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Non-Western Scholars, Bourgeois Virtues, and the International Scientific Community in the Age of Empire, 1870–1920

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Abstract

Historians have long argued that science was fashioned as a bourgeois, Western cultural practice by the late nineteenth century, in ways that allowed its practitioners to exclude or distance themselves – through a rhetoric of endeavour, utilitarianism, and progress – from the more useless, ‘frivolous’ learning of aristocrats, women, or, indeed, native ‘informants’ in the colonies. This article examines the case of scholars from outside northern Europe and North America – Japanese literati, creole intellectuals, and Lebanese scholars – who managed to participate in the period’s Western scientific networks as peers. It holds that these men were able to establish epistemic credibility not because their lower rung in a political and racial hierarchy was ever irrelevant, but because their status as upper-middle-class professionals and their bourgeois habitus – their ‘civility’, and ‘manners’ – in some measure made up for it. The article reveals, rather than forthright ‘exclusion’ and ‘silencing’ of non-Europeans, complex epistemic hierarchies and geographies of knowledge. It exposes the mechanisms of epistemic inclusion and its limits in the period: the functioning of an academic community that was – in many, rather significant ways – also a social world.

Historians have long argued that science and scholarship were increasingly fashioned as bourgeois, Western cultural practices by the later nineteenth century, in ways that allowed their practitioners to exclude or distance themselves – through a rhetoric of endeavour, utilitarianism, and progress – from the more useless, ‘frivolous’ learning of aristocrats, women, or, indeed, from native ‘informants’ in the colonies.¹ This article examines the place of scholars from outside northern Europe and North America – Japanese literati, creole

¹ For that diagnosis in relation to women and the aristocracy, see Carol E. Harrison, *The bourgeois citizen in nineteenth-century France: gender, sociability, and the uses of emulation* (Oxford, 1999), pp. 51, 63–4, 67. On native informants, see, for instance, Daniel Rood, ‘Toward a global labor history of

intellectuals, and Lebanese scholars, to name but a few examples – who did manage to participate in the period’s scientific networks as peers and who did achieve a measure of ‘intellectual authority’² within them. The article holds that many of these men were able to establish epistemic credibility not because their lower rung in the period’s racial and political hierarchies was ever truly irrelevant, but because their upper-middle-class status, bourgeois habitus, and professional identities – as engineers, industrialists, and professors – in some measure made up for it. It was the very fact that a practitioner’s social condition would have been ‘relevant to securing credibility’,³ the article argues, that enabled them to attend conferences, deliver papers, or be heard at assemblies. As such, this piece brings a social historical perspective to a theme – the period’s self-consciously cosmopolitan, international ‘scientific community’⁴ – that has long been at the heart of global history, a field that has tended to privilege the study of mobility, networks, and diasporas over that of the social classes and hierarchies their historical subjects would invariably have pertained to and that would have directed, allowed for, or restrained their movement.⁵ Premised, among other sources, upon a close reading of the membership subscription lists and protocols of some of the period’s academies and scientific societies – its most prominent, but also less visible, less well-funded, or non-metropolitan cases – in the decades running from the 1870s up to the aftermath of the First World War, this article seeks to understand the mechanisms of epistemic inclusion and its limits in the Age of Empire: the functioning of an academic community that was – in many, rather significant ways – also a social world.

I

It has become commonplace in the history of science to argue that scholars and scholarly institutions were, geographically and politically speaking, international, that is, in communication with their peers and counterparts across the globe by the late 1800s and early 1900s. Indeed, the field has long concurred that modern science was characterized by increasing ‘connectivity’ and ‘the spread of knowledge, its global ubiquity and circulation’ – and in

science’, in Patrick Manning and Daniel Rood, eds., *Global scientific practice in an age of revolutions, 1750–1850* (Pittsburgh, PA, 2016), pp. 255–74.

² The classic text on ‘intellectual authority’ is John Hardwig, ‘Epistemic dependence’, *Journal of Philosophy*, 82 (1985), pp. 335–49.

³ On the considerations that might be relevant to securing credibility, see Steven Shapin, ‘Cordelia’s love: credibility and the social studies of science’, in idem, ed., *Never pure: historical studies of science as if it was produced by people with bodies, situated in time, space, culture, and society, and struggling for credibility and authority* (Baltimore, MD, 2010; orig. edn 1995), pp. 17–31, at p. 21.

⁴ On the international scientific community of the late nineteenth century, see, for instance, Brigitte Schroeder-Gudehus, ‘Internationale Kongresse und die Organisation der Wissenschaft: Ein Blick auf die Jahrhundertwende’, in Hartmut Boockmann and Kurt Jürgensen, eds., *Nachdenken über Geschichte: Beiträge aus der Ökumene der Historiker* (Neumünster, 1991), pp. 247–56.

⁵ For a review of this critique, see Cristof Dejung, David Motadel, and Jürgen Osterhammel, ‘Worlds of bourgeoisie’, in idem, eds., *The global bourgeoisie: the rise of the middle classes in the Age of Empire* (Princeton, NJ, 2019), pp. 1–40, at p. 6.

the later nineteenth century in particular by the emergence of long-term, institutionalized international research collaborations.⁶ Even though science undeniably became a matter of *national* prestige and relevance in the wake of the French Revolution, historians tend to agree that by the last decades of the nineteenth century, it was international in its very nationalism, with national achievements being measured by international standards.⁷ The Age of Empire is generally regarded as a time of a remarkable ‘flowering of institutional “scientific internationalism”’, in the form of international scientific conferences, liaising disciplinary societies, academic exchanges, and scientific publishing in new *linguae francae*; the level of commotion is impressive indeed, with no less than 3,000 international functions counted between 1840 and 1914.⁸ As Lorraine Daston recently put it, science in the late 1800s was ‘a world project’.⁹

All of this is accurate, to be sure. Associations like the American Philosophical Society, for instance, received, by the 1870s and 1880s, ‘donations for the library’, ‘letters of envoy’, and acknowledgement from the ‘Museum at Mexico’,¹⁰ the Paris Anthropological Society (*Société d’Anthropologie de Paris*),¹¹ the Tashkent Observatory in Russia (*Observatoire Astronomique et Physique de Tashkend*),¹² the Mining Bureau at Melbourne,¹³ the South African Philosophical Society in Cape Town,¹⁴ the Observatory at Harvard College,¹⁵ and the Asiatic Society of Japan.¹⁶ As did learned societies, observatories, and museums in other parts of the world, many of which counted among their connections numerous foreign correspondents, donors, and contacts. Britain’s Royal Society, the oldest and one of the world’s foremost scientific

⁶ For a critical diagnosis of that discourse, see Dániel Margócsy, ‘A long history of breakdowns: a historiographical review’, *Social Studies of Science*, 47 (2017), pp. 307–25, at p. 309. On the global turn in the history of science, see Fa-ti Fan, ‘Science in a Chinese entrepôt: British naturalists and their Chinese associates in Old Canton’, *Osiris*, 18 (2003), pp. 60–78; Kapil Raj, ‘Beyond postcolonialism... and postpositivism: circulation and the global history of science’, *Isis*, 104 (2013), pp. 337–47. Jim Secord wrote in 2004 that ‘the spread of knowledge, its global ubiquity and circulation’ was the major question and puzzle for the history of science in the new millennium. James A. Secord, ‘Knowledge in transit’, *Isis*, 95 (2004), pp. 654–72, at p. 655.

⁷ Historians have referred to this as ‘Olympic internationalism’, see Geert J. Somsen, ‘A history of universalism: conceptions of the internationality of science from the Enlightenment to the Cold War’, *Minerva*, 46 (2008), pp. 361–79, at p. 355.

⁸ Peter Alter, ‘The Royal Society and the International Association of Academies, 1897–1919’, *Notes and Records of the Royal Society of London*, 34 (1980), pp. 241–64, at pp. 241–2.

⁹ Lorraine Daston, *Rivals: how scientists learned to cooperate* (New York, NY, 2023), p. 16.

¹⁰ The ‘letter of envoy’ from the ‘Museum at Mexico’ was received on 18 Aug. 1877. ‘Stated meeting’, 5 Oct. 1877, *Proceedings of the American Philosophical Society Held at Philadelphia for Promoting Useful Knowledge*, 17 (1878).

¹¹ ‘Stated meeting’, 7 Sept. 1888, *Proceedings of the American Philosophical Society Held at Philadelphia for Promoting Useful Knowledge*, 25 (1888), p. 197.

¹² *Ibid.*, p. 198.

¹³ ‘Stated meeting’, 15 June 1877, *Proceedings of the American Philosophical Society Held at Philadelphia for Promoting Useful Knowledge*, 17 (1878), p. 3.

¹⁴ ‘Stated meeting’, 7 Sept. 1888, p. 199.

¹⁵ ‘Stated meeting’, 15 June 1877, p. 3.

¹⁶ *Ibid.*, p. 2.

societies in the period, elected 144 foreign members in addition to 16 non-British Fellows between 1870 and 1920.¹⁷ Even the much less visible, more confined Berlin Society of Friends of Nature Research (*Gesellschaft Naturforschender Freunde zu Berlin*) counted some 213 members based abroad between 1773 and 1919,¹⁸ while the aforementioned South African Philosophical Society received journals, annals, and exhibition catalogues from Moscow, Cincinnati, and Vienna.¹⁹ Lima's Geographical Society (*Sociedad Geográfica de Lima*), in turn, likewise a relatively small, 'useful knowledge' society, counted among its correspondents and honorary members geographers such as Robert Jannasch, president of Berlin's Central Association for Commercial Geography (*Centralverein für Handelsgeographie*), the Anglo-Irish consul Thomas J. Hutchinson, and Roland Napoléon Bonaparte, president of the Paris Geographical Society (*Société de Géographie*).²⁰ The yet more specialist Numismatic and Antiquarian Society of Philadelphia counted ninety-two corresponding members based abroad by 1889, drafted from all over the world: thirteen from England, Scotland, and Wales, ten from Italy, six from France, Canada, and the territories of the German empire respectively, seven from Austria, four from Mexico, and the remainder – one or two respectively – from Spain, the Ottoman empire, Portugal, Sweden, Switzerland, Denmark, Iceland, Norway, Hungary, British India, Greece, Australia, Russia, and British Guiana.²¹ By 1892, Mexico's National Museum exchanged publications with twenty-seven associations, from the nearby Guatemalan National Institute to the Leopoldina Academy in Halle and the Society of Naturalists in Kiev.²² Accounts of the lives and endeavours of the worldly, peripatetic intellectuals, scholars, and 'brokers' behind these numbers – be they Finnish, Cameroonian, Indian, or Peruvian – are by now legion in global intellectual history and history of science.²³

¹⁷ See the digital database of past Fellows, maintained by the Royal Society: www.royalsociety.org, last accessed 30 Jan. 2024.

¹⁸ Katrin Böhme-Kaßler, *Gemeinschaftsunternehmen Naturforschung: Modifikation und Tradition in der Gesellschaft Naturforschender Freunde zu Berlin 1773–1906* (Stuttgart, 2005), pp. 159–60.

¹⁹ 'Ordinary monthly meeting, Wednesday, 26 January 1887', *Transactions of the South African Philosophical Society*, 2, 1886–9 (1893), p. iv.

²⁰ Sociedad Geográfica de Lima, 'Personal de la Sociedad Geográfica de Lima', *Boletín de la Sociedad Geográfica de Lima*, 1 (1891), p. 470.

²¹ Some 72 out of a total of 164 corresponding members were based in the United States – that is less than half, some 44 per cent. The exact count for the members based abroad is: Spain (3), Portugal (1), Sweden (2), Switzerland (1), Mexico (4), Denmark (2), Iceland (1), Belgium (4), Norway (1), Hungary (2), Finland (1), India (1), British Guiana (1), Greece (2), Netherlands (1), Australia (1), Russia (2), Turkey (1). 'List of corresponding members', *Report of the Proceedings of the Numismatic and Antiquarian Society of Philadelphia, 1887–9* (1891).

²² See, for instance, Juan José Saldaña and Consuelo Cuevas Cardona, 'La invención en México de la investigación científica profesional: el Museo Nacional (1868–1908)', *Quiipu: Revista Latinoamericana de Historia de las Ciencias y la Tecnología*, 12 (1999), pp. 309–32, at pp. 327–8.

²³ See, for instance, Stefanie Gänger and Su Lin Lewis, 'Forum: a world of ideas: new pathways in global intellectual history, c. 1880–1930', *Modern Intellectual History*, 10 (2013), pp. 347–51; Dejung, Motadel, and Osterhammel, 'Worlds of bourgeoisie'; Kris Manjapra, *Age of entanglement: German and Indian intellectuals across empire* (Cambridge, MA, 2014); Penny Edwards, 'Relocating the

While many individuals as well as learned societies and scientific associations undeniably maintained relationships with counterparts on other continents, these ‘global’ connections were not necessarily everyone’s priority. Most scholars were involved in networks that were national, continental, imperial, or, indeed, quite simply geared towards the Western European and North American centres rather than evenly ‘global’ in scope.²⁴ Some of the most important European scholars of the late 1800s and 1900s never travelled.²⁵ More importantly, there is also no denying the fact that, quantitatively speaking, associates from outside north-western Europe and North America remained a minority, on the fringes of most of the period’s scientific forums and networks. Most academic networks and learned societies were overwhelmingly national in their membership and subregional in their outlook. The Royal Society’s 144 non-British Fellows constituted a small, 17 per cent minority compared to 817 British Fellows.²⁶ The *Gesellschaft Naturforschender Freunde zu Berlin*, too, between 1773 and 1919, did count 213 members based abroad, but out of a total of 1,250. None of this is surprising, to be sure, since both were local, or national societies, but it is worth noting that the large majority of the 213 foreign-based members of the Berlin society, for instance, some 77 per cent, were located in neighbouring or – comparatively – nearby states like Denmark, France, or the Austro-Hungarian empire.²⁷ The same goes for the Royal Society, in which German and French Fellows accounted for roughly half of the 160 non-British members.²⁸ Other learned societies adopted a continentalist outlook by design. Santiago de Chile’s American Archaeological Society (*Sociedad Arqueológica* (sic) *Americana*), for instance, a short-lived endeavour which counted among its members some of Chile’s most prominent citizens, was conceived as a Pan-American association – since ‘we, the Americans’, were better placed to study the ‘ancient American races’ ‘than superficial foreign observers’²⁹ – and was implemented as a pan-Andean one,

interlocutor: Taw Sein Ko (1864–1930) and the itinerary of knowledge in British Burma’, *South East Asia Research*, 12 (2004), pp. 277–335; Simon Schaffer et al., eds., *The brokered world: go-betweens and global intelligence, 1770–1820* (Sagamore Beach, MA, 2009); Jukka Kortti, ‘Towards the European transnational public sphere: Finnish liberal intellectuals and their periodicals between nationalism and internationalism under russification’, *Scandinavian Journal of History*, 46 (2021), pp. 196–223; Sara Pugach, *Africa in translation: a history of colonial linguistics in Germany and beyond, 1814–1945* (Ann Arbor, MI, 2012), pp. 141–59.

²⁴ See, for instance, Kortti, ‘Towards the European transnational public sphere’.

²⁵ Jürgen Osterhammel, ‘Warenökonomie und Mobilitätsfolklore’, *Zeitschrift für Ideengeschichte*, 15 (2021), pp. 5–13, at p. 9.

²⁶ See the digital database of past Fellows, maintained by the Royal Society: www.royalsociety.org, last accessed 30 Jan. 2024.

²⁷ The Society counted twenty-five members based in Denmark, sixteen in Britain, six in the Baltic, thirty-three in France, twenty-nine in the Austro-Hungarian empire and its successor states, twenty-one in Russia, all based in St Petersburg, twelve in Sweden, and twenty-four in Switzerland. Böhme-Kaßler, *Gemeinschaftsunternehmen Naturforschung*, pp. 159–60.

²⁸ See the digital database of past Fellows, maintained by the Royal Society: www.royalsociety.org, last accessed 30 Jan. 2024.

²⁹ As Luis Montt, one of the convenors, saw it, too much of what had been published on the subject of American antiquities had been done by Europeans, but ‘we, the Americans, who find

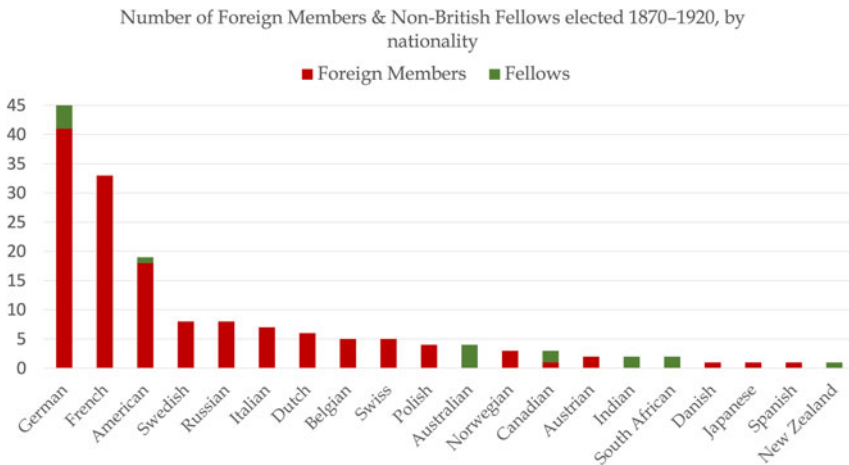


Figure 1. Foreign members & Non-British Fellows of Britain's Royal Society.

Data from the digital database of past Fellows of the Royal Society: www.royalsociety.org, last accessed 30 Jan. 2024. © Jonathan Ostellino.

with correspondents and honorary members based mainly in its two neighbouring countries, Peru and Argentina.³⁰ Even the aforementioned Numismatic and Antiquarian Society of Philadelphia counted seventy-one resident members which, in addition to the seventy-two US-based corresponding members, would have outnumbered the foreign corresponding members by about one and a half to one (Figure 1).

Again, a national priority and centre of gravity is not surprising for the period. What is more relevant is that, while impressive in its geographical coverage, many associates from afar were compatriots – European missionaries, colonial officials, or foreign merchants. The Numismatic and Antiquarian Society of Philadelphia's correspondent in British Guiana, for instance, was Everard Ferdinand im Thurn, its Constantinople-based member the Reverend Albert S. Long, and its contact in Smyrna, a certain George Post.³¹ The same applies to the *Gesellschaft Naturforschender Freunde zu Berlin*. Those few members who were not based in Europe but in India and South America were often

ourselves in the presence of ancient races, [and who are] up to a certain point (*hasta cierto punto*) their heirs, can study better than superficial foreign observers the ethnographic, philological and other problems that the American world presents'. Sociedad Arqueológica de Santiago, 'Sesión preparatoria', *Revista de la Sociedad Arqueológica*, 1 (1880). Appropriately, the Society edited a journal that contained papers on Chilean as well as Ecuadorian, Bolivian, and, to a less prominent extent, North American archaeology. Rudolph A. Philippi, Nicolás Acosta, and Luis Montt, 'Antigüedades', *Revista de la Sociedad Arqueológica*, 1 (1880).

³⁰ Sociedad Arqueológica de Santiago, 'Sesión preparatoria', pp. 17–18.

³¹ 'E. F. im Thurn', presumably Everard Ferdinand im Thurn (1852–1932), was a British scholar of Swiss descent who acted as curator of the museum in Georgetown, British Guiana, between 1877 and 1882. 'List of corresponding members', pp. 11ff.

German-speaking missionaries and migrants.³² The pattern is not unusual. Several of the associations that contributed to the American Philosophical Society's wide network, for instance, were settler colonial, British, or even American foundations. The Mining Bureau at Melbourne, the South African Philosophical Society in Cape Town and the Asiatic Society of Japan were all initiated by English-speaking settlers, missionaries, merchants, and diplomats, bound to one another by ties of language, politics, and culture.³³ This also goes for the Royal Society. Its thirty-two non-European Fellows were made up of nineteen Americans and twelve Fellows from various parts of the British empire – Australia, Canada, India, South Africa, and New Zealand; the only non-European elected Fellow who did not hail from the British empire or a former British colony between 1870 and 1920 was the Japanese bacteriologist Kitasato Shibasaburō.³⁴ A similar pattern is detectable for the most important 'foreign' correspondents, donors, and associates of museums, exhibitions, and learned societies in imperial Germany: the physician Franz (Francisco) Fonck, Rudolf(o) Philippi, or Carl(os) Martin were all German-speaking migrants who had settled in Spanish America.³⁵ In that regard, these late nineteenth-century societies were not unlike those active a century earlier. The members of France's *Société Royale de la Médecine* had already elected a substantial cadre of correspondents from France's colonies in the Antilles, South America, and the Indian Ocean after 1777: thirty-two, in addition to twenty-eight contact persons overseas. Except for two foreign doctors from Brazil and Chile, however, they were all French, most of them royal physicians or official naturalists posted to the colonies.³⁶ In view of the fact that the scientific projects of the late 1800s and early 1900s – in astrophotography, chemistry, or geodesy – were strikingly inclusive in some respects, requiring worldwide networks of observers and scientists,³⁷ they were remarkably exclusive in others.

II

Yet more importantly, wherever learned societies and scientific associations did recruit scholars from outside northern Europe and North America, that divergency commonly went along with utter consistency in the social strata

³² On the Tranquebar missionaries Johann Gerhard König and Christian Samuel John, for instance, see Böhme-Kaßler, *Gemeinschaftsunternehmen Naturforschung*, pp. 43, 159–60.

³³ The South African Philosophical Society was founded in 1877 and gained a royal charter in 1907; a high subscription rate guaranteed exclusivity; those involved in its affairs were influential personages drawn from the colony's administrative and political elite. Saul Dubow, *A commonwealth of knowledge: science, sensibility, and white South Africa, 1820–2000* (Oxford, 2006), pp. 119–20. Upon its foundation in 1872, the Asiatic Society of Japan did not include any Japanese members. 'Members', *Transactions of the Asiatic Society of Japan*, 1 (1872–3), pp. 8–9.

³⁴ See the digital database of past Fellows, maintained by the Royal Society: www.royalsociety.org, last accessed 30 Jan. 2024.

³⁵ Stefanie Gänger, 'Colecciones y estudios naturalistas en las colonias alemanas en el sur de Chile, c. 1850–1900', *Historia* 396, 1 (2011), pp. 77–102.

³⁶ James E. McClellan and François Regourd, *The colonial machine: French science and overseas expansion in the Old Regime* (Turnhout, 2012), p. 126.

³⁷ Daston, *Rivals*, pp. 59–71.

they recruited their associates from. By 1889, the list of ‘corresponding members’ and ‘donors’ of the Numismatic and Antiquarian Society of Philadelphia, for instance, included, among its few non-North American and non-European members, men like Antonio Peñafiel from Mexico, Syad Mohammed Hadi from Sultanpur in India, and Tatsui Baba from Tokyo in Japan.³⁸ While Antonio Peñafiel was a prolific, and prominent, Mexican physician, statistician, and scientist,³⁹ Syad Mohammed Hadi presumably was the ‘distinguished’, and well-travelled ‘representative of a native educational society for the purpose of arranging for the reception of East Indian apprentices; and students’ in Philadelphia ‘manufactories and technical schools’.⁴⁰ Baba Tatsui, in turn, was an English-educated Meiji reformist intellectual who sought to remake Japan in the Western image.⁴¹ Antonio Peñafiel, Syad Mohammed Hadi, and Baba Tatsui are telling examples of the particular kind of non-Western scholars who would have found admittance to the period’s scientific community. To be sure, none of these men were born into what could be called bourgeois or middle-class circumstances; indeed, their family backgrounds could not be more different – ranging from aristocratic, samurai, and upper-caste descent to comparatively humble, rural origins. By the 1880s, however, all of them had adopted Western bourgeois academic conventions, professions, and ideas about technological progress, western education, self-improvement, their biographies mirroring the shifting social ground of the late 1800s, with the tightening of imperial structures and the worldwide decline of nobilities.⁴² Not all of them were, like Baba Tatsui, foreign educated, to be sure. And yet, these men invariably were products and, frequently also, like Syad Mohammed Hadi, advocates of Western education and reform. Indeed, the Cambridge-educated Burmese archaeologists, worldly Ottoman Syrian

³⁸ Both Antonio Peñafiel and Syad Mohammed Hadi from Sultanpur in India were among the Society’s corresponding members. See ‘List of corresponding members’, pp. 11–12. Baba Tatsui from Tokyo in Japan was listed as a donor to the library. ‘Donors to the library 1887–89’, *Report of the Proceedings of the Numismatic and Antiquarian Society of Philadelphia* (1891), p. 13.

³⁹ Upon the donation of ‘a collection of antique Mexican silver and copper coins and medals’ in 1884, Dr Antonio Peñafiel was referred to as ‘of the *Dirección General de Estadística de la República Mexicana*. Henry Philipps, ‘December 4th’, *Report of the Proceedings of the Numismatic and Antiquarian Society of Philadelphia* (1884), pp. 24–30, at pp. 26–7. The name thus refers to the physician, government official, and statistician (and antiquities collector) Antonio Peñafiel Berruecos, who was indeed named director of the Mexican General Directorate of Statistics 1882, which under his direction became a key site for the systematic production of ‘modern’ economic and population statistics and the integration of Mexico into an international concert of statistical bureaux and standard systems. See Laura Cházaro, ‘Antonio Peñafiel Berruecos (1839–1922) y la gestión estadística de los datos nacionales’, *Estadística y Sociedad*, 4 (2016), pp. 131–52.

⁴⁰ ‘An enlightened East Indian’, *St Paul Daily Globe*, 5 Aug. 1889.

⁴¹ On Baba Tatsui, see Julia Adeney Thomas, *Reconfiguring modernity: concepts of nature in Japanese political ideology* (Berkeley, CA, 2002), ch. 5. See also Eugene Soviak, ‘The case of Baba Tatsui: Western Enlightenment, social change and the early Meiji intellectual’, *Monumenta Nipponica*, 18 (1963), pp. 191–235.

⁴² On the decline of the nobility on a global scale, see Jürgen Osterhammel, ‘Hierarchien und Verknüpfungen: Aspekte einer globalen Sozialgeschichte’, in Sebastian Conrad and Jürgen Osterhammel, eds., *Wege zur modernen Welt, 1750–1870* (Munich, 2016), pp. 752–5.

religious scholars, Göttingen-trained Indian Sanskritists, and well-travelled Peruvian physicians who were heard in the period's international scientific circuits were nearly all both recipients and advocates of Western education and reform in their own countries.⁴³ As Julia Rodriguez has shown for the case of the Argentine criminologists prominently involved in the international scientific community of the late 1800s and early 1900s, they were not only men from the privileged class who possessed the linguistic skills and resources for travel; they largely hailed, like their northern counterparts, 'from the liberal and reformist wing of the elite and upper middle-class intelligentsia' and 'sought to advance democratic, progressive reforms in public health, education, and the law'.⁴⁴ The Mexican, Indian, or Japanese scholars who were permitted to join the period's scientific community were not only usually reformers; they also were either professional scientists or, if they were amateurs, had particular professions that were, as Carol E. Harrison has argued, associated with 'scientific ability'.⁴⁵ Just like their Prussian, British, or French counterparts, they were often engineers, industrialists, and doctors – like Peñafiel, the Singapore-born and Edinburgh-trained Chinese doctor Lim Boon Keng,⁴⁶ or the well-travelled Lima antiquary and physician José Mariano Macedo.⁴⁷ Others were lawyers, priests like the Paris-educated Japanese priest Fujishima Ryōon,⁴⁸ journalists like the Lebanese Christian orientalist Ibrahim al-Yaziji, government functionaries, or, indeed, several of these at once. Among the American Philosophical Society's most assiduous members and donors, for

⁴³ On the Peruvian physicians, see Marisol de la Cadena, *Indigenous mestizos: the politics of race and culture in Cuzco, Peru, 1919–1991* (Durham, NC, and London, 2000), p. 61. On the Sanskrit scholar Ramakrishna Gopal Bhandarkar, trained at Bombay and Göttingen Universities, see Dermot Killingley, 'R. G. Bhandarkar: the basis of theism and its relation to the so-called revealed religions (India, 1883)', in Björn Bentlage et al., eds., *Religious dynamics under the impact of imperialism and colonialism: a sourcebook* (Leiden, 2017). On Taw Sein Ko, a Burmese archaeologist of Chinese descent trained at Calcutta and Cambridge, see Edwards, 'Relocating the interlocutor'. On the Ottoman, Beirut-born Sunni 'alim, or religious scholar and editorialist Shaykh Ahmad Tabbarah, and his speech before a gathering of reformist advocates of administrative decentralization from across the 'Syrian' provinces of the Ottoman empire, see Andrew Arsan, 'Under the influence? Translations and transgressions in late Ottoman imperial thought', *Modern Intellectual History*, 10 (2013), pp. 375–97.

⁴⁴ Julia Rodriguez, 'South Atlantic crossings: fingerprints, science, and the state in turn-of-the-century Argentina', *American Historical Review*, 2 (2004), pp. 387–416, at p. 397.

⁴⁵ Harrison, *The bourgeois citizen*, p. 52. For a revised historiography of amateurs and professionals in the late Victorian era, see Samuel J. M. M. Alberti, 'Amateurs and professionals in one county: biology and natural history in late Victorian Yorkshire', *Journal of the History of Biology*, 34 (2001), pp. 115–47.

⁴⁶ Wayne Soon, 'Science, medicine and Confucianism in the making of China and Southeast Asia: Lim Boon Keng and the overseas Chinese, 1897–1937', *Twentieth-Century China*, 39 (2014), pp. 24–43.

⁴⁷ On Macedo and other Peruvian antiquaries, see Stefanie Gänger, 'Conversaciones sobre el pasado. José Mariano Macedo y la arqueología peruana, 1876–1894', *Nuevo Mundo Mundos Nuevos* (2014), <https://doi.org/10.4000/nuevomundo.67124>.

⁴⁸ On Fujishima Ryōon, see Hans Martin Krämer, 'Orientalism and the study of lived religions: the Japanese contribution to European models of scholarship on Japan around 1900', in Christiaan Engberts and Herman Paul, eds., *Scholarly personae in the history of orientalism, 1870–1930* (Leiden and Boston, MA, 2019), pp. 143–71, at p. 160.

instance, was Mariano [de la] Bárcena, a Mexican naturalist who served as interim governor of Jalisco and director of the Meteorological Observatory.⁴⁹ The relationship between class and science was in many ways a circular one. A ‘commitment to education’, science, and ‘competence’ conferred, as historians of France have put it, ‘*droit de bourgeoisie*’,⁵⁰ and vice versa: ‘*droit de bourgeoisie*’ also became a road of entry for men who did not, by other standards, belong in the international scientific community.

There can also be little doubt that the Japanese, Peruvian, and Lebanese scholars who were admitted as peers to the collective pursuit of science were men familiar with the codes of Western bourgeois and upper-class sociability that were so central to the period’s scientific community: the proper ‘demeanour’, and ‘the manner in which [scientific] claims [ought to be] delivered’.⁵¹ Historians have shown that from around 1900, Asian literati increasingly made their appearance in the committee meetings, anniversary lectures, and obituaries of the ‘orientalist’ learned societies of Calcutta, Rangoon, or Bangkok and that their access was premised, other than upon their expertise in Southeast Asian societies, languages, and culture, upon their fluency in British bourgeois sociability and academic conventions.⁵² Indeed, in London and Lima, Uppsala, Paris, or Singapore alike, scientific debate would often have taken place at soirées, during sociable weekend excursions and over dinner parties, which were as much part of the period’s scientific culture as of its bourgeoisie’s social fabric.⁵³ Admittance to London’s Chemical Club, in which the gatherings consisted in ‘formal dinners’, ‘after which papers were read and discussed’, a Lima society banquet, or the Singapore Straits Philosophical Society, which had among its members British civil servants, soldiers, missionaries, and ‘educated Chinese’,⁵⁴ would

⁴⁹ For references to ‘Mariano Barcena’, see ‘Stated meeting’, 20 July 1877, *Proceedings of the American Philosophical Society Held at Philadelphia for Promoting Useful Knowledge*, 17 (1878), p. 5; ‘Stated meeting’, 15 June 1877.

⁵⁰ Harrison, *The bourgeois citizen*, p. 86.

⁵¹ Shapin, ‘Cordelia’s love’, p. 21. On ‘gentlemanly manners in dispute’, see also Raf de Bont, ‘“Writing in letters of blood”: manners in scientific dispute in nineteenth-century Britain and the German lands’, *History of Science*, 51 (2013), pp. 309–35, at p. 318; Lorraine Daston, ‘The moral economy of science’, *Osiris*, 10 (1995), pp. 2–24, at pp. 4–5.

⁵² Su Lin Lewis, ‘Between orientalism and nationalism: the learned society and the making of “Southeast Asia”’, *Modern Intellectual History*, 10 (2013), pp. 353–74, at pp. 354, 356.

⁵³ On the importance of sociability, see for instance the most recent contributions by Daston, *Rivals*, pp. 82–3.

⁵⁴ On the Singapore society, which met regularly between 1893 and 1915, see Tim N. Harper, ‘Globalism and the pursuit of authenticity’, *Sojourn: Journal of Social Issues in Southeast Asia*, 12 (1997), pp. 261–92, at p. 277. On the London Chemical Club, see Andrew Lacey, ‘The Chemical Club: an early nineteenth-century scientific dining club’, *Ambix*, 64 (2017), pp. 263–82. In Lima, similarly, where certain aspects of science – antiquarianism and natural history in particular – were an important part of elite sociability by the late 1800s, a novel specimen could often be found to be discussed over a formal dinner. Stefanie Gänger, *Relics of the past: the collecting and study of pre-Columbian antiquities in Peru and Chile, 1837–1911* (Oxford, 2014), p. 116. This practice was common elsewhere, too. See, for instance, Philippa Levine, *The amateur and the professional: antiquarians, historians and archaeologists in Victorian England, 1838–1886* (Cambridge, 1986), p. 19.

by design have been contingent upon a claimant's social belonging: their socio-economic position in life, to be sure – the ability to afford membership fees, a library, or leisure travel – but also a 'charming and agreeable manner', as one British contemporary put it in relation to a Burmese colleague, the proper attire, 'education', and a 'cultured', gentlemanly conduct.⁵⁵ The participants of such gatherings, societies, and clubs were surely of diverse provenance – Chinese, British, and Peruvian alike – and many of them no doubt drew not only on indigenous learned traditions but also on divergent indigenous notions of a 'scholarly persona' – Iberian, Confucian, or Islamic ideals of the 'man of letters', or the gentleman-scholar.⁵⁶ They also, however, invariably had the social standing, 'manner', and demeanour to be admitted to Western bourgeois gatherings. The circuits in which these men travelled, as Penny Edwards describes in the case of the Calcutta- and Cambridge-educated Chinese archaeologist Taw Sein Ko, 'were elite, class-bound itineraries', into which not only their 'adoption of certain European prescriptions for "advancement"' but also their 'status...would have bought [the]m entry'.⁵⁷ There can be little doubt that the very male, and very bourgeois, camaraderie and 'after-hours conviviality' that marked these meetings made them exclusive in many respects.⁵⁸ Interestingly enough, however, it also made them inclusive for those who, like the Indian scientist and pioneer of electro-magnetic waves J. C. Bose – who was adamant that his delayed official recognition in 1920 by the Royal Society was 'in no way due to [his] being a foreigner' but his defiance of the period's disciplinary logic (his intrusion into plant, and later animal physiology) – were able to move comfortably within these Western, bourgeois formats. Indeed, J. C. Bose, one of two Indians elected Fellows of the Royal Society between 1870 and 1920, thought social clubs 'and the institution of public dinners' one of the 'great Western invention[s]', as he put it in his acceptance speech for an Honorary Membership of the Rotary Club.⁵⁹ It would seem that for some Spanish American, Asian, and Middle Eastern scholars at least, bourgeois manners, professional identity, or a Western-style education could even – temporarily and conditionally – overwrite racial belonging. The Straits Confucian Association, for instance, which had men like the

⁵⁵ Talbot Kelly described Taw Sein Ko, a Calcutta- and Cambridge-educated archaeologist of Chinese descent, as 'a cultured gentleman of charming and agreeable manner'. Talbot Kelly, *Burma painted and described* (London, 1912; orig. edn 1905), pp. viii, 35–7, cited in Edwards, 'Relocating the interlocutor', p. 309. On the increasing uniformity and sobriety of male clothing, especially among reformers – English topcoats, bow ties, and top hats – in the Age of Empire, see, for instance, Christopher A. Bayly, *The birth of the modern world, 1780–1914: global connections and comparisons* (Oxford, 2004), 14–17.

⁵⁶ See, for instance, the story of how Taw Sein Ko wished to be remembered as 'a man of letters and a gentleman-scholar (*junzi*) in the Confucian tradition'; see Edwards, 'Relocating the interlocutor', p. 283.

⁵⁷ *Ibid.*, p. 313.

⁵⁸ Daston, *Rivals*, pp. 82–3.

⁵⁹ J. C. Bose, 'Reply to the address of the citizens of Calcutta on the 25th January 1921', in Dibakar Sen and Ajoy Kumar Chakraborty, eds., *J. C. Bose speaks* (Calcutta, 1986), pp. 178–84, at p. 181; on the value of sociability, 'public dinners', and clubs, see J. C. Bose, 'Address delivered at the Rotary Club on the 12 April, 1921', in *ibid.*, pp. 184–8, at p. 185.

British-educated Straits Chinese Lim Boon Keng at its heart, was dedicated to the 'diffusion of scientific and useful knowledge', and open to all young men, 'irrespective of race or Creed subject only to the observance of gentlemanly behaviour', as its 1914 'Rules' codifies.⁶⁰ Likewise, with those Peruvian scholars who were invited to send papers to international congresses, join scientific clubs, or receive foreign researchers, indigenous ancestry, though occasionally remarked upon, was conspicuously inconsequential to both their associates and themselves.⁶¹ This will come as no revelation to historians of Spanish America, who have long contended that a bourgeois habitus, a measure of worldliness, and 'gentlemanly behaviour' could often be more relevant to 'racial' identity and social belonging than physical characteristics.⁶² As Tim Harper describes in the case of Singapore, there was apparently a 'world of sociability', 'defined by conversation and letters', 'between the colonial élite and local society...in which strict hierarchies became more ambivalent'.⁶³ Historians have argued that even during the heyday of scientific racism and empire in the late nineteenth and early twentieth centuries, which in theory consigned men and women of colour to an 'immutably inferior position', the possibility of mutability quietly persisted for some.⁶⁴ Though it was commonly seen in terms of a threat – the danger of a white man's degeneration in a tropical climate or at the hands of native servants⁶⁵ – the prospect of malleability and the selective porousness of racial boundaries also allowed for 'race' to become not quite irrelevant but surmountable. The scientific community of the late 1800s was a social world permeable enough to include those who had mastered the rituals of learned sociability – with the collective pursuit of science overwriting not just a person's 'creed' but even race. At least in some measure, this also holds true for gender. In principle, the scientific sociability of the 'gentleman's club' was almost exclusively male, as historians have argued, with 'the very practice of association in the public sphere' excluding most women from its boundaries.⁶⁶ Indeed, the examples of North American, French, or Polish women who were able to carve out a place within scientific inquiry by the late 1800s and early 1900s are rare,⁶⁷ and those of female scholars from China, Peru, or India an idiosyncrasy – a testament to the power of intersectionality. Whatever admittance they did find was through

⁶⁰ This passage is a quote from *The rules of the Straits Confucian Association*, 1914, cited in Harper, 'Globalism and the pursuit of authenticity', p. 276.

⁶¹ Gänger, *Relics of the past*, pp. 69–71.

⁶² Marisol de la Cadena has made this argument for Cuzco. See, for instance, her account of the Cuzco professor and attorney Romualdo Aguilar, a perfect example of a Cuzco gentlemen and 'wordly intellectual'. Cadena, *Indigenous mestizos*, p. 55.

⁶³ Harper, 'Globalism and the pursuit of authenticity', p. 273.

⁶⁴ On the complexities of racial thinking even around 1900, see Peter Wade, *Race* (Cambridge, 2015), p. 81.

⁶⁵ *Ibid.*

⁶⁶ Harrison, *The bourgeois citizen*, p. 12. On women and domesticity globally, see Bayly, *The birth of the modern world*, p. 15.

⁶⁷ For a survey of the literature on women in science, see Sally Gregory Kohlstedt, 'Women in the history of science: an ambiguous place', *Osiris* 10 (1995), pp. 39–58, at p. 44.

social conduits, however: personal relationships, foreign education, or class belonging⁶⁸ – think of the Russian mathematician Sofia Kovalevskaya, born into a noble Polish–German family, who studied in Heidelberg, Berlin, and Göttingen⁶⁹ – but occasionally also precisely through their compliance with bourgeois matronly virtues such as diligence, domesticity, and dexterity. As Maria Mitchell, Professor of Astronomy at Vassar College, argued, woman was ‘needed in scientific work’ because of ‘her nice perceptions of minute details, all her delicate observation of colour, of form, of shape, of change, and her capability of patient routine [which] would be of immense value in the collection of scientific facts’.⁷⁰

One might argue that at least in some academic fields – antiquarianism, philology, or ethnology, to name but a few – Mexican, Chinese, or Lebanese scholars’ superior knowledge would have sufficed to render their presence at academic conferences and in learned conversations quite indispensable. While there can be little doubt that their ability to serve as mediators and to draw on sophisticated native knowledge traditions – be they Islamic, creole, or Buddhist – would often have assisted their inclusion, neither of these would have sufficed to grant them scholarly credit or visibility.⁷¹ As historians have long argued, modern science, despite its reliance and dependence on them, has largely either silenced, pushed aside, and denied its debt to the vast majority of its native ‘informants’ and ‘assistants’ or reduced their contributions to vernacular ‘raw material’ to be translated into ‘expertise’, ‘a universal key’.⁷² This was not because these informers were seen to be deceitful. Contrary to what

⁶⁸ For one example from Peru – tellingly, a wealthy *salonnière*, collector, and naturalist – see Stefanie Gänger, ‘The many natures of antiquities: Ana María Centeno and her cabinet of curiosities, Peru, ca. 1830–1874’, in Philip Kohl, Irina Podgorny, and Stefanie Gänger, eds., *Nature and antiquities: the making of archaeology in the Americas* (Tucson, AZ, 2014), pp. 110–24. I take the argument that admittance for women was possible through personal relationships, the institutional configuration of education, or, indeed, social class from Kohlstedt, ‘Women in the history of science’, p. 44.

⁶⁹ Magdolna Hargittai, *Women scientists: reflections, challenges, and breaking boundaries* (Oxford, 2015), pp. 197ff.

⁷⁰ Maria Mitchell, ‘The need of women in science’, *The Victoria Magazine*, 28 (1877), pp. 187–92.

⁷¹ As Miruna Achim has argued, it was particularly creole experts who saw their peculiar privilege and province, in the mediation between the enlightened sciences and ‘the Indian’ – the communication of the knowledge of the ‘inscrutable’, withdrawn, ‘natives’ to a wider world. Miruna Achim, *Lagartijas medicinales: remedios americanos y debates científicos en la ilustración* (Mexico, 2008), p. 75. On the contentious relationship between imperial and non-Western knowledge, see, for instance, Sujit Sivasundaram, ‘Sciences and the global: on methods, questions, and theory’, *Isis*, 101 (2010), pp. 146–58; Marwa Elshakry, ‘When science became Western: historiographical reflections’, *Isis*, 101 (2010), pp. 98–109.

⁷² Kathleen S. Murphy, ‘Translating the vernacular: indigenous and African knowledge in the eighteenth-century British Atlantic’, *Atlantic Studies*, 8 (2011), pp. 29–48, at p. 29. Some historians of science have recently suggested ‘recast[ing] the global history of science as a coercive form of labour management’ on those grounds. Rood, ‘Toward a global labor history of science’, p. 266. On native informants in African ornithology, see Nancy J. Jacob, *Birders of Africa: a history of a network* (New Haven, CT, and London, 2016). On the Caribbean, see Londa Schiebinger, ‘Prospecting for drugs: European naturalists in the West Indies’, in Sandra Harding, ed., *The postcolonial science and technology studies reader* (Durham, NC, 2011), pp. 110–26.

social histories of science have commonly argued – that gentlemanly status was a prerequisite for a person’s ‘word...to be relied upon’⁷³ – the ‘simple’, ‘humble’ folks were often granted truthfulness on account of their very simplicity. Long into the nineteenth century, there persisted an enduring discourse, especially in natural histories, that advocated reliance on the observations of ordinary, poor, and illiterate knowers: wise women, peasants, or ‘wild Indians’ who, in their very illiteracy, poverty, and closeness to base matter, were credited with the ability to observe nature more directly and accurately than ‘civilized man’.⁷⁴ It was precisely their association with particularity and locality, however, and with inferiority and simplicity, that both made them valuable as informants and their participation in the period’s scientific community as peers inconceivable. For the nineteenth and twentieth centuries allocated that community of worldly bourgeois men, and modern Western science more broadly, the prerogative of universality and abstraction, precisely in distinction from its many informants, assistants, and objects of study, whose knowledge came to be considered as reliant on evidence ‘directly available to the senses’ and unalienable, ‘bound’ to the lives of the people who generated it.⁷⁵ To be termed a scholar, a ‘man of science’, or a ‘pioneer’ in his field, as people like Taw Sein Ko, Simón Yrigoyen, or Ibrahim al-Yaziji well were,⁷⁶ was contingent upon qualities exactly opposite to particularity and simplicity. It was premised upon a Western education and the association with bourgeois sophistication, progress, and modernity, which, in turn, conferred the authority to generalize, abstract, and articulate creditable ‘metonymic relationships’ between the specific and the universal.⁷⁷ For Lebanese philologists, Japanese

⁷³ Social histories of seventeenth-century science in England have long argued that social belonging – civility, sociability, and, above all, gentlemanly status – had an impact on the settlement of scientific controversies. See Steven Shapin, *A social history of truth: civility and science in seventeenth-century England* (Chicago, IL, and London, 1994).

⁷⁴ On ‘simplicitas’ and truthfulness, see also Andrea Albrecht et al., ‘Zum Konzept Historischer Epistemologie’, *Scientia Poetica*, 20 (2012), pp. 137–65, at pp. 151–2. See also Dana Heller, ‘Holy fools, secular saints, and illiterate saviors in American literature and popular culture’, *CLCWeb: Comparative Literature and Culture*, 5 (2003), pp. 95–104. Historians have long argued that early modern medical thought, in its reliance on the truths spoken by ‘illiterate knowers’, drew on a genre of Christian piety that placed the best hope of salvation for mankind in the poor and ordinary people, who were closer not only to nature but also to God than the mighty. Harold J. Cook, *Matters of exchange: commerce, medicine and science in the Age of Empire* (Hyderabad, 2008), p. 34. On ‘wild Indians’ and truthfulness, see also Stefanie Gänger, *A singular remedy: Cinchona across the Atlantic world, 1751–1820* (Cambridge, 2020), ch. 1.

⁷⁵ Arun Agrawal, ‘Dismantling the divide between indigenous and scientific knowledge’, *Development and Change*, 26 (1995), pp. 413–39, at pp. 416–17; Elshakry, ‘When science became Western’.

⁷⁶ The term ‘pioneer’ is taken from comments on the work of Taw Sein Ko. Cited in Edwards, ‘Relocating the interlocutor’, pp. 286–7. On the Lebanese Christian orientalist Ibrahim al-Yaziji being referred to as ‘on par with Leiden Orientalists’, see Krämer, ‘Orientalism and the study of lived religions’, p. 143. The reference to ‘men of science’, bound to their northern colleagues by ‘relations of friendship’, is taken from a letter by the Austrian naturalist Karl Scherzer to his Peruvian counterpart Simón Yrigoyen, 31 May 1859, Lima, Archivo General de la Nación, RJ 190, 8.10. Karl Scherzer was an Austrian naturalist.

⁷⁷ Shapin, ‘Cordelia’s love’, p. 23.

students of Buddhism, and Peruvian antiquaries to be referred to as on par with Leiden Orientalists and Berlin naturalists, both by themselves and by other contemporaries, was contingent upon social epithets more than anything else. Rather than truthfulness or possession of facts, national origin, or skin colour, what set the man of science apart from the informant was class.

III

Global history has long been under critique – both from within and outside the field – for its sense of proportion, or rather, its lack thereof: for overstating the significance of ‘influences’, both inward and outward, over internal causes⁷⁸ and, in the same vein, for unduly privileging ‘unusually cosmopolitan individuals’ who were, after all, the exception rather than the rule even in modern history.⁷⁹ These points are well taken; indeed, a penchant for overstating the weight of connections and cosmopolitans may well be a congenital disorder in a field devised for the quest of these very objects. Social history’s attentiveness to class, the quantitative and the social, in turn, shows great promise as an antidote. A global intellectual history and history of knowledge tempered with it would invariably weigh the relative importance of ‘influences’, seek to understand the social configuration of boundaries, and endeavour to comprehend the exact reach and meaning of ‘the global’ in the past. Nineteenth-century cosmopolitanism and internationalism, for that matter, it would seem, entailed the view that participation in the period’s scientific community ought not necessarily to be restricted to one country, ‘race’, or empire, to be composed of men – and, very exceptionally, women – from various parts of the world. This acceptance – however reluctant it may often have been – of diversity encompassed geographical, national, in some measure even ‘racial’ diversity; it did not, however, it would seem, extend to the social – somewhat astoundingly, the least porous, and permeable of them all by the late 1800s and early 1900s.⁸⁰ In that regard, the late 1800s saw a particular kind of scientific internationalism, expressive of the coercive universality of Western civilizational norms by the 1880s – its call for particular kinds of education, civility, and technological sophistication as measures of modernity⁸¹ – which manifested in a pressure toward uniformity and sameness, to the detriment of diversity and difference. Indeed, disparities in social class and ‘education’,

⁷⁸ David Bell, ‘Questioning the global turn: the case of the French Revolution’, *French Historical Studies*, 37 (2014), pp. 1–24, at p. 23; Jeremy Adelman, ‘What is global history now’, *Aeon Magazine*, 2 Mar. 2017, <https://aeon.co/essays/isglobal-history-still-possible-or-has-it-had-its-moment>.

⁷⁹ These portrayals are increasingly seen as ‘misleadingly hopeful’, as Jan de Vries put it. Jan de Vries, ‘Playing with scales: the global and the micro, the macro and the nano’, *Past & Present*, 242 (2019), pp. 23–36, at p. 29, <https://doi.org/10.1093/pastj/gtz043>.

⁸⁰ On present-day cosmopolitan as a worldview and way of life suited to the more powerful and wealthy, see, for instance, Robert J. Holton, *Cosmopolitanisms: new thinking and new directions* (Basingstoke and New York, NY, 2009), p. 9.

⁸¹ Osterhammel, ‘Hierarchien und Verknüpfungen: Aspekte einer globalen Sozialgeschichte’, pp. 682–3.

civility, and ‘manners’, it appears, were harder to surmount than many we tend to associate primarily with the Age of Empire. A global social history of science and knowledge therefore reveals, rather than forthright ‘exclusion’ and ‘silencing’ of non-Europeans, complex epistemic hierarchies and geographies of knowledge. It exposes both ‘connections and their limits’⁸² and a global scientific community that was both more permeable and less so than hitherto assumed.

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⁸² Frederick Cooper, ‘What is the concept of globalization good for? An African historian’s perspective’, *African Affairs*, 100 (2001), pp. 189–213, at p. 213.

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