



Editorial

Decolonizing Physics: Learning from the Periphery

Should the academy be decolonized? Can the sciences be decolonized? What would decolonized science look like? These questions have become increasingly pressing as many disciplines and institutions have tried to reckon with how they have been shaped by colonial practices. Working groups, reading groups, seminars and public lectures have been organised in sociology, history, English literature, physics, and the history and philosophy of science—to pick out just a handful of the decolonisation groups currently active in the University of Cambridge, which has also undertaken to understand the extent to which the university has profited from the slave trade. Facing this simultaneous call across such diverse offers an unusual opportunity, even if it raises very different issues for researchers, teachers, and students in radically different institutional homes with such different backgrounds and concerns.

The legacy of colonial influences is very much on the surface in the arts and humanities, the social sciences, and even the biomedical sciences. But many might think that the case is much less clear for the physical sciences. Yet the role of physical knowledge, material technologies, and engineering in the practical work of imperialism in the nineteenth and twentieth centuries (especially in energy, transport, communication, and weapons systems) means that physics was central to colonialism. It further shaped the nation-building of countries like Brazil, India, and South Africa, after they won independence from colonial rule. The history of science is critical for understanding both the historical development of colonialism and its legacies—and thereby for illuminating the path that leads beyond them. This is nowhere more evident than in studies of the development of the physical sciences in Colonial India, as Deepanwita Dasgupta's paper on C. V. Raman in this issue shows.

Along with Meghnad Saha and Satyendranath Bose, Raman was part of a distinctive community of Indian physicists who won international renown while working in institutions that can only be described as peripheral—even if they were modelled on British examples such as the Royal Institution. This cohort emerged after World War I with as strong an orientation to recent German physics as to British physics. Although Raman, a Nobel Prize winner, has received more scholarly attention than his contemporaries, historians have shown that Saha is particularly significant for Indian independence for his work both as an institution-builder and political figure. Like Dasgupta, Somaditya Banerjee has written on both within the pages of this journal, and Abhar Sur, Rajinder Singh, and Falk Riess have also devoted attention to this group of physicists. Dhruv Raina, Gyan Prakash, and Robert Anderson offer studies of colonisation and

decolonisation in India. Dastgupta's paper in this issue therefore contributes to an ongoing effort to understand how physics grew in Colonial India and how it formed a bridge into postcolonial India.

Here, Dasgupta focuses on Raman as an exemplar, but pursues the more general concern of establishing the conditions that allow peripheral members of a community to make fundamental contributions to its work. This question should be central to current concerns with decolonising curricula. Indeed, Dasgupta uses a study of Raman's career to provide an analysis that is general enough that one might also apply it to women in physics now, or to the way Albert Einstein earned recognition for his research while working in a patent office. Both Raman's and Einstein's early careers were highly dependent on the ability to publish in leading journals, which meant that no matter how keenly each felt their marginal position, their work had the chance of winning more general acceptance. Both, unfortunately, had to overcome chauvinism in diverse forms.

Nor is such chauvinism a thing of the past. The back page of the April 2019 issue of *APS News* offers a shocking, collective account of the experiences women physicists currently face, with a compendium of incidents that occurred during the fall meeting of the American Physical Society Division of Nuclear Physics. Julie Libarkin summarizes recent studies in her article "Yes, Sexual Harassment Still Drives Women Out of Physics," in the May issue of *APS News*. This is a reminder of a central point raised by the decolonisation movement, which characteristically has been concerned with the geopolitics of racism and epistemology: no matter the character of their minds, the disadvantaged must meet questions of identity in their bodies.

In a forthright paper in the first issue of the journal *Decolonization: Indigeneity, Education & Society* in 2012, Eve Tuck and Wayne Yang reminded readers that decolonisation is concerned with the repatriation of indigenous land and life. They argued that it should not be treated as a metaphor: other forms of disciplinary improvement and social justice might further settler colonialism, no matter how desirable they may be in themselves. The social movement of decolonisation may now have jumped that gate, but questions of access and identity must surely be addressed by the sciences open to the possibility that wider participation may change the concerns even of physics. We should ask how power imbalances have shaped our knowledge in elite as well as in other institutions in order better to recognise all the legacies of power, for they have so often clouded knowledge. And on the geopolitical stage, as the increasing responsiveness of the IPCC to the demands of developing countries has shown, climate change reflects the legacies of colonial and commercial power in forms we must all learn to meet.

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