Postcolonial Histories of Computing

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In the early 1990s, Indian historian Dipesh Chakrabarty proposed an agenda for "provincializing Europe."[1] According to Chakrabarty, philosophers, historians, and other scholars who shaped the nature of western social science developed their theoretical and empirical projects to embrace the entirety of humanity. However, they also produced this knowledge in relative, and sometimes absolute, ignorance of the histories and experiences of those living outside of the western world. In his response, Chakrabarty sought to demonstrate how our categories may be more contingent, and less universal, than we have accepted—often without evidence. In other words, this historical method promotes a more limited and thus accurate use of core concepts that usually are translated without any problem, making the provincialization of Europe a cautious engagement with historical research.

Since that time we have seen a rise in what is called *postcolonial studies of science and technology.* Ultimately this field seeks to reevaluate our theories and systems of society and technology in light of the ways that they are influenced by the long history of colonialism. Here I want to continue and encourage a discussion on what postcolonial science and technology studies mean for historians of computing.

Beyond Dichotomies and Divides

In the field of human-computer interaction, Kavita Philip, Paul Dourish, and Lilly Irani developed the concept of *postcolonial computing*.[2] Bringing elements of science and technology studies (STS) and postcolonial theory, the authors suggested that postcolonial science studies can do more than expand answers to questions already posed. Instead, STS can generate different issues and, more importantly, different ways of looking at the world. They brought histories and anthropologies of colonial technoscience together to map the production of knowledge and experiences of computing across the globe, allowing us, for example, to look for work that is out of the bounds of this regime.[3] In that sense, their approach guides histories of computing by reconsidering spatial divides, such as east/west or here/there, or by how in a world of uneven power relations the very presence of an observer can impact what is being observed.

Considerations of the importance of geography,[4] attempts to destabilize or queer our approach,[5] and efforts to form a global understanding of the larger systems of material production and distribution essential to computing[6] converge with a postcolonial approach to imagining other narratives. According to Warwick Anderson, postcolonial intervention "offers us a chance of disconcerting conventional accounts of so-called 'global' technoscience" by considering how dichotomies emerged under colonial regimes.[7]

On the one hand, as expressed by Amit Prasad, postcolonial science and technology studies can offer useful analytical tools to move beyond older ways of doing history that relied on artificially inflated west/non-west or developed/developing dichotomies, as well as north/south technocultural divides.[8] In the place of these dichotomies and divides, Chakrabarty and others encourage us to be better scholars and investigate the actual relationships.

On the other hand, we can put into broad relief the uneven terrains of technoscience networks and flows. Here we can move past an established map of national histories of computing to the flows and exchanges that characterize the actual production of scientific and engineering knowledge. Postcolonial contributions to the history of computing may help us better understand the impact of diasporas on the traditional concept of the nation-state and national histories and, moreover, to replace the mechanical "adoption and impact" with translation.

We can use the role of the nation-state and national histories as an example of potential postcolonial contributions. Mary Louise Pratt coined the term *contact zone* to describe social spaces where "disparate cultures meet, clash and grapple with each other, often in highly asymmetrical relations of dominance and subordination."[9] Such a phenomenon draws attention to Downey's claim on the associated human labor that is central for the processes of translation in the establishment of any technology.[4] This also extends to processes like migration, media flows, extraction, and trade and what interactions in contact zones generate as it urges us to consider processes of "brain drain" and "brain circulation."[10] In that sense, we can reevaluate the porosity of the state, especially when considering the transnational networks that operate through it. This is the case for the entangled development economics and computing that characterized the Taiwanese entrance of computing technologies, which later give room for the emergence of the tinkering practices of microcomputing manufacturing.[11,12]

Making Legacies Explicit

Postcolonial approaches to the history of computing can also invite us to revisit the ways we understand the spread of computing technology. Often, implicitly or

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explicitly, this spread is understood as adoption or impact, as in the work of science historian George Basalla.[13] We can draw on Corinna Schlombs approach to the study of technology transfer, in which she demonstrates that technologies are often selected by and adapted to local socioeconomic, environmental, and other circumstances[14] by a great number of stakeholders like bureaucrats, technocrats, and engineers.[12] However, postcolonial methodologies stress the politics behind transfer or appropriation, particularly in the processes of translation that occur in contact zones, both in the linguistic sense and the geometric sense, referring to the movement of a figure from place to place.[2] With translation, Philip, Irani, and Dourish addressed how knowledge circulates in other moral and symbolic economies, allowing us to frame ideas of diffusion as a multiple-direction process where we can even look for signs of opposition.

A postcolonial history of computing does not neglect the historical centrality of particular spaces or groups. Instead, it may give us a new set of tools to understand the multiple social forces that converge in these locations. It can contribute to the global understanding of the larger systems of material and knowledge production and distribution essential to computing. As Nathan Ensmenger showed, the computer industry is built on more than just abstractions, algorithms, and information: the global life cycle of a typical laptop computer links mines in Africa and South America, factory cities in China, retail stores and homes across America, and disposal sites in Ghana.[6] This structured and global life cycle may find corollaries in the production of academic knowledge. Chakrabarti noted a division of labor where academics located in the North Atlantic produce theories while scholars around the world must bring local cases to complement or extend them.

Such an approach is central to my research project on the local histories of computing in Colombia. While researching the history of computer engineering education in Colombia,[15] I found the response of local engineers to the possible development of computer manufacturing in the country during the 1980s. As the prototype for a "national" personal computer emerged through networks of electronic parts businesses, the skepticism of US-trained computer engineers condemned the project to failure. This particular moment in 1984 allowed me to follow the links between these engineers and US business as well as the market of electronic parts and the circulation of objects that allowed other engagements with computer consumption in Colombia. Postcolonial theory helped me to consider not only the political economy that shaped these networks, but also the symbolic and cultural aspects of defining these projects under colonial divides that represented the local production as traditional and rudimentary.

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My intention here is to engage in the *Annals* conversation about the boundaries of the discipline. It is not to add records from every country in the world in order to declare the cosmopolitanism of computing. Instead, it is to engage with different analytical tools, such as those identified by Marie Hicks,[5] to find differences in more settings than ever before. Ultimately, a postcolonial history of computing offers a way to understand structures of social power, infrastructures, assemblages, and political economies that create the conditions under which technoscientific objects are created and used.[2] This is a reason to engage in a broader discussion on technology production's conditions of possibility and the role of history in making explicit the legacies that usually became invisible.

References and Notes

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