusetts Institute of Technology." *Woman's Journal* 12 (July 23, 1881): 236.
———. "Motes and Beams." *Woman's Journal* 10 (February 15, 1879): 51.
———. "Professional Culpability." *Woman's Journal* 10 (January 18, 1879): 22.
———. "Reform Work for the *Boston Pilot*." *Woman's Journal* 10 (January 4, 1879): 5.
———. "Render unto Caesar the Things Which Are Caesar's." *Woman's Journal* 11 (May 15, 1880): 159.
———. "The Senses of Women." *Woman's Journal* 10 (May 3, 1879): 138–39.
———. "Straws." *Woman's Journal* 12 (December 10, 1881): 400.
———. *Twenty Years of Gleaning: A Historical Sketch of the Woman's Baptist Foreign Missionary Society*. Boston: Woman's Baptist Foreign Missionary Society, 1891.
———. "We Will Not Have Her Selfish." *Woman's Journal* (July 29, 1882): 236.
Balcerowicz, Piotr, ed. *Essays in Jaina Philosophy and Religion*. Delhi: Motilal Banarsidass, 2003.
Beer, Gillian. "Mathematics: Alice in Time." *Nature* 479 (November 3, 2011): 38–39.
Bentham, Jeremy. *An Introduction to the Principles of Morals and Legislation*. London: T. Payne and Son, 1789.
Biagioli, Mario, and Marius Buning, eds. *Technologies of the Law / Law as a Technology*. *History of Science* 57 (2019): 1–163.
Biltoft, Carolyn. "Sundry Worlds within the World: Decentered Histories and Institutional Archives." *Journal of World History* 31 (2020): 729–60.
Bindu, Sri Krishna Kathamrita. "The Blind Men and the Elephant." *Bindu*, no. 540 (January 2023): 21–24.
Blackhawk, Maggie. "The Constitution of American Colonialism." *Harvard Law Review* 137 (2023): 1–152.
Bondyopadhyay, Probir. "Sir J. C. Bose's Diode Detector Received Marconi's First Transatlantic Wireless Signal of December 1901." *Proceedings of the IEEE* 86 (1998): 259–85.
Borah, Abikal. "Aftertaste of Empire: Amandiya and Racial Violence in South Africa (1843–1949)." PhD diss., University of Texas-Austin, 2021.
Bose, Jagadis Chunder. *The Living and Non-Living*. London: Longman's, Green, 1902.
Boterbloem, Kees. *The Dirty Secret of Early Modern Capitalism: The Global Reach of the Dutch Arms Trade in the Seventeenth Century*. New York: Routledge, 2020.
British Society for the History of Science Council. "Statement on 'Black Metallurgists and the Making of the Industrial Revolution.'" November 22, 2023.

https://www.bshs.org.uk/bshs-council-statement-on-black-metallurgists-and-the-making-of-the-industrial-revolution.

Bulstrode, Jenny. "Black Metallurgists and the Making of the Industrial Revolution." *History and Technology* 39 (2023): 1–41.

Burke, Peter. *The Social History of Knowledge: From Gutenberg to Diderot*. Cambridge: Polity Press, 2000.

———. *The Social History of Knowledge: From the Encyclopaedia to Wikipedia*. Cambridge: Polity Press, 2012.

Burnett, Frances Hodgson. *The Secret Garden*. New York: Frederick Stokes, 1911.

Cañizares-Esguerra, Jorge. *How to Write the History of the New World: Histories, Epistemologies, and Identities in the Eighteenth-Century Atlantic World*. Palo Alto, CA: Stanford University Press, 2001.

———. "On Ignored 'Scientific Revolutions.'" *Journal of Early Modern History* 21 (2017): 420–32.

Carrithers, Michael, Steven Collins, and Steven Lukes, eds. *The Category of the Person: Anthropology, Philosophy, History*. Cambridge: Cambridge University Press, 1985.

Chakrabarty, Dipesh. *The Calling of History: Sir Jadunath Sarkar and His Empire of Truth*. Chicago: University of Chicago Press, 2015.

Clark, John. "Okakura Tenshin [Kakuzō] and Aesthetic Nationalism." *Arts: The Journal of the Sydney University Arts Association* 25 (2003): 64–89.

Conrad, Sebastian. *What Is Global History?* Princeton, NJ: Princeton University Press, 2016.

Coombe, Rosemary. *The Cultural Life of Intellectual Properties: Authorship, Appropriation, and the Law*. Durham, NC: Duke University Press, 1998.

Cort, John. "'Intellectual *Ahiṃsā*' Revisited: Jain Tolerance and Intolerance of Others," *Philosophy East and West* 50 (2000): 324–47.

Creager, Angela, Elizabeth Lunbeck, and Norton Wise, eds. *Science without Laws: Model Systems, Cases, and Exemplary Narratives*. Durham, NC: Duke University Press, 2007.

[Croly, David, and George Wakeman.] *Miscegenation: The Theory of the Blending of the Races, Applied to the American White Man and Negro.* New York: Dexter, Hamilton, 1864.

Cruickshank, Julie. *Do Glaciers Listen? Local Knowledge, Colonial Encounters, and Social Imagination*. Chicago: University of Chicago Press, 2005.

Dar, S. L., and Somaskandan, S., eds. *History of the Banaras Hindu University*. Varanasi: BHU, 1966.

Daston, Lorraine. "The History of Science and the History of Knowledge." *Know* 1 (2017): 131–54.

———. "When Science Went Modern." *Hedgehog Review* 18, no. 3 (Fall 2016). https://hedgehogreview.com/issues/the-cultural-contradictions-of-modern-science/articles/when-science-went-modern.

Daston, Lorraine, and Peter Galison. *Objectivity*. New York: Zone Books, 2007.
D'Avignon, Robyn. *A Ritual Geology: Gold and Subterranean Knowledge in Savanna West Africa*. Durham, NC: Duke University Press, 2022.
Davis, Kevin, Angela Fisher, Benedict Kingsbury, and Sally Engle Merry, eds. *Governance by Indicators: Global Power through Quantification and Rankings*. Oxford: Oxford University Press, 2012.
Dear, Peter. *Revolutionizing the Sciences: European Knowledge in Transition, 1500–1700*, 3rd ed. Princeton, NJ: Princeton University Press, 2019.
De Luna, Kathryn. *Collecting Food, Cultivating People: Subsistence and Society in Central Africa*. New Haven, CT: Yale University Press, 2016.
Denham, Helen. "The Cunning of Unreason and Nature's Revolt: Max Horkheimer and William Leiss on the Domination of Nature." *Environment and History* 3 (1997): 149–75.
Dhruva, A. B., ed. and trans. *Syādvādamañjarī of Malliṣeṇa*. Bombay: Y. K. Padwal, 1933.
Dijksterhuis, E. J. *The Mechanization of the World Picture*. Oxford: Oxford University Press, 1961.
Donovan, Kevin. "The Rise of the Randomistas: On the Experimental Turn in Development Aid." *Economy and Society* 47 (2018): 27–58.
Edwards, Paul. *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming*. Cambridge, MA: MIT Press, 2010.
Eglash, Ron. *African Fractals: Modern Computing and Indigenous Design*. New Brunswick, NJ: Rutgers University Press, 1999.
Ehret, Chris. *History and the Testimony of Language*. Berkeley: University of California Press, 2011.
Elman, Benjamin. *On Their Own Terms: Science in China, 1550–1900*. Cambridge, MA: Harvard University Press, 2005.
Elshakry, Marwa. *Reading Darwin in Arabic, 1860–1950*. Chicago: University of Chicago Press, 2013.
Erickson, Paul, Judy Klein, Lorraine Daston, Rebecca Lemov, Thomas Sturm, and Michael Gordin. *How Reason Almost Lost Its Mind: The Strange Career of Cold War Rationality*. Chicago: University of Chicago Press, 2013.
Evans, James, and Adrian Johns, eds. "Beyond Craft and Code: Human and Algorithmic Cultures, Past and Present." *Osiris* 38 (2023): 1–328.
Fabian, Johannes. *Out of Our Minds: Reason and Madness in the Exploration of Central Africa*. Berkeley: University of California Press, 2000.
Feldstein, Richard. *Political Correctness: A Response from the Cultural Left*. Minneapolis: University of Minnesota, 1997.
Findlay, George. *Miscegenation: A Study of the Biological Sources of Inheritance of the South African European Population*. Pretoria: Pretoria News and Printing, 1936.

[194.230.147.62] Project MUSE (2024-08-13 16:20 GMT)

Gandhi, Mohandas. *The Collected Works of Mahatma Gandhi.* Vol. 1, *1884–1896*. Delhi: Government of India, 1958.

———. "Speech at Gujarat Educational Conference, October 20th, 1917." In *Mahatma Gandhi on Education: Selected Writings and Speeches*, edited and translated by Anil Dutta Mishra, 74–97. New Delhi: Vikas Publishing, 2015.

Gooday, Graeme, and Steven Wilf, eds. *Patent Cultures: Diversity and Harmonization in Historical Perspective*. Cambridge: Cambridge University Press, 2020.

Gordin, Michael. *Scientific Babel: How Science Was Done Before and After Global English*. Chicago: University of Chicago Press, 2015.

Gottschalk, Peter. *Religion, Science, and Empire: Classifying Hinduism and Islam in British India*. Oxford: Oxford University Press, 2013.

Government of India, *Indian Historical Records Commission: A Retrospect, 1919–1948*. Calcutta: Government of India Press, 1948.

Grant, Jonathan. *Rulers, Guns, and Money: The Global Arms Trade in the Age of Imperialism*. Cambridge, MA: Harvard University Press, 2017.

Guha, Ramachandra. *Gandhi: The Years That Changed the World, 1914–1948*. New York: Knopf Doubleday, 2018.

Gujarat State. *Socio-Economic Review: 2022–23 Gujarat State*. Gandhinagar: Government of Gujarat, 2023.

Gurevitch, Eric. "The Epistemology of Difference: Caste and the Question of Natural Kinds in the Courts of Medieval India." *Journal of South Asian Intellectual History* 5 (2022): 217–51.

Haley, Gail. *A Story, A Story*. New York: Aladdin Books, 1970.

Hamilton, Virginia. *The People Could Fly*. New York: Knopf Books, 1985.

Hathaway, Oona, and Scott Shapiro. *The Internationalists: How a Radical Plan to Outlaw War Remade the World*. New York: Simon and Schuster, 2017.

Hayford, J. E. Casely. *Ethiopia Unbound: A Study in Race Emancipation*. London: C. M. Phillips, 1911.

Hecht, Gabrielle. *Being Nuclear: Africans and the Global Uranium Trade*. Cambridge, MA: MIT Press, 2012.

Howes, Anton. "Cort Case." July 7, 2023. https://www.ageofinvention.xyz/p/age-of-invention-cort-case.

———. "Does History Have a Replication Crisis?" August 29, 2023. https://www.ageofinvention.xyz/p/age-of-invention-does-history-have.

———. "How To Be a Public Historian." November 28, 2023. https://www.ageofinvention.xyz/p/age-of-invention-how-to-be-a-public.

Jacobs, Sylvia. "Three African American Women Missionaries in the Congo 1887–1899: The Confluence of Race, Culture, Identity, and Nationality," in *Competing Kingdoms: Women, Mission, Nation, and the American Protestant Empire, 1812–1960*, edited by Barbara Reeves-Ellington, Kathryn Sklar, and Connie Shemo, 318–41. Durham, NC: Duke University Press, 2010.

Jal, Murzban. "A. R. Wadia (1888–1971): Remembering a Liberal Educationist in the Age of Post-Liberalism," *Mainstream Weekly* 60 (2022). http://mainstreamweekly.net/article12227.html.

Jansen, Marius, Samuel Chu, Shumpei Okamoto, and Bonnie Oh. "The Historiography of the Sino-Japanese War." *International History Review* 1 (1979): 191–227.

Johns, Adrian. *Piracy: The Intellectual Property Wars from Gutenberg to Gates*. Chicago: University of Chicago Press, 2009.

Johnson, James H. A. "The Law on Miscegenation." *Christian Recorder* 25 (1887): 1.

Kakuzō, Okakura. *The Book of Tea: A Japanese Harmony of Art, Culture, and the Simple Life*. New York: G. P. Putnam's Sons, 1906.

Kaplan, Sidney. "The Miscegenation Issue in the Election of 1864." *Journal of Negro History* 34 (1949): 274–343.

Kishwar, Madhu. "Gandhi on Women." Pts. 1, 2, and 3. *Economic and Political Weekly* 20 (1985): 1691–1702, 1753–58.

Koenigsberger, Kurt. *The Novel and the Menagerie*. Columbus: Ohio University Press, 2007.

Lall, Baboo Krishna (Moonshee). *Home and Foreign Missionary Record for the Free Church of Scotland* 16 (January 1, 1861): 10–12.

Lamoreaux, Naomi, and William Novak, eds. *Corporations and American Democracy*. Cambridge, MA: Harvard University Press, 2019.

Langley, Noel, Florence Ryerson, and Edgar Allen Woolf. *The Wizard of Oz: The Screenplay* [1939]. Edited by Michael Patrick Hearn. New York: Dell Publishing, 1989.

Livingstone, David. *Putting Science in Its Place: Geographies of Scientific Knowledge*. Chicago: University of Chicago Press, 2003.

Lütt, Jürgen. "The Movement for the Foundation of the Benaras Hindu University." In *German Scholars on India*, vol. 2, edited by the Cultural Department of the Embassy of the Federal Republic of Germany, 160–95. Bombay: Nachiketa Publications, 1976.

Mancke, Elizabeth. "Empire and State." In *The British Atlantic World, 1500–1800*, edited by David Armitage and Michael Braddick, 175–95. New York: Palgrave, 2002.

———. "Oceanic Space and the Creation of a Global International System, 1450–1800." In *Maritime History as World History*, edited by Daniel Finamore, 149–66. Gainesville: University of Florida Press, 2004.

Marks, Shula. "Patriotism, Patriarchy, and Purity: Natal and the Politics of Zulu Ethnic Consciousness." In *The Creation of Tribalism in Southern Africa*, edited by Leroy Vail, 216–40. London: Currey Press, 1989.

Mavhunga, Clapperton Chakanetsa. *Transient Workspaces: Technologies of Everyday Innovation in Zimbabwe*. Cambridge, MA: MIT Press, 2014.

McGoey, Linsey. *The Unknowers: How Strategic Ignorance Rules the World*. London: Zed Books, 2019.

McNeill, John. "Energy, Population, and Environmental Change Since 1750: Entering the Anthropocene." In *Cambridge World History*, edited by John McNeill and Kenneth Pomeranz, 7:51–82. Cambridge: Cambridge University Press, 2015.

McNeill, John, and Peter Engelke. *The Great Acceleration: An Environmental History of the Anthropocene Since 1945*. Cambridge, MA: Harvard University Press, 2016.

Medina, Eden. *Cybernetic Revolutionaries: Technology and Politics in Allende's Chile*. Cambridge, MA: MIT Press, 2011.

Meier, Fritz. "The Problem of Nature in the Esoteric Monism of Islam." Translated by Ralph Manheim. In *Spirit and Nature: Papers from the Eranos Yearbooks*, edited by Joseph Campbell, 149–203. Princeton, NJ: Princeton University Press, 1982 [1946].

Morgan, Jennifer. *Reckoning with Slavery: Gender, Kinship, and Capitalism in the Early Black Atlantic*. Durham, NC: Duke University Press, 2021.

Morgan, Mary. *The World in the Model: How Economists Work and Think*. Cambridge: Cambridge University Press, 2012.

Morgenstein Fuerst, Ilyse. *Indian Muslim Minorities and the 1857 Rebellion: Religion, Rebels, and Jihad*. London: I. B. Taurus, 2017.

Morrison, Minion. *Aaron Henry of Mississippi: Inside Agitator*. Fayetteville: University of Arkansas Press, 2015.

Moser, Petra. "Patents and Innovation: Evidence from Economic History." *Journal of Economic Perspectives* 27 (2013): 23–44.

Murphy, Michelle. *The Economization of Life*. Durham, NC: Duke University Press, 2017.

Murunga, Godwin, and Ibrahim Ogachi, eds. Special issue on randomized controlled trials (RCTs). *CODESRIA Bulletin*, no. 4 (2020): 1–35.

Nance, Susan. *Entertaining Elephants: Animal Agency and the Business of the American Circus.* Chicago: University of Chicago Press, 2013.

Ogundiran, Akin. *The Yorùbá: A New History*. Bloomington: Indiana University Press, 2020.

Oreskes, Naomi, and Erik Conway. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Climate Change*. New York: Bloomsbury Press, 2010.

Osseo-Asare, Abena. *Bitter Roots: The Search for Healing Plants in Africa*. Chicago: University of Chicago Press, 2014.

Palmié, Stephan. *The Cooking of History: How Not to Study Afro-Cuban Religion*. Chicago: University of Chicago Press, 2013.

Pandey, Vishwanath, ed. *Founder of Banaras Hindu University: Mahamana Pandit Madan Mohan Malaviya*. Varanasi: BHU, 2006.

Park, Katherine, and Lorraine Daston. *Wonders and the Order of Nature, 1150–1750*. New York: Zone Books, 1998.

Park, K-Sue. "The History Wars and Property Law: Conquest and Slavery as Foundational to the Field." *Yale Law Journal* 131 (2022): 1062–1153.

Partridge, Mary Eleanor. "In Memoriam." *Woman's Journal* 24 (1893): 135.

Pasquinelli, Matteo. *The Eye of the Master: A Social History of Artificial Intelligence*. London: Verso, 2023.

Pierson, John. *Tokutomi Soho, 1863–1957: A Journalist for Modern Japan*. Princeton, NJ: Princeton University Press, 1980.

Pollock, Sheldon. *The Language of the Gods in the World of Men: Sanskrit, Culture, and Power in Pre-Modern India*. Berkeley: University of California Press, 2006.

Porter, Andrew. *Religion versus Empire? British Protestant Missionaries and Overseas Expansion*. Manchester: Manchester University Press, 2004.

Porter, Theodore. *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton, NJ: Princeton University Press, 1996.

Posey, Darryl, and Graham Dutfield. *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities*. Ottawa: International Development Research Center, 1996.

Poskett, James. *Horizons: The Global Origins of Modern Science*. New York: Harper Collins, 2022.

Pottage, Alain, and Mario Biagioli. "Patenting Personalized Medicine: Molecules, Information, and the Body." *Osiris* 36 (2021): 221–40.

Rabinbach, Anson. *The Human Motor: Energy, Fatigue, and the Origins of Modernity*. Berkeley: University of California Press, 1990.

Raworth, Kate. *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*. White River Junction, VT: Chelsea Green Publishing, 2017.

Rayzberg, Margarita. "Fairness in the Field: The Ethics of Resource Allocation in Randomized Controlled Field Experiments." *Science, Technology, and Human Values* 44 (2019): 371–98.

Renold, Leah. *A Hindu Education: Early Years of the Banaras Hindu University*. Oxford: Oxford University Press, 2005.

Roh, Franz. "Magical Realism: Post-Expressionism." In *Magical Realism: Theory, History, Community*, edited by Lois P. Zamora and Wendy Faris, 15–32. Durham, NC: Duke University Press, 1995.

Sackett, S. J. "Frontlash." *American Speech* v. 40 (1965): 157–158.

Sagar, Rajesh. "Patent Policy in India Under the British Raj: A Bittersweet Story of Empire and Innovation." In *Patent Cultures: Diversity and Harmonization in Historical Perspective*, edited by Graeme Gooday and Steven Wilf, 273–301. Cambridge: Cambridge University Press, 2020.

Salesa, Damon. *An Indigenous Ocean: Pacific Essays*. Wellington, NZ: Bridget Williams Books, 2023.

Sarton, George. *Introduction to the History of Science*. Washington, D.C.: Carnegie Institution, 1927.

Saxe, John Godfrey. "The Blind Men and the Elephant." In *The Holton-Curry Reader*, edited by M. A. Holton, M. H. Page, and C. M. Curry, 107–9. New York: Rand McNally, 1914.

———. *Clever Stories of Many Nations Rendered in Rhyme*. Boston: Tickner and Fields, 1865.

Schoenbrun, David. *A Green Place, A Good Place: Agrarian Change in the Great Lakes Region to the 15th Century*. Portsmouth, NH: Heinemann, 1998.

———. *The Names of the Python: Belonging in East Africa, 900 to 1930*. Madison: University of Wisconsin Press, 2021.

Scott, James. *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*. New Haven, CT: Yale University Press, 2009.

———. *Weapons of the Weak: Everyday Forms of Social Resistance*. New Haven, CT: Yale University Press, 1985.

Sebastian, V. "Gandhi and the Standardization of Gujarati." *Economic and Political Weekly* 44 (2009): 94–101.

Secord, James. "Inventing the Scientific Revolution." *Isis* 114 (2023): 50–76.

Selcer, Perrin. *The Postwar Origins of the Global Environment: How the United Nations Built Spaceship Earth*. New York: Columbia University Press, 2018.

———. "The View from Everywhere: Disciplining Diversity in Post–World War II International Social Science." *Journal of the History of the Behavioral Sciences* 45 (2009): 309–29.

Sen, S. P. *Social and Religious Reform Movements of the Nineteenth and Twentieth Centuries*. Kolkata: Institute for Historical Research, 1979.

Shapin, Steven. "Placing the View from Nowhere: Historical and Sociological Problems in the Location of Science." *Transactions of the Institute of British Geographers*, n.s., 23 (1998): 5–12.

———. *The Scientific Revolution*. Chicago: University of Chicago Press, 1998.

Shyovitz, David. *A Remembrance of His Wonders: Nature and the Supernatural in Medieval Ashkenaz*. Philadelphia: University of Pennsylvania Press, 2017.

Slaton, Amy, and Tiago Saraiva. "Editorial." *History and Technology* 39 (2023): 127–36.

Smith, Pamela. "Science on the Move: Recent Trends in the History of Early Modern Science." *Renaissance Quarterly* 62 (2009): 345–75.

Stephens, Rhiannon. *Poverty and Wealth in East Africa: A Conceptual History*. Durham, NC: Duke University Press, 2022.

Stern, Philip. *The Company-State: Corporate Sovereignty and the Early Modern Foundations of the British Empire in India*. Oxford: Oxford University Press, 2011.

Stevenson, Megan. "Cause, Effect, and the Structure of the Social World." *Boston University Law Review* 103 (2023): 2001–47.

Stolz, Daniel. *The Lighthouse and the Observatory: Islam, Science, and Empire in Late Ottoman Egypt*. Cambridge: Cambridge University Press, 2018.

Stout, Harry. *Upon the Altar of the Nation: A Moral History of the Civil War*. New York: Penguin Books, 2007.

Streets, Heather. *Martial Races: The Military, Race, and Masculinity in British Imperial Culture, 1857–1914*. Manchester: Manchester University Press, 2004.

Szreter, Simon, and Keith Breckinridge, eds. *Registration and Recognition: Documenting the Person in World History*. Oxford: Oxford University Press, 2012.

Taft, Russell Wales. *John Godfrey Saxe: A Biographical Sketch of Vermont's Lawyer, Journalist, Lecturer, and Rhymster*. Burlington, VT: Taft, 1900.

Takoko, Mere. "A Descendant's Call for Whale Legal Personhood." *Atmos Earth* (March 26, 2024). https://atmos.earth/a-descendants-call-for-whale-legal-personhood/.

Tamanaha, Brian. "Understanding Legal Pluralism: Past to Present, Local to Global." *Sydney Law Review* 375 (2008): 375–411.

Teal, Fred. "Duplication in School Readers." *Educational Research Bulletin* 5 (1926): 357–59.

Teale, Edmund. "The Contribution of Colonial Geological Survey to the Development of Mineral and Other Resources in East and West Africa," *Journal of the Royal Society of Arts* 93 (1945): 245–56.

Tilley, Helen. "Global Histories, Vernacular Science, and African Genealogies: Or, Is the History of Science Ready for the World?" *Isis* 110 (2010): 110–19.

———. "History and Historiography of Science." In *The Oxford Encyclopedia of African Historiography: Methods and Sources*, edited by Thomas Spear. Oxford: Oxford University Press, 2019. https://www.oxfordreference.com/display/10.1093/acref/9780190698706.001.0001/acref-9780190698706-e-353.

———. "Traditional Medicine Goes Global: Pan-African Precedents, Cultural Decolonization, and Cold War Rights/Properties." *Osiris* 36 (2021): 132–59.

———. *See also* Denham, Helen.

Trivedi, Ratalal Mohanlal. "A Life Sketch of Acharya A. B. Dhruva." In *Acharya Dhruva Smaraka Grantha*, edited by R. C. Parikh, R. M. Trivedi, and U. J. Joshi, 1–48. Ahmedebad: Gujarat Vernacular Society, 1946.

Trautmann, Thomas. *Elephants and Kings: An Environmental History*. Chicago: University of Chicago Press, 2016.

Wadia, A. R. *The Ethics of Feminism: A Study of the Revolt of Women*. London: George Allen and Unwin, 1923.

———. "The Late Acharya Dr. Anandshankar B. Dhruva." In *Acharya Dhruva Smaraka Grantha*, edited by R. C. Parikh, R. M. Trivedi, and U. J. Joshi, 12–14. Ahmedebad: Gujarat Vernacular Society, 1946.

Webber, Sophie, and Carolyn Prouse. "The New Gold Standard: The Rise of Randomized Control Trials and Experimental Development." *Economic Geography* 94 (2018): 166–87.

Weitz, Eric. *A World Divided: The Global Struggle for Human Rights in the Age of Nation-States*. Princeton, NJ: Princeton University Press, 2019.

Westlake, John. *Chapters on the Principles of International Law*. Cambridge: Cambridge University Press, 1894.

Wexler, Rebecca. "Life, Liberty, and Data Privacy: The Global Cloud, the Criminally Accused, and Executive versus Judicial Compulsory Process Powers." *Texas Law Review* 101 (2023): 1341–1416.

———. "Life, Liberty, and Trade Secrets: Intellectual Property in the Criminal Justice System." *Stanford Law Review* 70 (2018).

Williams, Jay. *Everyone Knows What a Dragon Looks Like*. New York: Aladdin Books, 1976.

Winterbottom, Anna. "Becoming 'Traditional': A Transnational History of Neem and Biopiracy Discourse." *Osiris* 36 (2021): 262–83.