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Introduction

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The digital age represents an epochal shift in the operation of global capitalism. This volume seeks to place the current transition, called the "fourth industrial revolution" by some, in its historical context, as the latest in the series of epochal changes experienced by the world system over the last several hundred years. Each such transition provokes crises at the national and international levels, presenting both complicated and opportune moments to engage. The full implications of the current shift remain only partially visible, and social understanding, especially at the popular level and in the Global South, is not widespread though widely felt. Still, if popular sectors and developing countries do not actively struggle to define the terms of the digital transition, we will miss the opportunity to turn toward noncapitalist, deeply democratic, anti-imperial, socially inclusive, and ecologically sustainable forms of modernity. Such a future could be defined in this moment, and the first steps are to understand the current epochal shift, imagine utopian futures, and seek to build them.

This volume emerges from a series of lectures and seminars sponsored by the Instituto Lula in São Paulo from February to April 2022.[1] The series bore the title, "Popular Sovereignty in a Digital Age," and most of the contributors to this volume participated directly in the lectures and seminars.[2] It is worth reflecting on why a think tank bearing the name of the Brazilian president from 2003 to 2010 and candidate and eventual

winner of the 2022 presidential election would be interested in the digital transition. As is well known, Luiz Inácio "Lula" da Silva was a shoeshine boy turned factory worker and labor leader who came to prominence in the Brazilian struggle for democracy of the 1970s and 1980s. He went on to lead the Workers' Party in opposition to neoliberal adjustment in the 1990s, won the presidency in 2002, and became a central figure in the Pink Wave of leftist governments coming to power across Latin America. He left power in January 2011 after two terms as the most popular president in the history of Brazil and became a global reference for critical, southern leadership at the international level.[3] After being blocked from the presidency in 2018 by trumped-up corruption charges to open the path for extreme-Right president Jair Bolsonaro (Arcary 2021), he returned to the presidency atop a campaign to restore democracy and development to Brazil.

The Instituto Lula sponsored the Popular Sovereignty in a Digital Age series in the first months of 2022, coinciding with the start of Lula's presidential campaign. The series targeted Workers' Party activists, students, scholars, and community activists eager to engage the topic. The course has to be understood as a platform to cultivate alternative visions at a critical moment in Brazilian politics and history. Lula's campaign sought to raise the level of debate, overcoming the simple arguments of Bolsonaro and the extreme Right, and approach global capitalist transition in terms of a modernity that is more democratic, more just, more ecologically balanced, and more inclusive of diverse identities and cultures.

The Digital Age

Digital technology has become central to the current manifestations of capitalism, altering the ways we work, consume, socialize, and communicate. It is also making incursions into the way we do politics. The rise of digital technology was driven at first by the search for new sources of accumulation after the collapse of the 2008–2009 financial crisis, buoyed by liquidity that central banks pumped into the international economy through quantitative easing and other policies. The onset of the COVID-19 pandemic only exaggerated the centrality of digital technologies, padding the profits of the biggest high-tech corporations and their owners even as millions were turned out of work, left their jobs, and suffered ill health from an ongoing health calamity (Varoufakis 2021). Such absurd wealth

generated and accumulated in the midst of a global pandemic highlights crises of inequality brewing in economic, political, geopolitical, cultural, and ecological realms.

To resolve these crises, great powers and dominant corporations are attempting to set the rules for the oncoming digital age in ways that worsen inequality, undermine democracy, reassert international hierarchies, exclude large populations, and push the environment to its brink. Yet the future has not yet been written, and there is still time to articulate an alternative. This book takes a critical, historical view of the digital transition, placing digitalization in the context of historic transitions of capitalism, opening the debate on how traditionally exploited sectors, labor and the Global South, can define the digital age. To advance an alternative agenda, popular sectors must understand and be able to act, and developing countries must be able to assert sovereignty over their future. Before outlining the strategies of labor and the Global South, it is worthwhile to consider the other ways in which digitalization has been approximated to date.[4]

Most developed are important perspectives on the social impacts of digitalization, technical and technological aspects of digitalization, digitalization as a media and communications transformation, digitalization and its sociopolitical and economic impacts, digitalization and its impact on business, and digitalization in developed economies. With a focus on labor and the Global South, this volume fills a critical niche.

Some of the earliest observations coincided with the introduction of the internet in the 1990s, placing digitalization in the context of globalization, defining both in terms of increased social connections across distance. Manuel Castells described the "Network Society" (Castells 2015); others labeled it "the participatory condition" (Barney et al. 2016), "connectivity culture" (Van Dijck 2013), and "superconnectivity" (Chayko 2017). Contributions like these emphasized the communication and connections facilitated by new technologies, with implications for the fundamental relations among people, within groups, between individuals and firms, between state and society, and between humans and machines (González-Bailón 2017; Graham and Dutton 2014; Lindgren 2017). The most important aspect of these contributions was the focus on relations—the way in which quantitatively more connections of a qualitatively different type produced emergent outcomes (Graham and Dutton 2014).

Making sense of these connections required attention to core infrastructures, including technical details, perhaps appropriate to a field in

which technological change lies at the heart (Athique 2013). This focus emphasized the infrastructure on which digitalization was built, emphasizing especially how quickly digital infrastructure continues to evolve, citing 3D printing (Hanna 2016), sensors and tracking (Dourish and Bell 2011), the internet of things (Bunz and Meikle 2017), cloud computing (Hu 2015), robotics (Ford 2015; Mosco 2017; Turkle 2011), and the algorithms driving platforms (Srnicek 2016; Cheney-Lippold 2017; Turow 2017). Various engineering "laws" describe the rapidity of change: Moore's law suggests that the processing capacity of computer chips doubles every eighteen months; Butter's law suggests that network communication speed doubles every nine months; Nielson's law suggests that connection speeds for home users double every twenty-one months; Kryder's law suggests that storage capacity doubles every thirteen months.[5]

A related approach emphasized digitalization as a media field, highlighting the interaction between social processes and the media through which they are filtered (Beyes, Leeker, and Schipper 2017; Dourish and Bell 2011). Changes to the media through which we interact create their own incentives, constraints, and possibilities, altering identity, group formation and behavior, socialization, and culture (Bauerlein 2011; Bennett, Chin, and Jones 2015; Berry 2015). For some, the ubiquity of online connections turned them invisible or habitual, masking their massive social impacts (Chun 2017). As Turkle (2011, 243) notes, "Facebook looks like 'home,' but you know that it puts you in a public square with a surveillance camera turned on."

At the core of digitalization is data, and increasing attention has been paid to the quantity, collection, storage, analysis, and power of big data (González-Bailón 2017; Graham and Dutton 2014; Lupton 2016; Rudder 2014). Innovations such as the internet of things and robotics incorporate sensors into everyday appliances, transportation, entertainment, workplaces, and accessories, turning virtually everything into a data-generation and capturing device. This multiplication of content creates endless possibilities for participation and collaboration but also leads to concerns about anonymity, privacy, surveillance, and control (Graham and Dutton 2014; Zuboff 2019; Barney et al. 2016; Bunz and Meikle 2017).

The ubiquity of data raises various questions about the relation between humans and machines (Latour 2004). The possibility of mining data with algorithms and artificial intelligence and the ubiquity of robotics places an additional distance between the ethics of society and the possibilities of science, conjuring science fiction cyborg fears

as old as science itself (Beyes, Leeker, and Schipper 2017; Kember and Zylinska 2012; Mosco 2017). This has forced a rethinking of individual identity issues such as the changes involved in childhood (Turkle 2011), adolescence (James 2014), and emotional development (Kvedar, Colman, and Cella 2017). To manage these relations, guidelines have emerged on how to limit dependence on technology (Levy 2016), take advantage of technology (Rheingold 2012), evaluate our information "diet" (Johnson 2015), protect children (Steiner-Adair and Barker 2013), curate our online identities (White 2014; Cheney-Lippold 2017; Lindgren 2017), and protect ourselves (Schneier 2015).

The identities conjured by digitalization extend to groups, shaping and perhaps distorting the ways in which collective identities operate. While online contacts make connections quicker and easier, they also create an "illusion of intimacy" that masks distance and even prevents deeper solidarities (Turkle 2011). The nuances to collective identities are especially worrisome as there are explicit and implicit biases encoded in new technologies. This starts with the "digital divide" in terms of inequalities of access and use patterns (Graham 2014) and extends to racialized patterns of discrimination through biases built into algorithms, economic interests, and monopolistic platforms and media (Eubanks 2018).

A number of analyses focus on the ways digital technologies exacerbate existing social exclusions (Helsper 2012; Yates, Kirby, and Lockley 2015; Yates and Lockley 2018). By contrast, optimistic views celebrate the possibilities of digital activism and collective action impossible before online connections and the potential to evade official monitoring (Dey 2018; Fotopoulou 2017; Gordon and Mihailidis 2016). In part, judgments about the opportunities and pitfalls depend on understandings of "digital capital" and how it interacts with other forms of material and social capital (Ignatow and Robinson 2017; Gladkova and Ragnedda 2017; Ragnedda 2018; Ragnedda and Ruiu 2017).

These various observations motivate public policy attention, with increased information and connection offering presumed benefits for civic engagement (Gordon and Mihailidis 2016). Still, significant debate surrounds issues of regulation and legal frameworks, as technological change races ahead of the capacity of states to keep up (Graham and Dutton 2014). This extends to debates on whether local, national, or international bodies should regulate digitalization (Mueller 2010), questions of public or private provision (Hanna 2016), and regulations to protect privacy and govern access to data (Sonnier 2017), directing attention to possibilities

of abuse and questions of cybersecurity (Goodman 2015). While much is made of the green advantages of digital activity, there is increasing attention to the need for environmental policies related to the massive energy requirements of cloud computing and the toxic impacts of the materials mined to build and operate, and later be discarded by, digital networks (Cubitt 2016; Hu 2015; Mosco 2017). Environmental regulation has become even more pressing as we become aware of the differential impacts of digitalization on the ecosystems of developing and developed societies (Chan, Selden, and Ngai 2020).

Some work on collective identities has extended to the workplace, considering the ways in which digitalization has altered business organization. Frameworks to understand accumulation and surplus capture through digitalization include "value co-creation with consumers" (Gauthier, Bastianutti, and Haggege 2018; Hasselblatt et al. 2018; Rachinger et al. 2018); transition theory (Gorissen, Vrancken, and Manshoven 2016; Parida et al. 2015); platform theory (Cenamor, Sjodin, and Parida 2017; Eloranta and Turunen 2016); and a focus on entrepreneurs and entrepreneurship (Ehret and Wirtz 2017; Krotov 2017).

These analyses of production extend also to questions of work and the working class (Huws 2014). Many note that digitalization makes possible new business models and industries, such as through crowdsourcing (Bennett, Chin, and Jones 2015), the "gig" economy (Daley 2015), and commodifying daily activities mediated through data (Wu 2017), as well as fragmenting workplaces to be more dispersed and networked (Graham and Dutton 2014). The very separation between work and nonwork has blurred (Alter 2017; Schwab 2016), and there is increasing awareness and worry about the loss of jobs from labor-saving technology (Acemoglu and Restrepo 2019; Benavov 2019; Ford 2015; Tapscott and Tapscott 2018).

Macro-social analysis of digitalization has considered the institutional architecture in which digital innovations occur (Holmes et al. 2016), as well the timing of economic cycles and technological innovation (Mansfield 1983). Others note the particular ways in which producers in developing countries fit within global value chains (Luo, Sun, and Wang 2011; Buckley and Strange 2015), as well as the difficulty of catching up to the "world technology frontier" (Caselli and Coleman 2000). Some have identified opportunities for leapfrogging, using information and communication technology for development (Heeks 2017; Walsham 2017), while others emphasize global digital divides of various dimensions (Ragnedda 2017;

Van Dijk 2005), requiring policies for digital inclusion (Goraya, Light, and Yates 2012; Yates, Kirby, and Lockley 2015).

This book builds on these prior contributions by focusing on the form taken by the output of infinite digital relationships—data (Fuchs and Mosco 2016). As a commodity, data presents boundless potential, in part because it is nonrivalrous (it does not deplete as it is used), but it can be privatized (UNCTAD 2019). In this condition, the potential to generate surplus is practically boundless, giving great advantage to firms that can ring-fence the generation, storage, analysis, and commodification of data. This advantage is of central concern in the current volume for the power it gives capital over labor and the control it gives monopoly firms backed by great powers over developing countries. In the face of digitalization, the current volume asks two basic questions: (1) How can working classes and popular sectors claim a share of the immense surplus created by digitalization and a degree of dignity and control over their lives? (2) How can developing countries access the power and wealth generated by advanced technologies without deepening their dependence on monopolistic firms based largely in the Global North?

Popular Sovereignty in a Digital Age

For lower classes to participate in the terms of the digital age, setting limits on exploitation and securing a livable future for them and the planet, they must organize and struggle. Yet digital capitalism changes who is a worker and what is their relation to the production process, even as alienation continues, in the Marxian sense of being alienated from the product of their labor (Lohman 2021).

One view of the digital age lower class comes from Michael Hardt and Antonio Negri—a "multitude"—a relatively undifferentiated mass in terms of their relation to capital and exploitation (Hardt and Negri 2004). Indeed, one can observe a division of the 1 percent who own platforms, capturing surplus from everyone else, evident in the incredible wealth accumulating in the hands of the very few and rising inequality across the globe. Yet these inequities do not yet organize the 99 percent as a class, nor does it identify the relationship of workers to the production process in a systematic way. Even worse, inside the 99 percent various divisions are enhanced, created, and exploited by digitalization, opening

space for antipopular and antiworker feelings and practices even among classes that do not own the means of production.

One complication of class in a digital age is the blurring of boundaries. Between the proletariat and the reserve army of unemployed labor, some have identified the precariat, who are harder to organize and in a more tenuous relation to capital (Standing 2011). Additional blurring occurs between work and nonwork, as digital platforms make use of data from leisure time in "playbor" (Kücklich 2005), "microlabor" in the form of "crowd-work" and "crowd-sourcing" (Kittur et al. 2013) breaking work into miniscule per-click tasks, and data from consumption in "prosumption" (Fuchs 2010). One of the more striking innovations of digitalization is precisely this trick, incorporating into the production process the data generated from the unpaid but productive "free labor" of people spending time online (Terranova 2000). In the process of consuming, traveling, using social media, registering for government programs, learning, staying healthy, and simply living, people perform "biolabor" that generates data, and opportunities for profit, for capital to accumulate surplus (Morini and Fumagilli 2010).

Ursula Huws (2014, 154) understands this category of "free labor" in the context of a categorization according to two dimensions, productive/reproductive and paid/unpaid labor. Free labor includes other kinds of unpaid and productive work, sometimes called "co-creation," in which users insert their own data into algorithms for what might have otherwise been work done by a paid service worker—for example, a travel agent or taxi dispatch (Prahalad and Ramaswamy 2000).

Still, work in a digital age poses the labor-capital antagonism just as starkly as ever, as long as we know where to look. Work that is paid and directly productive for individual firms in commodity production was assumed by Karl Marx and others to be the dominant and inevitable form of labor under capitalism (Huws 2014, 154). Many workers remain in this relation to capital, but the characteristic smokescreen of the digital age is to make such work invisible—extracting minerals from distant sources, assembling devices in dispersed factories, providing back-office and customer services in offshore call centers, using armies of workers to turn online content into data on a per click basis, hiding warehouses in rural areas, and delivering products with gig-worker contractors covering the last mile. Often the workers who fulfil these roles are women, people of color, and in developing countries, making it that much easier to invisibilize their work (Di'Ignazio and Klein 2020). To make it visible once again will require particular attention to the workers of the Global South as well as the traditionally excluded groups of the Global North.

Other workers are paid and perform tasks essential to the reproduction of labor. They make possible the survival of workers, and therefore capitalism, even if they are not directly in the act of producing commodities. State workers, teachers, and providers of social programs continue their reproductive labor, and the most significant impact of digitalization is to subcontract much of this work, as private providers of data analysis insert themselves in reproductive work in part to capture the data of beneficiaries and in part because they can use digitalization to target benefits, making a more efficient, leaner, but often meaner, welfare state (Alston 2019).

Neoliberal cutbacks also shift paid reproductive work into unpaid reproductive work, forcing families and communities to undertake the work necessary to reproduce themselves. Feminist economics has long emphasized the oft ignored unpaid reproductive labor of household maintenance, childcare, and many other activities essential to worker subsistence but often relegated to excluded groups, especially women, and kept out of the market (Federici 1975; Davis 1983). Digitalization, coming as it does in the aftermath of neoliberalism, shifts many of these activities back into the market, creating a "sharing economy" for what might have previously been the affective work of driving a friend to the airport (Uber.com), offering a couch to sleep on (Airbnb.com), or courting and dating (Match.com). In the process, we once again see the increasing antagonism of capital and labor.

While the status of work under digitalization might seem blurrier, it continues to depend on social relations of coerced laborers under the control of capitalists and dependent on a wage for subsistence. This places labor in direct antagonism to capital, and it is precisely at those points in the production and distribution process where labor and capital dispute over the distribution of the surplus where labor can remove its consent and engage in struggle. Most people occupy several of these paid and unpaid, productive and reproductive forms of labor during the course of their lives, sometimes in a single day. All people live with or depend on others in each of the categories. It is by building understanding of these categories and solidarities across them that a working class in a digital age can take shape.

Global South in a Digital Age

In addition to organizing from below, popular sovereignty in a digital age will also require agency from the Global South. The Global South can be defined not solely in geographic terms, and begins with the bloc

of previously colonized, poorer, and mostly nonwhite countries of the world (Prashad 2008). They are often relegated to the most exploitative and environmentally destructive activities within globalized production, and they have been too frequently subject to intervention and imposition by stronger powers.

Further, attention to the Global South also includes the economically marginalized, especially highlighting the work of groups traditionally overlooked—the too-invisible work of women; the toil of peasants, farmworkers, and small farmers; and the hyperexploitation of those such as mineworkers, factory assemblers, app drivers, and informal sector hawkers whose precarity keeps goods and services cheap. Many of these groups are found in what is geographically the Global South, but even in what are understood to be northern, developed countries, large numbers of people find themselves economically marginalized. Yet, even in the Global North, the economically marginalized disproportionately overrepresent immigrants and those who have descended from populations drawn from the Global South, including those who were forcibly moved during the long period of slavery operating in the Americas.

Finally, any discussion of overlooked populations must also address populations minoritized on the basis of race, gender, religion, ethnicity, sexuality, immigration status, caste, and class. Their exclusion narrows citizenship, circumscribes rights, and chips away at democracy. The boundaries of those who are excluded vary by context and can change over time, often on the basis of socially constructed understandings of ascriptive difference (Ignatiev 1995). As in the case of economic marginalization, markers and attachments to the Global South, including immigration and forced migration, bear legacies of exclusion in the contemporary Global North.

These patterns of difference are central to the chapters that follow not only because of the stark inequalities they capture but also because digitalization threatens to exacerbate exclusions and divisions between Global North and Global South. In particular, because most new technologies are developed in the Global North and treat the Global South as a market, reserve of cheap labor, and source of raw data, the distribution of benefits and control of future trajectories is lopsided. While new technologies lower transaction costs and open new avenues of communication and exchange, they also close spaces by raising entry barriers and blocking innovation or competition. Digital technologies can increase the opportunities and the intensity of effective participation in the democratic sphere, but some

states and corporations choose instead to use digital technology to defend authoritarian arrangements. For states in the Global North, digitalization offers the opportunity to fine-tune public policy, protect their populations, and project authority beyond their borders. Developing country states, as recipients of new technologies with little capacity to generate their own, are more likely to experience technologies as predation, surveillance, and penetration into their sovereign territory.

Digital capitalism asymmetrically concentrates power in the hands of a few firms and a few states, mostly in the Global North. While digitalization can enhance popular sovereignty, it requires transforming traditional notions of sovereignty to empower workers and improve the human condition, especially in the Global South.

Central Argument

Among the central arguments of this book is that an alternative future is more likely to the degree that popular sectors in general, and from the Global South in particular, are more organized, enjoy greater formal mechanisms of incorporation into political processes, and can force a multipolar set of international relationships to govern the digital age.

Deeply democratic governance of the digital age is impossible without the leadership of popular sectors. If elite actors believe that capital accumulation can occur more efficiently, they will operate outside democratic processes, will avoid distribution to other classes, and will concentrate wealth and power in the Big Tech powerhouses of the Global North. To achieve popular sovereignty, only mobilizations of working classes, peasants, social movements, and other traditionally excluded groups can build organizational and political power. In particular, excluded groups from the Global South have a role to play, as they are most likely to be left behind and they are the most likely to defend equitable, democratic, multipolar, and sustainable outcomes.

At least in part, expressing the power of popular sectors requires a mechanism to carry them into state institutions, and Left parties have proven to be the most effective at capturing power and channeling popular interests. Where strong Left parties mobilize popular sectors and organize their interests into the national state, popular sovereignty over the digital age is more likely. Contemporary elections in a number of Latin American countries have brought Left governments to power, providing

an opportunity to establish a project for a deeply democratic, sovereign, socially inclusive, and ecologically sustainable digital age.

Yet digitalization will also require collective international action and governance, as the power of tech companies and the scope of managing data and digital technologies now lies beyond any one set of national borders. While great powers appear willing to preserve a liberalized regime in which their companies dominate, even over the interests of wealthy country governments, collective governance among multiple poles of the international order, especially those led by lower-class, Left projects, will allow for greater popular sovereignty. To advance a (1) popular and (2) sovereign project in a digital age, critical issues of class and developing country sovereignty must be reconsidered.

Structure of the Book

This book makes the argument that entering a new phase of global capitalism defined by digitalization calls once again and more than ever for a popular and sovereign alternative. Megacorporations based in the Global North have every facility to structure productive activities in their interest, capturing the lion's share of the surplus, destroying the planet, and leaving little for working classes and the Global South. To articulate a popular, sovereign project for the digital age, this introduction highlights the concepts at the heart of "popular" and "sovereignty." "Popular" implies a concept of class, the social relation of labor to capital that is being remade and intensified by digitalization but also presents opportunities for solidarity and struggle. Considerations of "sovereignty" address the position of different countries, especially the Global South, in a hierarchical global system that denies autonomy to the developing world, especially when it comes to data and digitalization.

The second section, *Future Histories*, takes its title from the provocative work of Lizzie O'Shea, author of chapter 2. She draws on historical episodes of resistance, from the Luddites to Frantz Fanon, in which the oppressed found ways to renegotiate, and occasionally seize control, of new technologies that threatened to impose a dystopian future. Rafael Ioris, in chapter 3, considers the historical tendency of those in power to seek to limit speech and distort it in their interests, drawing conclusions for contemporary threats to democracy presented by fake news, with particular attention to Brazil. In chapter 4, Ivan Da Costa Marques considers

the shifting boundaries between state, market, and science, changing over time and threatening now to elevate the market above and over the state and society it represents. Together, these chapters remind us that we have seen previous moments in history in which extreme accelerations of capitalist exploitation and extraction by great powers were masked as technological progress. While the current moment appears novel, faster, and more inevitable than ever, we can learn from prior episodes of resistance to build alternatives.

While history offers inspiration to contemporary resistance, we have not yet answered the question of what collectivities can form and advance popular interests over those of capital and great powers. The next section, *Tech, Capital, and Collectivities*, addresses some of the ways in which new collectivities are called into being, shaped, and in turn exert agency in their struggles over the terms of the digital age. Claudia Rebechi and her colleagues (chapter 5) evaluate platform work in Brazil and Latin America, creating a comparable scale by which rates of exploitation and potential avenues for organizing might be mobilized. Tássio Acosta, P. Locatelli, and Silvio Gallo (chapter 6) outline the threat to democratic politics, drawing especially on the example of Brazil, where fake news has operated consistently and effectively to undermine the Left, attack vulnerable groups, and nudge democratic institutions toward autocratic and neoliberal outcomes. Neda Atanasoski (chapter 7) offers an analysis of racial technocapitalism, documenting a conversation with leading observers of working class exploitation and class formation in platform work, focusing especially on the gendered and racialized character of allocating good and bad jobs within digitalization. Andre Leirner (chapter 8) considers the tools available to create new collectivities through coding, algorithms, and practices of data equity when incorporated into public decision-making, drawing on an example of environmental disaster and reconstruction in Brazil. Benjamin Goldfrank and Yanina Welp (chapter 9) evaluate efforts to deepen democracy using tools of participation and digitalization, reaching somewhat ambivalent conclusions about the future of participatory and inclusive democracy. Benjamin Selwyn (chapter 10) focuses attention on the system of food production and distribution to identify the ways digitalization might combine with altered social relations to create a decommodified and democratic food system, focusing especially on the United Kingdom and drawing examples from Brazil. The chapters both deepen our understanding of the nuanced and contextually specific way in which class is experienced as a result of digitalization and offer

insights into the ways in which new working class identities and formations might come into being. Part of class formation is the shared experience and analysis that working classes and popular sectors experience as a result of the digitalization of work, consumption, public services, and life. And part of class formation are the institutions and organizations that bring people together and intermediate their consciousness within productive, social, and political relations.

In the final section, *Digital States, Democracy, and Development*, we consider the ways in which states and international systems shift as a result of digitalization, with implications for democracy and development. William I. Robinson (chapter 11) outlines the threat posed by capital concentrated in a few huge corporations, intertwined especially with the coercive arms of the most powerful states with reverberations across the globe, a trend only accelerated by the pandemic. Vashishtha Doshi (chapter 12) evaluates digital statecraft undertaken by two middle powers, India and Brazil, attempting with limited success to carve out room for themselves, their entrepreneurial classes, and popular sectors, in a digital order. Parminder Jeet Singh (chapter 13) considers digital industrial policies by which countries, especially developing countries, might secure benefits from the global wealth created by digitalization while also ensuring that digitalization does not facilitate authoritarianism, environmental destruction, and inequality. Alessandro Teixeira and Zhenyu Jiang (chapter 14) consider the ways China has incorporated digital technology into its development and governance tools, using close state involvement to catapult itself to the technology frontier. Marco Cepik and Pedro Txai Leal Brancher (chapter 15) turn to questions of the global digital regime, including advocacy of a multisectoral and multilateral governance of digital transformation. States are not without resources and strategies to tame digitalization. Still, the challenges to states, especially states in the Global South, are profound, and this section reminds us that action will have to be both national and global to counter the power of finance and technology from the Global North.

Before closing, it is worth reflecting on the chapters chosen for this volume. The majority come from contributors to the course "Popular Sovereignty in a Digital Age," run by the Instituto Lula in 2022. The contributors to the course were chosen from a broad range of international and social categories, including three people who present as people of color, two women, two people from India, four from Brazil, one from China, three from the United States, one from Europe, and one from Australia. For

the volume, we invited additional chapters, including four chapters from students in the course. Three of the chapters include previously published material, reproduced here to bring to a new audience. By organizing the course and this volume in this way, we pursue the explicit objective of bringing popular and southern voices into the discussion of the digital age.

Notes

1. https://korbel.du.edu/news-events/all-articles/professor-aaron-schneider-receives-prestigious-appointment.

2. https://institutolula.org/instituto-lula-abre-inscricao-para-curso-sobre-soberania-popular-na-era-digital.

3. Obama called Lula the "most popular politician on Earth" (Nugent 2022).

4. There are exceptions, of course (UNCTAD, various years; Ragnedda and Gladkova 2020; Fuchs and Mosco 2016).

5. https://sourcetech411.com/engineering-laws-moores-rocks-butters-and-others/.