

Introduction

Computing in/from the South

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Abstract

In this introduction to the special section “Computing in/from the South,” we position the South as a method to change dominant frames about the past, present, and future of computing. We discuss three narrative frames—developmentalist, postcolonial, and decolonial—to trace a significant body of thinking on computing otherwise. We argue that each of these frames provides a different optic to emphasize the contributions of non-Western, feminist, and queer epistemologies to computing worlds. Rather than thinking of these co-constructions as replacing one another linearly, we argue that they each create a different kind of relation among computing’s spaces and places, its pasts and its futures. These relations, and the switches between them, comprise what we describe as computing in/from the South as both an empirical and a methodological framework. The introduction first centers developments in computing worlds that are taking place outside centers of power. Based on an analysis of these developments, we then move beyond the limited twinned frames of exploitation and resistance to unpack the relational, political, and

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affective undercurrents that run through data-driven worlds from perspectives in and through the South.

Introduction

How can computing otherwise—computing that does not start from the presumed centers of power, computing that solves different kinds of problems and solves problems differently—become part of a kind of listening that centers the worlds and the people who have been, albeit essential for expansion and maintenance, made invisible?

If “computing” is a field with multiple manifestations, “South” is a method. Putting the South in conversation with the field of computing helps us reorient our inquiry toward multi-stranded histories with their own distinct technical forms and power relations. Whereas the South is often mistaken as a monolithic marker of unsullied resistance, we suggest it is better understood as an historic block, an epistemic formation, a political compass and, a poetics of relation (Glissant, 1997; De Souza Santos & Meneses, 2009; Comaroff & Comaroff, 2012). The essays in this special section bring all of these dimensions forward as an urgent need to think and act from a relational South.

The narratives assembled here begin at many different sites across the globe. These locations may have a relationship with presumed centers of computing power like Silicon Valley, and they may begin in places like Mexico, Brasil, Kenya, or India that have traditionally been associated with the South as a geographic location. But they may also move from Romania to China, in recognition of another, submerged history of the method of the South, that of the international socialism and its long, underground histories. Approaching the field of computing from unexpected angles, a view from the South pays equal attention to contests over knowledge and over materials and desires that take place within and across multiple sites.

Switches across the Network: Reorientation Points for Computing and the South

This special section was born out of a panel for the American Anthropological Association meetings (2017) titled “Hacking Imaginaries: Fabricating Utopics,” organized by Erin McEroy, Héctor Béltran, and Luis Felipe R. Murillo. Sareeta Amrute joined Luis Felipe R. Murillo as discussant to engage a rich set of papers

that focused on the political imaginaries informing “hacking” as a technopolitical practice that constitutes and reconstitutes gender, political practice, and the meaning of the human, the livable, and the future. The panel’s focus was on configurations of alternative techno-political projects challenging Silicon Valley provincialism beyond the smokescreen of journalistic discourses with their saturated tropes (“hackers” as rebels; “software developers” as rock stars, “tech entrepreneurs” as disruptive actors, and so on). When Sareeta and Luis Felipe began gathering papers and essays for the present volume, they saw a need for foregrounding perspectives from the South in the critique of the perverse convergence between large-scale data analytics and pervasive surveillance (Lyon, 2007; Zuboff, 2019; Snowden, 2019), a critique that necessarily includes the evaluation of infrastructural concentrations in the hands of what Joshua Weiss (2017) calls the “Four (Silicon-Valley-based) Horsemen of the Internet.”

We found ourselves in agreement that the problem of large-scale data capture (with equally large-scale harms) rests on a set of assumptions about persons, processes, values, locations, and technologies that emanate from hegemonic centers where computing is currently weaponized. Computing has been, after all, a means for waging and support domestic and foreign wars, magnifying, reproducing, and reconfiguring structures of inequality North and South (Sharkey & Suchman, 2013; Zetter, 2014; Suchman, 2016). At the same time, the neocolonial extractive model of North–South relations embodied in terms like “data colonialism” did not seem to do justice to the multiple roles that information technologies take across “Southern” locations (Couldry & Mejias, 2019).

Computing from the South addresses an expanded archive for the geographies and the possibilities for present and future of computing. To write these complicated histories also means seeing “the peoples of the Global South as living less in the shadow of the West” (Gupta et al., 2018, 10) and more living out their own relationships with digital technologies, some, but of course, not all of which may be effecting positive social change. Journalistic and other professional accounts of computing historically have contributed to a reified depiction of undifferentiated expert communities (Ensmenger, 2010). One consequence of this reification is that analysts miss possibilities for remaking the computational present, because these possibilities are mostly absented from the archive of computer histories (Pujol & Montenegro, 2015; Marques, 2005). This erasure is particularly evident in the field of “digital design”, an important vantage point for

the study of the unequal dynamics that are fundamentally at stake in computing in/from the South (Benjamin, 2019; Escobar, 2018; Costanza-Chock, 2020; D'Ignazio & Klein, 2019). As the discursive position of the "designer" mobilizes an array of privileges, it inevitably begs the question of who gets to be the researcher and the designer of digital platforms, and who does not. Mobilizing this critique across Southern geographies requires an understanding that, as Lily Irani's (2019) work shows, computing projects for developmental ends divide high-end creative designers from the folk who produce singular ingenuity rather than reproducible innovation. Building on, rather than dismissing this singularity, computing in/from the South reaches outward from the critique of design to symbolic and material practices of hacking, mimicry, and network-building to complicate the very projects that are often undertaken in the South's name. These projects often reify a particular English-language, well-resourced, urban mode of computing that divides those who embody a hegemonic professional disposition from the rest, whose geographies are transformed into libraries for data-driven innovation (Russert, 2019). To counter this tendency, we weave together three strands of thinking on computing cultures, which might be called developmental, postcolonial, and decolonial computing. While these strands may correspond roughly to political projects and historical periods, in the present moment they overlap as ethical and political orientations within computing worlds. That is, developmental, postcolonial, and decolonial computing practices describe a horizon of what a future computing might look like, and in service to that horizon, each narrates a different arc for computing's pasts and presents.

Each of these approaches begins by revising the white masculinist hegemonic story of computing that emerges in the United States and Europe (Rankin, 2018; Hicks, 2018). Since the 1940s, digital technologies have been assumed to be Euro-American-driven instruments of state control. The masculinist orientation of computing was accomplished historically (and gradually) by displacing women from coding jobs as those jobs gained in prestige in the workplace on both sides of the iron curtain (Tatarchenko, 2017). At the same time and through similarly gradual yet persistent processes, the contributions of Indigenous, African, and Asian mathematicians were incorporated and made invisible within computing's standard history (Eglash, 2005; Mavhunga, 2018). As Medina et al. (2015) attest, hegemonic approaches to technoscientific innovation

give institutions and individuals in the most industrialized regions of the world disproportionate credit for scientific and technological

creation, erasing the contributions of all other participants in this process and presenting those in other areas of the world, such as Latin America, as passive recipients or followers. (p. 3)

Euro-American expert discourses on science and technology often needed their underdeveloped or Indigenous technological “Others” through which to institute their own place in the world writ large (Fabian, 2002; Jobson, 2020; Trouillot, 2003). This relational model, once established, would continue to be a theme in computing through the mid-twenty-first century.

The first rebuttals of Euro-American monopoly began with nationalist IT policymaking in South and East Asia, Latin America, and elsewhere as science and technology took center stage as part of a struggle for national autonomy. The rationale for this struggle was comparative but inward-facing: if native culture and training could produce universally recognized scientific knowledge, then this was evidence that these countries, contrary to what their colonial and imperialist rulers defended, were ready for self-determination. Technologies, old and new, were symbols of national strength, autonomy, and middle-class aspiration (Prakash, 1999; Abraham, 1998, 2017; Evans, 1995). After formal independence, computing and statistical technologies also became vehicles for mediating national rule through their application to agriculture, population, industry, atomic weaponry, and communication in Southern countries, such as India and Chile (Gupta, 1998; Philip, 2016; Medina, 2011; Roy, 2007).

Projects for computers as aspirational devices for nation-building find expression across a large swath of political locations. In Latin America, concurrent dynamics of design, fabrication, training, disassembling, and cloning describe a distinct but parallel trajectory with concerted efforts to build public policies for “technological autonomy” (Murillo, 2010; Chan, 2014; Garcia dos Santos & Caminati, 2014; Medina et al., 2015).

Across these varied southern locations, the 1990s marks a fundamental transition toward an internationalist alliance of local companies with transnational IT giants, leading to the existing global assemblages in which digital networks serve as enablers and local and transnational elites drive these developmentalist agendas. Peter Evans’s (1995) comparative sociology of nascent computing industries of Brazil, India, and Korea is instructive. Covering the period of formation of national industries in the 1970s and 1980s, Evans portrays parallel histories of “dependent

development” that are fundamentally driven by state policies of “innovation”—indexing both aspiration and capacity-building to bootstrap a new economic sector with the potential to change a nation’s position in the international division of labor. As Evans and others demonstrate, local computing cultures depended on the role of the state in steering and fostering national computer industries by sheltering local initiatives from transnational competition (see Amrute, 2010; Marques, 2005). Though the longer history of developmentalist projects can only be telegraphed here, the ongoing attempts to develop national technologies as symbols of strength on a world stage and as a commodity for end-users at home and abroad is also accompanied by systems of biometric surveillance and large-scale data collection in the name of producing better outcomes for poorer populations. In the case of India’s Aadhaar project and the India Stack, for instance, the Aadhaar identification number was developed as a biometrically secured unique ID to smooth the delivery of welfare benefits to the poor, a development that led to the widespread adoption of the number for services such as getting a bank account, a requirement that was later deemed unconstitutional (Khera, 2019; Singh, 2020). The India Stack, a series of applications developed through private venture capital, uses Aadhaar-collected data and systems as a foundation to build “profit-generating, cloud-based digital software,” marking an intertwining of governmental and financial capital interests that further entrenches biometric monitoring (Dattani, 2019, p. 415). These developmentalist goals in privatized settings describe many of the current trends in computing in the South.

A postcolonial approach to computing moves away from a developmentalist frame by writing against the narrative of Southern deficit. That is, it recognizes that within developmental narratives, the South is invariably figured as catching up to the North (or the East to the West). For postcolonial computing scholars, such an approach diminishes the active presence Global South actors and geographies have played in the development of computing technologies; holds onto the promise of computing as a future utopia once technologies are divorced from their problematic pasts and present harms; and has difficulty recognizing cascading relationships of power within and across geopolitical and economic formations. As Clapperton Mavhunga’s introduction to the edited volume *What Do Science, Technology, and Innovation Mean from Africa?* contends, “a geophysical zoning...has been hammered into our brains: that technology is for academy-trained engineers, hence the emphasis on experts, and that technology can only come from the West and is ‘transferred’ to the technology-poor areas of

the world” (2017,4). Scholars of postcolonial computing undo these simple binaries through studies of technologies in practice as they move across geographic borders. Such studies are attuned to the inconsistencies within politically charged projects like the One Laptop Per Child initiative (Philip et al., 2012; Fouché, 2013). They also elevate histories of computing outside the West as a means of creating an independent narrative around computing beyond the familiar story of geopolitical, state-driven competition (Sandoval, 2019). Finally, they turn to the work of other experts below, beyond, and yet connected to hegemonic circuits of power (Addo, 2017; Amrute, 2016; Murillo, 2019; Nguyen, 2016 Prieto-Nanez, 2016; Takhteyev, 2012).

Decolonial computing approaches the question of computing cultures by squarely centering Black and Indigenous technological histories. This field is still expanding, we may already note that it further removes the discussion of computing from reliance on Western narrative frames. Decolonizing approaches rewrite relations of power in the South by foregrounding the complicated and complicit relationships that computing projects have to the development and settling of Indigenous lands and the continued imperial relationships such projects support (Bidwell, 2016; Nakamura, 2015). In other words, decolonial perspectives bring with them a critique not only of the dominant Western frames of computing cultures, but also of the dominant middle- and upper-classes within Southern locations and their diasporas. Most importantly, decolonizing computing also means returning to questions of control and redistribution of the way technologies are designed, developed, and disseminated from with an understanding of asymmetrical power relations, especially as tied to the dual questions of institutional funding and organization and of ownership and autonomy. As Marika Cifor, Patricia Garia, T. L. Cowan, Jasmine Rault, Tonia Sutherland, Anita Say Chan, Jennifer Rode, Anna Lauren Hoffman, Niloufar Salehi, and Lisa Nakamura, the collective authors of the “Feminist Data Manifest-No” assert, such projects “commit to taking back control over the ways we behave, love, and engage with data and its technologies” (n.d).¹ Yet, as Eve Tuck and Wayne Yang remind us, these projects are messy and involve “strategic and contingent collaborations” rather than lasting and simplifying solidarities (Tuck & Yang, 2012, 28; Garba & Sorentino, 2020). Whose vision of decoloniality matters when describing the potentialities and limits of these developments (Lyons et al., 2017; Raval, 2019)? In thinking through computing in/from the South, our analysis is best served by engaging these messy, entangled, and ephemeral collaborations

that comprise a poetics of relation. The contributions in this volume not only manifest this commitment but put it to work analytically.

In keeping with the need to think along historical, epistemological, political, and poetic dimensions of our cases, "Computing in/from the South" is a guide to technical projects where ethics, materiality, and design sensibilities meet. This scaffolding challenges both soft and hard coded assumptions about how computing infrastructures should work, whose labor produces them, how values such as privacy should be encoded in these technologies, and how a collective and singular technological users should be imagined and empowered through computing technologies (Ahmed et al., 2017; Kumar, 2014; Prasad, 2014).

The global feminist technoscientific approach taken in this section tunes in to the complicated technical landscapes of computing cultures in the South, and follows the hidden histories and manifold futures that play out and remake this terrain. As we attend to the unexpected, the counter, and the silenced, we privilege not only what is aspired to but what is prefigured within and through alternative computing practices. We look to what "upstart knowledge communities" can teach us about power dynamics as they work to center ways of doing computing otherwise (Jasanoff, 2004, p. 36). In doing so, we tease out computing practices that move between and beyond the poles of techno-deficiency and techno-resistance too often ascribed to the South as a geographic location. Approaching the South relationally requires attending to not only computing practices embodying "diverse experiences of subjugation," complex desires, and power relationships within the South, but also attempts by national and transnational actors to "configure (profitable) essential difference" (Philip & Irani, 2018, 2). These modes of appropriating difference for profit contend with queer, feminist, and Indigenous confiscations of computing technologies as means of releasing their technopolitical potentialities toward different ends (Haraway, 1992 & 1991; Keeling, 2014; McGlotten, 2014). We draw inspiration from these later appropriations, without expecting them to be pure, perfect, or accord with one another.

"Computing in" is distinct from, but related to "computing from" the South. While both find points of articulation in distinct computing histories, they productively dispute one another in this volume. Computing *in* the South situates digital infrastructures by following ethnographically (on the ground) how they build on and help build kinds of politics, epistemologies, and assumptions about the nature

of things (Barad, 2007; Harding 1991). Computing *from* the South, on the other hand, opens up the material, immaterial, social, and political aspects of computing to alternative forms of life and future realities (Comaroff & Comaroff, 2012; Mbembe, 2012). The “/” [forward slash] operates a relational analytics attuned to the constitutive tensions that mark computing as, at once, multiply located and located against its multiple others (Amrute, 2019, 2020). The “/” operator helps us identify processes where peripheral places are made generative for computing, and where they provide counter-conducts for digital practices. In this way, the operator encompasses the indexing and ordering functions created by existing hierarchies among places, people, things, and forms of knowledge but also recognizes the slips, sources of ambiguity, and tensions in computing projects (Murillo, 2012, 2020). We use the forward slash to toggle intentionally across hierarchy and order/slips and alternatives. The toggle signals the need for new approaches to computing that continues to take advantage of these switches. Though we cannot expand on this language fully here, the convergent histories of queer open-ended naming practices in the + and the wildcard function of the * suggest further possibilities for developing such languages.²

Contributions to This Special Section

The authors of this special section deploy feminist, queer, decolonial, and postcolonial theories to move beyond center-periphery binaries. Each essay articulates the “complex engagements and desires” that unfold through data-work (Sen, 2017, p. 20). Thinking in and from the South exemplifies in each of these contributions how computing sites relate to one another within and alongside present monopolistic data-driven obsessions.

When Erin McElroy takes us in their essay through the history of computing in Romania, they simultaneously create a new origin story for hacking as queering and displace the very misconception of hacking as a dangerous Eastern European practice. In “Corrupting Techno-normativity in Postsocialist Romania,” McElroy helps us build a shared analytic in their examination of the role of Silicon Valley in shaping spatial, technical, and politico-economic landscapes in Romania. Counter to common narratives on “outsourcing” locations, McElroy calls our attention to *șmecherie*—a Romanian analog to the Euro-American *hacking*—as a queer practice to counter the normative aspirations of transforming Cluj into the “Silicon Valley of Eastern Europe.” Queering here is not a simple identitarian code or sexuality descriptive, but is rather a field of inquiry and set of interpretative

strategies to “pervert (and perhaps help decolonize) postsocialist Siliconization through practices of cloning, play, and kinship” (McElroy, p.5). Drawing from contemporary postcolonial reflections, McElroy identifies the pernicious effects of the “denial of coevalness” (Fabian, 2002, p. 31) to Romanian computer experts who are identified as by-products of a corrupt socialist past and as aberrant cybercriminal marring technomodernity. It is by queering the technopolitical histories of socialist and postsocialist eras in the present that computer *șmecherie* constitutes an instance of computing from the South. McElroy answers a fundamental question for the project of computing from the European “South:”: Is there another techno-utopic vision working in the wires, hacking the common-time of postsocialism?

When Héctor Beltrán’s describes a hackathon designed for women and girls in Mexico, he shows how the Latinx diaspora moves across and between the United States and Mexico, knitting North and South together across paradigms of technical capacity, notions of gender, and Southern ingenuity. As Beltrán reminds us, these relations both enable and foreclose the transformative potential of what he calls the “stack”—where layers of infrastructure, code, interface, and ideology make up computing as a sociopolitical project for the country. In “The First Latina Hackathon: Recoding Infrastructures from Mexico,” the “hackathon” is described as a space in tension between *computing in* Mexico with developmentalist governmental perspectives and *computing from* the perspective of Mexican youth creating local alternatives against the odds of precarity. His ethnographic work responds to another fundamental question posed in this special section: How do models of technical expertise (from the North) become tied to state practices and national imaginaries (in the South)? And, as equally important, how do emergent political forms accommodate both market logics of competitiveness, agility, autonomy, and risk alongside critical, decolonizing dispositions? What is particularly salient in Beltrán’s analysis is how gender, national, and racial differences are mobilized and tactically negotiated to create spaces for the participation of women. Here we encounter the answer to the question of who gets to participate in this emergent “hacker scene,” accessing distinctions that are more than markers of differential technical competence (“chingón,” “newbie,” “hacker,” etc.) and refracting social distances and class belonging (Beltrán, 2020). Despite the efforts for carving out a space for being together as women-identified

technologists, the specter of Silicon Valley looms large in the backdrop of the ethnographic scene of the hackathon.

In her contribution to this collection, Angela Okune demonstrates that paying attention to data-driven desires through a reflection on her own position as an ethnographer of an over-studied Kenyan community can foreground values that every act of design integrates to lesser or greater extent. Every design draws from, but also animates an ontology. Digital design partakes in what Arturo Escobar (2018) calls “ontological design” as a form of world-making. This does not mean that there is an essential “Kenyan” way of modeling data sets and designing interfaces. Instead, this ontology arises from the co-production of model, modeler, and community. In her article “Open Ethnographic Archiving as Feminist, Decolonizing Practice,” Okune offers an alternative for honoring ties between researchers and researched communities through common protocols for crafting and sharing digital infrastructures and data. Her call for open archival practices helps us identify what, in the framing of digital practices as “design practices,” is effectively open for the project of computing from and of the South. From a decolonial and feminist perspective, she suggests that open archival work is one of the means for identifying what is rendered invisible, under- or de-valued in practices of digital design. The separation between designer and community is not problematic *per se*, but this separation has long-lasting effects of erasure for those who are the “over-researched” and also for those who provided the technical work for the research infrastructure. In this debate, Okune’s work is well positioned to animate alternatives to hegemonic practices in which digital design lends itself too easily to the colonization of other forms of life. Collaborative ethnography figures here as a counter-practice to widespread tendencies of data extraction from “target populations” in Africa and elsewhere. This process involves the mobilization of different logics for the design and implementation of digital platforms for collaborative research which, in the case of the platform Okune employs to infrastructure the archival practices of her collaborators, is, in turn, infrastructured by the work of Brazilian developers who provided the work to co-create the platform; and whose work is infrastructured, in turn, by a distributed community of free software developers working on a common web development framework (many of whom work from the South in small firms). The “/” operator is useful here as a delimiter to resurface colonial and postcolonial relationships at such sites of innovation as Nairobi as it takes on the mantle of being part of

Africa's "Silicon Savannah." These relationships move recursively across many types of infrastructural labor in distant geographic locations.

In their essay, Natacha Roussel and Ariane Stolfi use the generative language of "singular technologies"—technologies that are created often by using parts from existing projects but with different ontological blueprints—to enable alternative networks that meet the needs of Black and Indigenous communities in Brazil. Roussel and Stolfi point out that for these systems to come into being, they need to be conceptualized through a poetic language that emphasizes flat structures, recycling technologies, and the branching shape of the Baobab tree from locations of Quilombolas settlements, carrying into the present long-standing forms of resistance to produce alternative, community-based networks. In their essay we find "*software livre*" ["free software" in Brasil] as an unrecognizable quasi-object with serious implications for a renewed project of sovereign computing in the South (Murillo, 2010; Garcia dos Santos & Caminati, 2014). Here the authors trace repurposed methods of connecting across rather than from the top-down in the technosciences. They suggest that concepts, such *xaminismo* and the *Baobaxia*, become resources for communities to imagine their relationship to digital networks. These methods provide the alternative framing to imagine computing that is focused around a "we" that is open to challenge from below. Drawing on the work of Karen Barad, Roussel and Stolfi show that their cases represent sites of profound transformation, where intra-activity is not only recognized, but aspired to and prized. While it is an open question how these developments will survive with the current authoritarian regime in Brazil, what they describe provides a vantage onto technical practices that resist colonization by Silicon Valley tools and logics. In their definition, "singular technologies" actualize political memories and struggles of "*comunidades remanescentes de Quilombos*" (insurgent communities of formerly enslaved African peoples) with the practice of "software freedom" (well removed, we must say, from liberal understandings of both "software development" and "freedom" in this particular context).

Our section also includes shorter essays that similarly decenter deep-seated assumptions about computing outside Western Europe and the United States. Angela Wu examines the politically charged business of large-scale "social media mining" in China. In her essay, "Chinese Computing and Computing China as

Global Knowledge Production”, Wu reads the case of Big Data for monitoring and evaluation of social media mobilizations after Dr. Li Wenliang’s tragic death due to COVID-19. Her analysis resituates Chinese computing within Euro-American circuits of academic power on the one hand, and within the story of the Chinese people whose data is used in building portable social surveillance models on the other. Wu argues that online surveillance constitutes a much broader transnational assemblage where computing mediates ties between commercial, academic, and political entities. Surveillance maintains internal political stability in China, even while Western academic political-economic circuits supercharge these pervasive data collection practices. Taking up the analysis of transnational circuits, Hemangini Gupta offers a satirical manual on how to build a “postcolonial” robot, based on her fieldwork research with technologists in Bangalore. Gupta’s “Postcolonial Assembly Protocols for Unnamed and Undefined Automation Projects” is an annotated keywords index for coming to terms with heteronormative templates that are global and nativist in equal measure, even while their attraction stems from the plastic capacity of local forms to be molded to fit a standard average American audience. In the final contribution to this section, Luis Felipe R. Murillo shares with us a cartoon and an essay pondering the infrastructures, invisibilities, and the moralities assembled along the computing supply chain. Murillo’s “Moral Circuits” investigates the material conditions and moral dispositions that make up collaborative work in spaces where computing embodies alternative technopolitics. Describing his ethnographic experience prototyping a device for transcribing interviews gives Murillo the opportunity to unpack how technologies come into being, and in doing so, how collaborative practices shape and take shape in sociotechnical assemblages across unequal spaces/places.

Taken together, these short pieces telegraph the multiple fields computing from the South addresses, recognizing a need to approach these fields through creative work that experiments with modes of expression beyond the academic article. Switches in hierarchies of command and control open pathways for alternative computing worlds in relation across Southern geographies. We find resonance here across these projects and contexts from the South as they move to decenter debates on digital design, development, piracy, and the refracted relations of gender, power, and layered (post)colonial expropriation that illuminate these worlds.

Conclusion

As exemplified by the contributions to this special section, the “/” operator highlights the interdependencies, ambiguities, and potentialities between technopolitical locations, as well as between the South that the North increasingly contains. Southern histories, bodies, and practices drive forward developments in computing usually taken as emanating from the North, both in computing’s adverse effects and the multiple solutions these developments enunciate. Overworked and invisible labor, sources of raw material extraction for integrated circuits and electronics components, and, increasingly, sources of “creativity” that the North seems to be hungry for concern all of our authors. What brings us together in this issue is the task of unearthing political histories of computing. These histories help expose the current state of the field with its multiple instantiations. If the state of computing today is, overall, monopolistic, pervasive, and surveilled, then it is so because these monopolies arise globally and infrastructurally; they are both sustained and battled along multilayered political configurations. Importantly, the frame of the South as we elaborate it in this volume is not monolithic and binary, but relational. Working across Southern locations is a means for elaborating on a shared analytic and strategy for combating these developments in big and pervasive computing that are misleadingly identified as “data-driven,” as they involve infrastructural control and unchecked political influence at multiple levels and domains of expert knowledge. As we demonstrate through the feminist scholarship we engage, there are no dearth of examples of the hidden labor of computing worlds—grouped under the heading of “outsourcing,” which entails sending less lucrative, less interesting, and more dangerous jobs overseas to peripheral communities as clickwork that populates the content of digital platforms (Amrute, 2016; Biao, 2007; Gray & Suri, 2019; Ekbia & Nardi, 2017; Roberts, 2019). Many of these same geographies are also subject to the utopian projects of elite philanthropy even while they may harbor political computing projects that refuse both labor exploitation and prefabricated technologies for (their own) good.

Future iterations of our shared framework should branch out from the question of computing *in* and *from* the South to computing *of* the South, pointing to the urgent realization of “technological autonomy” and “data sovereignty” projects within the shared horizon of all the contributions to this volume. As digital

surveillance systems expand in their deployments in the context of public health initiatives, deemed as “inevitable” responses to the COVID-19 pandemic, initiatives such as the Google and Apple contact tracing framework and the social registry project, coupled with CCTV and drone surveillance to enforce pandemic curfews and mask wearing in India and elsewhere, should give us pause. There are as many ways to entrench existing power relations in the South as there are tech ideas for how to solve the South’s problems. As corporate platforms are disseminated worldwide, the logic of unchecked, large-scale data extraction persists alongside the logic of workforce development disguised as benevolence for the South’s poor and minoritized populations (Sarkar, 2016). Donald Knuth, one of the most celebrated figures in computer science, recently voiced concern about his discipline in an interview: “It started out that computer scientists were worried nobody was listening to us. Now I’m worried that too many people are listening” (Roberts, 2018; Benjamin, 2019). Knuth’s worry stems from the examples, too numerous to count, of algorithms that have led institutions to make bad, discriminatory, rights-eroding decisions both because they have been designed from the point of view of a slim minority, and because the training data they have used itself have been generated from deeply racist and sexist systems (Barocas and Selbst, 2016; Buolamwini & Gebru 2018; Hicks, 2018, Noble 2018). While Knuth’s statement turns the mirror to reflect the authority that computer science has in the production of contemporary systems of knowledge, it also raises questions about the relations of power within computing for data collection, prediction, and classification. Whose tools are being designed and deployed for listening? Whose computing is listened to? Who is doing the listening and on whose behalf?

The articles and critical commentaries that comprise this special section traverse the past/present/future of computing in a moment in which all our presents are collapsing in the isolation of lockdown, but also in the formation of new kinds of mutual aid alongside a perverse revalorization of mass surveillance in public debates. As Silvia Rivera Cusicanqui describes with a powerful metaphor, “ideas run, like rivers from the South to the North and are transformed into tributaries” (2012, p. 104) that neutralize their power to transform social, political, and economic relations. In this volume, we set out to collaboratively build the metaphorical dams in imperial relations of tribute by staying close to the ground conditions of computing *in* and *from* the South. Akin to the process of cultivation

of subjectivity as a “house of difference” (Lorde, 1982), building computing otherwise asks us to heed difference as defined from the inside, across the multiple contradictions, relationalities, and incommensurabilities among projects, notions of personhood, moral orientations, and desires. Each project shows how perspectives from the South both accommodate and revise masculine technological performances that populate even alternative computing spaces (Chan, 2014; Coleman & Dunbar-Hester, 2016; Dunbar-Hester, 2008; Murillo, 2019; Nafus, 2012; Reagle, 2012). Finally, each project “recovers the principles of living” through computing otherwise that are bracketed out through computing’s historical development (Mohamed et al., 2020, 18).

The contributions we offer in this special section also point to something particularly important for the present and future of feminist technoscience: the capacity to articulate broader and deeper networks of solidarity for collaborative inquiry in STS. In quite distinctive ways, each contributor to this volume has practiced collaborative work, thus grounding our method with an analytic that intersects with the theoretical development of feminist technoscientific reflections on digital technologies. We hope this volume will serve as a small contribution to and token of recognition for feminist STS past, present, and futures to the study and realization of alternative computing worlds. We also hope our contributions will help find generative commonalities in the space of differences, identifying them as potentiality for the collective work we must engage within and beyond academia to realize alternative technopolitical futures. The current state of computing as a field, industry, and technical discipline needs these exercises in relational thinking to move from a utilitarian, solution-driven practice to a socially entangled, committed, and joyful one.

Notes

¹ See also the work of the collective behind the online resource “Decolonising Design” (2016) at <https://www.decolonisingdesign.com>.

² Shaka McGlotten and Patrick Davison, private correspondence.

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