

CRITICAL COMMENTARY

The Hard Disciplines

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Science and Technology Studies (STS) is a latecomer to postcolonial and decolonial debates. In 2012, Kavita Philip, Lilly Irani, and Paul Dourish published “a tactical survey” of possibilities for postcolonial computing, noting that “the ‘hard’ disciplines” — the sciences and science studies — had by and large held themselves apart from the political and theoretical movements common across other academic fields. “STS *did* take on the hard bastion of objectivity,” they explained, “transforming Euro-American sociology, history, and philosophy. However, much of the mythos of the Western origin stories of science and rationality, while being demolished in theory, manifested itself in practice, in a locational focus on Euro-American spaces of science” (Philip et al., 2012, p. 6). On the other hand, STS scholars have repeatedly lamented the lack of attention to “hard” science and technology within the mainstream of postcolonial studies. In a recent issue of *Science, Technology, and Human Values* dedicated to feminist postcolonial technoscience, editors Anne Pollock and Banu Subramaniam insist that this inattention is no longer tenable. “As science

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and technology have ... moved center stage in the circuits of state and global power,” they write, “we have witnessed technoscience’s vital role not only in those circuits but also in the social movements that resist them” (Pollock & Subramaniam, 2016, p. 952). Can the big guns of critical theory be retrained from poems and movies onto algorithms or process control?

Among those who *are* working at the intersection of post- and decolonial theories and STS, a common approach has been to examine the legacies of colonial ideology within engineered objects, scientific categories, or medical protocols — the ways these things incorporate and prescribe particular values. Histories of international technical standards have been an important branch of this research because standards exhibit, as Susan Leigh Star and Martha Lampland point out, “generative entrenchment,” wherein early decisions “ramify throughout the growth of the system” (Star & Lampland, 2009, p. 14). A classic example of generative entrenchment in computing is the “linguistic imperialism” that inflects nearly all the information technologies initially designed by or for English speakers, from the level of the operating system to that of the screen. In a 2016 issue of *The IEEE Annals of the History of Computing*, Dongoh Park explains that “the English language has long served as the lingua franca of computing and computer mediated communication. Many of the core applications and standards of digital computing, including programming languages, operating systems, and applications, have been developed, documented, and serviced in English” (Park, 2016, p. 40). When it comes to computing, to use the terms of Marxist critique, the technical “base” and the cultural-aesthetic “superstructure” cannot be cleanly separated.

Linguistic imperialism materializes in optical character recognition (OCR) software that is slower and less accurate — or that fails entirely — for so-called “special characters” including Asian scripts, multilingual Mexican colonial documents (see Hannah Alpert-Abrams, in this roundtable), and Braille. Similarly the speech-processing software in cochlear implants, marketed globally by only a few corporations, is

largely based on historical trials with English-speaking test subjects, and privileges non-tonal over tonal languages.¹ The generative entrenchment of colonial ideals also structures visual media. As Simone Browne explains in her book *Dark Matters: On the Surveillance of Blackness*, embedded racism and “white prototypicality” pervade today’s digital imaging technologies (Browne, 2015, p. 110).²

Valuable though they are, exposés of embedded ideology run the risk, as Pollock and Subramaniam point out, of maintaining or emulating unidirectional models of technological progress wherein “science, rationality, progress, and enlightenment always rest in Europe or the West, to subsequently diffuse to non-Western nations” (p. 953). These critiques often demand technological solutions in a manner that can sit too comfortably with the ideals of innovation, utility, progress, and development. Is it *decolonizing* to improve technology incrementally, expand access to mainstream computing, or diversify ownership and management within corporate capitalism?

Beyond invention and design, postcolonial and decolonial analyses can be applied at every stage of the global computing supply chain: physical resource extraction, information extraction in the emerging paradigm of “data colonialism,” low-wage electronics manufacture and low-wage digital labor, pirate assembly, e-waste, pollution, and environmental justice. Digital colonialism also manifests in the interlacing of computing and everyday life, from digital border control to automated weaponry to Airbnb-enabled racism to the spillover between virtual and physical harassment.

Narrow stories of heroic ICT invention — limited to predictable regions and elite actors or corporations — often fail to weigh the significance of political economy, law, and (inter)national policy. Scientific knowledge production can also be expanded or re-situated by calling attention to information transfer and idea theft, historical misattribution, and “peripheral” digital practices (see Anita Say Chan, in this roundtable), or by emphasizing [labor, maintenance, and repair rather than invention](#). Many postcolonial STS scholars foreground the ways people take

advantage of technology: how they domesticate, personalize, and interpret the electronic artifacts they come by; how ICTs are appropriated or put to unintended purposes, from improvisation to creative misuse to outright remaking. Others underscore the prevalence of resistance, refusal, abandonment, and non-use.

From social media to digital databases, ICTs are equally present in the ongoing project of decolonization, playing significant roles in activism and scholarly criticism. But tools of computing and telecommunication were built to employ *us*, treating us as the “human factor” in technical networks at once dense and extensive. To enroll computing in the project of decolonization, the devices that occupy so much of our time must equally preoccupy our research and inquiry.

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Notes

¹ I’ve written on this topic in “Do Signals Have Politics? Inscribing Abilities in Cochlear Implants,” *The Oxford Handbook of Sound Studies*, ed. Trevor Pinch and Karin Bijsterveld (Oxford UP, 2011), 320-346.

² On the term “white prototypicality,” Browne cites Lewis R. Gordon, “Is the Human a Teleological Suspension of Man? Phenomenological Exploration of Sylvia Wynter’s Fanonian and Bidocean Reflections,” in *After Man, Towards the Human: Critical Essays on the Thought of Sylvia Wynter*, ed. Anthony Bogues (Kingston, Jamaica: Ian Randle, 2006), 239.

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Bio

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