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<1>Digitized Institutions and Inequalities: A Review and Ways Forward</1>

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Institutions are the realization of ideologies, the conduits through which identities are articulated in accordance with political economies, and often the sites of struggle over inclusion into the body politic. This volume proposes that digitally mediated and transformed social processes are a sociological concern. If this is true, then digital sociologies will have to consider the form and function of institutions. In this section, scholars present theoretical, review, and empirical chapters on various institutions. In keeping with sociology's tradition of examining interconnectedness of institutions, these chapters consider digitization across schooling, work, and media. Each of these chapters reinforces this volume's main premise that digital sociology's greatest challenge and promise is theorizing and measuring inequalities that produce and are produced by society's datalogical turn. As Selwyn and colleagues point out, perhaps no sociological subfield has engaged the impact of digitality and institutions more consistently than the sociology of education. It is also the case that few institutions are undergoing as much visible structural change than is education, much of that either a consequence of or a problem for technologies. As such, the section begins with these authors' robust overview of digitization and schooling.

<1>Digitized Schooling</1>

The U.S. primary and secondary school structure continues to be defined by persistent inequalities in resources and outcomes. Tracking within schools (honors and general curricula) and tracking within schools (poorer urban schools and wealthier suburban schools) remains a defining characteristic for formal education. The racial divide in access to and returns from education suggests that problem of 20th century schools will persist in the

schools of the 21st century. Black students are, on average, less likely to attend a well-resourced public school, have the resources to attend a well-resourced private school, to be identified for higher track curriculums even if they do, and to be suspended and expelled from all kinds of schools for infractions that white students are not equally punished. These trends are present for all ethnic groups with group-based differences in intensity, kind, and frequency conditioned on social class, school composition, and geography. Across the world's wealthy and powerful elite nations, similar trends in inequality specific to the local systems of stratification can also be seen in school systems. Research on ethnic minorities and class mobility in the U.K. has experienced a resurgence in academic literature. And, across the less powerful nations, the oppressive forces of globalization continue to de-stabilize attempts at universal education schemes.

These historical, socially contingent patterns and structures are the broader context of technology's impact on education. Research has considered this impact at the level of nations, states, and municipalities; in classrooms and across classroom contexts; and, across the three sectors of higher education: private non-profit, public non-profit, and for-profit. The work is conducted across disciplinary fields, ranging from education research and sociology to economics, humanities, business, and cultural studies. For this reason, the research is wide, some of it deep, often producing conflicting theoretical frameworks while increasingly consuming more data than ever before possible thanks to new data collection regimes. This would be a challenge for knowledge production under any circumstances. But, under the reigning neoliberal (or corporate or marketized or financialized) socio-political ideology that disciplines individuals and groups, the challenge is particularly important.. The technology industry is ascendant in the global neoliberal system. Armed with capital, political power, and a legitimizing narrative, the technology industry has a clear objective to

shape educational systems in the U.S. and across the globe. Audrey Watters has documented the complex web of venture capital funding, NGO partnerships, and market relationships that tie mostly Western technology companies to almost every major trend in education for the last twenty years. Technology billionaires create non-profit organizations to give every child in the global south a laptop. Technology companies "give away" software to cash-strapped schools in exchange for copious amounts of user data that can be mined, financialized and commodified. Technological regimes introduce "academic analytics" to make higher education institutions more efficient. At every level of education and schooling, technology is reproducing global patterns of datafication, monitoring, pedagogy, praxis and *homo economicus* epistemologies.

At the same time, powerful group interests have converged with technological change to resist institutional exclusion and oppression. Parents use digital archives, search tools, and inexpensive platforms to buttress school deficiencies. Students use a variety of tools to form valuable peer networks and access information usually transmitted through informal curriculums. Feminist, anti-racist, and anti-capitalist DOOCs (distributed open online courses) have proliferated even as MOOCs (massive open online courses) have sucked the attention and capital out of most public discussions of open and online education. Some of these platforms have been studied for their sheer size, their skill-building efficacy, deep learning development, and cost-saving potential. Almost all of this research has either ignored the structural inequalities of race, class, gender and their intersections or treated those inequalities in superficial, atheoretical fashion. Some of the inattention to categorical inequalities in this literature is due to the nature of the data collected about those who use these platforms. Open resources compromise their openness by using bureaucratic means of access (e.g., applications) that provide data on student characteristics and background.

School systems are diverse ecosystems and technology adoption can vary a great deal, hampering systematic analysis. Also, much of what scholars would consider research increasingly happens under the auspices of market research at proprietary companies who own and sell technological "solutions" to educators, municipalities, and learners.

Selwyn, Nemorin, Bulfin and Johnson propose a subfield of sociology of education technology to bring synthesis to the study of technology and schooling. This chapter provides an indispensable primer on the current subfield of education research about technology. It also goes further by summarizing the technologies most often studied in research on education. They propose that a "digital sociology of school" that would "properly coordinate" the competing narratives, theories, and methods in the current political economy of technology and education. The chapter makes many contributions to digital sociology's engagement with one of the most critical institutions in society. Chief among them is a position shared by the editors of this volume, namely that digital sociology must problematize "digitizations of schools and schooling". This includes attending to the gaps outlined above: group inequalities, power, and ideologies. The authors caution that critical sociology is not the same as being persistently critical. Instead, Selwyn and colleagues harken to Mill's imperative that the sociological imagination interrogate biography and history -- individuals and structures -- in such a way as to put them both in greater relief.

From this important invitation to take up the challenge of a critical digital sociology of schools several subsequent chapters go about doing just that. Jeffrey Johnson's chapter begins right where Selwyn and colleagues asks us to begin: by bringing a critical lens to a dominant ideology. For Johnson, "data-driven" and "evidence-based" decision-making in higher education is a dominant ideology ripe for critical engagement. Johnson goes into the heart of an institutional structure, a place that I hope more digital sociologists will venture.

The chapter theorizes the technological systems that sort, identify, and ultimately hierarchically differentiate students using deceptively agnostic taxonomies based on power relations. Gender, race, parental status, student states – these categories become “translation regimes” that shape the limits of “data-driven” decision-making to create institutional spaces for direct forms of participation in the university. Johnson provides a theoretical framework to interrogate the institutional mechanisms of technological adoption and social reproduction of inequality. It is a generative framework with far-reaching possibilities for translating a critical site of education corporatization across various educational sites.

<1>Digitized Work and Media</1>

Critically interrogating technology and education is an end unto itself, but sociological interest in education has always justified its interest for schooling’s role in social stratification. We go to school to become better citizens, sure, but the sociological mind is often concerned with questions of mobility, labor market entry, capital capacity, status formation and all the attendant consequences for health and well-being. Stratification is the core sociological imperative. Considering schooling and technology to what ends is yet another area ripe for digital sociologies’ intervention. Two contributions in this section tackle aspects of digitality and work, often by examining connections to education or the translation regimes impacting both how we go to school and how we go to work.

Stephen Barnard’s chapter looks at higher education and technology, turning to consider the vocational promise of its intersections. Barnard begins with a valuable overview of the various interventions that digital sociology has made and proposes how digital sociologies can build on those interventions. The chapter draws on lessons from the much more defined (and arguably professionalized) “digital humanities” field as a point of

departure. As have others, Barnard points out that technological adoption – as medium and message – is conditioned on group inequalities in labor conditions within the corporate university structure. I believe Barnard also makes one of the most fundamentally sound responses to concerns that digital sociologies poaches from other fields of study: “scholarly inquiry is not a zero-sum game”. More entrenched in the earlier ways of university corporatization, the humanities’ foray into digital modes of inquiry have created opportunities and have also reproduced institutional hierarchies. Digital humanities departments, scholars and centers have, for example, reproduced gendered and racialized notions of teaching as inferior to quantitative textual modeling. Well-funded digital humanities centers and projects often attract white, male, able-bodied and similarly privileged scholars into institutional systems where the actual humanities departments are being starved of rights, pay, job security, career mobility, and investment. Barnard warns us to mind the gap of formal knowledge production and pre-existing patterns of inequality in our effort to bring together digital sociologies and scholars.

Barnard’s message is the starting point my contribution to this section in a chapter on intersectionality and digital sociology. I draw on existing research of academic capitalism and race, class, and gender for three key frameworks critical to an intersectional digital sociology that recovers more than it reproduces. The chapter argues that to study how digitized institutional mechanisms mediate categorical inequalities, sociological theory must look anew at key principles of “the digital.” For example, contemporary debates about digital privacy (also discussed in Johnson’s chapter on translation regimes) coalesce around the assumption that *more* privacy is a universal good. And, it is true that privacy violations tend to come first and have the harshest penalties for black, brown, and poor people. These penalties lead to digital surveillance and predicative criminality of the socially vulnerable

through intersecting data translation regimes across work, education, health, and political institutions. But, I, contend that one consequence of categorical protections before the law has been the bureaucratic regimes of data collection and categorization. The boxes for race and gender on the forms (increasingly now digital form fields) are rooted in socio-historical struggles to translate systematic oppression. How do black queer students argue that they are being categorically discriminated against at work or school if there isn't a box to check? I present data from my six-year study of women enrolled in online for-profit degree-granting programs in the U.S. Part of that study was digital ethnographic research of a support group for students who met on Facebook. I show how algorithmic stratification based on categorical inequalities made these students vulnerable to unequal access to affordable, not-for-profit colleges but also make it possible for them to form critical online support networks to navigate the consequences of that unequal access. Other forms of algorithmic stratification are unfolding in work as data-driven hiring uses social media data, lead generators, task aggregators, and credit scoring algorithms to datatize categorical inequalities in ways difficult to observe and measure. Drawing on Kishonna Gray's black cyberfeminist approach to intersectionality, I argue that research should incorporate dimensions of classification situations to interrogate how digitized institutions reproduce inequality.

Tripodi visits the intersection of social media and educational institutions in a study of Yik Yak use among college students. It is a case of the increasing intersections of media and education. It also extends discussions elsewhere in this volume of the mutability of privacy, in this case how anonymity functions. Using virtual ethnography, Tripodi develops a way of examining the political economy specific digital platforms' effect on institutional

arrangements. Yik Yak's platform affordances shapes how communities conceive of norms and behaviors.

Calle Rosengren and Mikael Ottoson continue the section's focus on the socially contingent nature of digital processes by focusing on workplace surveillance. Selwyn and Johnson argue that digital sociology of schools must be critical. Rosengren and Ottoson take up that challenge for digital sociology more broadly, bringing a critical lens to labor market precarity in the 21st century workplace. Similar to Johnson, Rosengren and Ottoson find the threads of workplace monitoring in the historical march towards "data-driven" decision-making. The workplace data that started as a way to measuring employee (and, ergo firm) performance has morphed into an institutional mechanism for control. Empirical data are from field sites at two universities. One might be tempted to think the setting too narrow to have wide-ranging applicability to work. But, it is worth noting that the university workplace is part of the U.S. labor market's shift to a knowledge-based economy. That isn't to say that the majority of U.S. workers work in the fields associated with complex cognitive tasks. They don't. However, a disproportionate share of labor market returns in pay, security and status have shifted to jobs in the knowledge sector. This smaller sector of "good jobs" stands across the gulf from a growing sector of "bad jobs", low-wage and low mobility jobs concentrated in the service sector (Kalleberg). This job polarization is one of the most animated discussions in the sociology of work, with consequent impact on how we understand race, class, gender, ability, and sexuality inequalities in the new economy. Digital surveillance practices at Rosengren's field sites yield important insights into a feature of the best quality jobs in a labor market defined by there being fewer and fewer of such jobs.

Media, especially social media, is one of the most popular sites of digital study. Media is a critical social institution for the reproduction of identity and narratives. Williams

observes how Black Twitter has shaped a powerful communal experience of television. The chapter uses multiple qualitative methods, including content and interview analysis. These are methods well-suited to the contextual meaning of social processes. The analysis reveals that participants present a contested view of what constitutes membership in a racialized digital space. McKinney's case study of a sports Internet website builds on the section's attention to how platforms shape digital interactions. Networked news media is constrained by affordances sensitive to profit-making activities. Here, McKinney shows how the nature of work – unpaid writers – and precarious labor arrangements shaped the quality and content of the news media that produces legitimizing media narratives.

Wynn contributes a methodological framework for understanding how technologies mediate concepts of privacy and publics. This is another theme in this section and volume. How are notions of privacy constructed, contested and shaped by digitally-mediated arrangements. Wynn uses experiential data of mobile platforms, geocaching technologies and interview data in the case of urban explorers. It is a multi-dimensional exploration of urban sociology as mediated through various digital platforms.

Together, these chapters do precisely that in each of their respective domains: they yield important insights into critical features of the institutions that mediate our digitized society. This work is generative. Each chapter opens up further possibilities while also bringing some consensus to existing literature on digital sociologies, institutions and inequalities.