WORK AND LABOR IN THE DIGITAL AGE

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WORK AND LABOR IN THE DIGITAL AGE

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INVESTOR IN PEOPLE

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INTRODUCTION

TAKING STOCK OF THE DIGITAL REVOLUTION

Steve P. Vallas and Anne Kovalainen

The relation between workers and employers has been undergoing far-reaching structural changes for more than a generation now, as business organizations have sought to minimize their reliance on the "standard" employment relation, the vaunted "job for life." At the center of this trend has been the spread of atypical, contingent, or "non-standard" forms of employment, which now account for a rising proportion of job growth in much of the advanced capitalist world. Though firms embrace these changes under the banner of flexibility and innovation, the expansion of non-standard work has opened up important gaps in labor law, social insurance systems, and labor market institutions, exposing many workers to rising and injurious levels of risk. Pressing as these challenges already are, they seem likely to grow even more pronounced as the digital revolution makes itself felt and the platform economy gains purchase on the economy as a whole. At stake is our very understanding of what constitutes a "job" under contemporary capitalism.

Sensing these stakes, scholars have energetically sought to understand the digital revolution, giving rise to a burgeoning literature. Surveying this body of knowledge, one is struck by two notable characteristics. One is the proliferation of conceptual ambiguity, as analysts have generated an entirely new vocabulary with which to describe how the platform economy works. The result has been a bewildering array of terms competing for attention, often in an ad hoc way. Thus different analysts speak of the "gig economy" (by which they often mean very different things), while others refer instead to "platform capitalism" or to the "sharing" or "on-demand economy." The result has sharply curtailed our ability to understand how the digital economy actually works. A second feature has

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been a tendency to invoke the most dystopian images of the digital revolution, as when writers view robotics, artificial intelligence (AI), and machine learning as posing an unprecedented threat to paid employment as such. While such fears are understandable, based as they are on real structural change, they serve only to complicate the debate. Indeed, the tendency to highlight worst-case scenarios may actually make workers more susceptible to the demands of their employers, only contributing to the very trends that theorists propose (Doogan, 2009). Needed are sober assessments of how the digital revolution is likely to alter the nature of paid employment, guided by clear conceptual definitions and frameworks, the better to gain control over this transformational period. The chapters in this volume represent one step in this direction.

THE DIGITAL REVOLUTION LAID BARE

Though the digital "revolution" has been gestating for decades, its current manifestation has drawn energy from a series of developments that unfolded in rapid succession: the emergence of universal Internet access in the 1990s; the investment of massive amounts of finance capital in Internet-based start-ups, fueling the dot.com surge (Goldfarb, Pfarrer, & Kirsch, 2005; Srnicek, 2017); the rise of social media (web 2.0) in the early 2000s; and the explosive growth in demand for mobile devices. All this eventuated in the "sharing economy," in which countercultural aspirations co-existed uneasily with the profit-oriented goals of Internet start-ups (Schor & Attwood, 2017). An especially critical point with respect to employment relations was reached with the explosive growth of Airbnb and Uber, both founded in 2008–2009, and with both registering unusually rapid growth on a global scale. Side by side with a shifting array of other major platform firms like Amazon Mechanical Turk, Crowdflower (now Figure Eight), e-lance (now part of Upwork), and TaskRabbit (recently bought by Ikea), an entire ecology emerged that has had major consequences for reorganizing the work at the retail and service sectors, and for the structure of work in fields far beyond these two domains. Platform capitalism has emerged as a major economic entity – and one whose social, political, and economic consequences have provoked breathless speculation among scholars, policy makers, and business groups around the globe.

Advocates of platform capitalism have offered numerous arguments in support of their views. First, by their very nature, platforms are based in the cloud, and as such suspend the physical and spatial factors that have barred several marginalized groups from the labor force. Hence, in principle, rural populations in depressed economic regions, people with disabilities, or the elderly can all find inclusion in the economy more easily than in the past (see Patrizia Zanoni, this volume, Chapter 6). Second, by allowing for the sharing of property (cars, tools, and housing) that might otherwise sit idle, platform companies make possible a more efficient (and environmentally responsible) set of practices than private ownership supports. Third, although platform capitalism imposes painful disruptions on existing institutions – Joseph Schumpeter's "gales of creative destruction" are never pleasant and seldom predictable – the outcomes of such innovation reduce

the cost of services while making them more responsive to consumers. Free market economists are particularly prone to develop one or another form of this argument (see Sundararajan, 2016).

Critics of platform capitalism reject each of these arguments, and also add concerns about which advocates have said little. A point of departure for any critical view of the digital economy holds that the "sharing" of property is increasingly a misnomer. A tension arose at the origin of the platform economy between its "collaborative" and "commodifying" logics, and the latter has demonstrably predominated. To refer to the platform economy as "sharing" merely euphemizes the marketization of social domains, thus enabling the spread of exchange relations over the social landscape as a whole. And when labor platforms do include marginalized workers, they commonly do so via "taskification" – that is, the reduction of jobs to individual tasks (see Casilli & Posada, 2019) offering little of the security or benefits ordinarily attached to paid employment (Ravenelle, 2019). Moreover, by dint of their reclassification of labor as "independent contracting," platform firms reduce the transaction costs incurred by the outsourcing of work, thus threatening to undermine the standard work arrangement itself. The danger, say Martin Kenney and John Zysman (2016, p. 62), is that platforms have begun to take the place of factories as the locus of economic power, giving the Ubers of the world a position that is "even more formidable than was that of the factory owners in the early industrial revolution."

The first order of business would seem to be that of establishing the size and impact of platform capitalism, but even here the discussion has encountered abiding difficulty. Estimates vary widely, with Lawrence Katz and Alan Krueger (2016) reporting that only 0.5 percent of the US labor force earned significant amounts of income on platforms in 2015. At the opposite end is the Pew Research Center (2016) report which put participation at roughly 8 percent. Many estimates, both in the United States and Europe, fall in between these extremes, depending on the definitions used. All estimates report dramatic growth in the platform-based workforce at least since 2012, however, with year over year expansion showing little sign of falling off (Farrell & Greig, 2016; Farrell, Greig, & Hamoudi, 2018). Although it might be argued that the attention devoted to platform labor is unjustified, in view of its modest size, this argument seems economically and historically naive. Similar arguments were made about the factory system during the era of proto-industrialization, for one thing. For another, there is real reason to believe that the very existence of platform-based employment affects employment in the "classical" firm, if only by reducing the transaction costs involving in the outsourcing of labor – an option that large firms have found increasingly attractive. The labor market dynamics that link traditional and platform-based firms warrant much closer attention than they have received to date.

A second task in understanding the digital economy and its transformative power vis-á-vis "traditional" economy requires that we identify its overall structure – that is, the division of labor established among its disparate parts. Achievement of this task has been made difficult by the tendency of scholars to fasten on discrete aspects of the digital economy, often to the neglect of its constituent parts. This is one contribution in Nick Srnicek's (2017) influential *Platform Capitalism*, which

points to the multifaceted nature of the platform economy, whose most important parts exist far from the view of the end consumer. Rather than fixating on the point of intersection between workers and consumers, Srnicek underscores the strategic importance of digital operations that are far removed from the consumer's purview, involving platforms providing cloud services, advertising and information harvesting – operations that pit Google, Amazon Web Services, Microsoft, and Facebook in an ongoing struggle for control over information. Indeed, Srnicek argues that these business-to-business regions of the platform economy warrant closer attention than the labor platforms themselves. The latter may not even be economically viable, but instead require cross subsidization from the more lucrative regions of the platform ecosystem. Platform capitalism is historically significant. It changes the resources and structural mechanisms on which capital accumulation depends. And it needs to be understood it its entirety.

THE VOLUME'S CONTENTS IN CONTEXT

This insight provides the point of departure for Martin Kenney and John Zysman's contribution (this volume, Chapter 1), which scrutinizes the full array of sectors that constitute the digital economy today. Important questions can be raised at this juncture. These authors note that the FAANGs (Facebook, Apple, Amazon, Netflix, and Google) are historically novel and unique in many respects: with the exception of Amazon, they employ a small handful of employees, yet have become the most highly capitalized and strategically powerful firms in the world. Perhaps because of their novelty, they constitute an ascendant fraction of capital whose internal structure has remained largely unknown. Kenney and Zysman detect three sub-regions of the platforms: their own employees, some of whom provide "venture labor" (Neff, 2012); platform-mediated work (everything from Uber to Mechanical Turk); and "platform mediated content creation" (not only programmers but also workers performing "aspirational labor" that is unpaid, as workers seek to brand themselves via YouTube and Instagram). The virtue of such an overarching framework is that it begins to bring into view the entire anatomy of the platform economy, the better to understand interrelations among its disparate parts.

While one danger is that of mistaking the part for the whole, another danger is that of reifying the totality. This has especially been the case with respect to the technological imaginary that the public often seems to embrace. This is the point alluded to above: how the culture of fear that pervades so many discourses has infused itself into the perception of technoscience. Though survey data may be needed to confirm the point, it seems that much public discourse about technology indulges in or stokes dystopian perceptions that were formerly confined to science fiction novels and films in which robotics and AI foster a race of indefatigable beings whose prowess displaces human labor entirely. Whether couched in terms of Kondratieff waves or other modeling techniques, the claim is that whole swaths of the occupational structure are susceptible to technological

displacement, which stands to overturn the wage labor system writ large. It is for this reason that many Silicon Valley billionaires have come to support the universal basic income, since they sense the political upheavals that technological disruption seems poised to provoke. Such dystopian views are nourished at a time when brick and mortar stores are exposed to what journalists have taken to calling the "retail apocalypse," and when retail cashiers are being replaced by kiosks that support self-check-out systems. When masses of human labor are rendered superfluous, how will the social order survive?

Here, the chapter by Jerry A. Jacobs and Rachel Karen provides the readers with some reassurance. Reviewing overall predictions about the impact of labor-saving devices and confronting them with actual results, these authors note how frequently the most audacious forecasts wind up completely missing their mark. Key are the assumptions commonly articulated throughout this entire genre: the notion that technology inevitably replaces human labor, that the pace of such displacement has been accelerating, and that it seems imminently poised to reach a tipping point.[1] Confronting these assumptions with scholarship drawn from the history of technology, the authors show precisely how unfounded these assumptions would seem to be. Often, labor-saving devices do not "save" or eliminate the need for labor in any quantitative sense, but instead simply raise expectations about the quality of the work that remains to be done. Alternatively, new technologies create entirely new occupational jurisdictions into which human labor can flow – perhaps not smoothly, but over the long run, inevitably. Or at least this is the result of their empirical analysis, which scrutinizes the pace of occupational change over a broad historical period, during which the United States became (and remains) the major industrial capitalist economy in the world. Contrary to the dystopian argument, the authors find no evidence of an accelerating rate of occupational disruption; indeed, there is some evidence of an opposite trend, involving occupational stability. The implication is that we must guard against assumptions that we humans confront a technological juggernaut of our own making. Though such perceptions can at times goad decision makers into action, they can also foster a sense of powerlessness. We do best to confront real and not Quixotic threats.

One problem that has impeded analysis of the platform economy is the tendency to embrace overly simplified or monistic accounts of the orientations platform workers bring to bear on their work. This has been a particular issue among critics of the platform economy, who have often viewed platform participants as comprising a *homogeneous* group. The tendency here has been to view workers as uniformly powerless and dependent on the platforms, as if all participants shared the same subordinate position within the labor market. It is of course true that the problem of misclassification is quite real, and that many and perhaps most platform workers bear no resemblance to the self-employed, independent contractor that Uber and Upwork try to conjure. Yet most careful studies of labor platforms find that a marked *heterogeneity* among their participants is quite real, as Juliet Schor (2017) has repeatedly found (see also Robinson, 2017; Scholz, 2017). Some platform workers are wholly dependent on their earnings from the platforms, and these workers often encounter forced choices at work, accepting unfavorable

tasks owing to economic coercion. Yet the proportion of workers who are instead merely supplementing their income, or working to get ahead, is at least as large as the proportion who are largely dependent on their platform earnings. These differences cannot be wished away, not least because they manifest themselves in differing orientations toward regulatory intervention. Interestingly, the chapter by Mariana Manriquez (this volume, Chapter 7) on Uber drivers in Monterey, Mexico, also finds a pattern of marked heterogeneity. As she reports, some Uber drivers labor in the shadow of the factory shutdowns their city has endured. But others – often those with higher levels of education and a background in more prestigious occupations – have an entirely different experience as Uber drivers. The latter group views Uber almost as a video game that blurs the line between work and play (Scheiber, 2017) and tends to obscure the relatively limited level of autonomy they actually enjoy. One important lesson of this study is the need to be attentive to the full range of labor market situations in which platform workers are found, together with the orientations they exhibit, the better to reach an accurate appraisal of their work experiences.

A related point that has bedeviled scholarship in this field is the uncertainty that has surrounded the role played by the structural "affordances" that digital platforms exhibit. Algorithms are of course the basis of such affordances, since they regulate the flow of information about potential transactions, match clients with potential workers in varying ways, all the while enabling clients to assume many of the managerial functions (such as the evaluation of worker performance) that have traditionally been performed by the firm (Kornberger, Pflueger & Mouritsen, 2017; Rosenblat & Stark, 2016). Affordances take a different form with respect to such labor market intermediaries and social-networking sites as LinkedIn and Monster.com, and these have important consequences for labor market institutions in the digital age.

Until not long ago, job applications were bound up with paper applications and in-person presentations of self. The effects of the digital revolution here have only recently begun to emerge, as in study of LinkedIn – the predominant career-relevant site in the English-speaking world. Though this site promises to provide users with an almost unlimited digital presence, doing so by making their credentials visible to millions of potential employers, such visibility is double-edged. Users are obliged to provide profile photos for their accounts to be at all visible, which opens the door to discrimination along the lines of race, gender, age, and body type. Moreover, users must adhere to the site's "one profile" rule, which limits the strategies that job seekers use as they compete for jobs. The one profile rule, it seems, reflects the interests of employers, not workers, since the former are the site's major source of revenue. The point is that digitalization of the labor market has institutionalized a power asymmetry between buyers and sellers of labor time in entirely novel ways.

Sharone's study primarily focused on the supply side (the user's experience) and thus could not speak to the demand side (the employers on the other side of the screen). Precisely this thread is picked up by Ifeoma Ajunwa and Daniel Greene (this volume, Chapter 3) and by Steve McDonald, Amanda K. Damarin, Jenelle Lawhorne, and Annika Wilcox (this volume, Chapter 4), both of whom

are concerned with the design of digital hiring platforms. The chapter by Ajunwa and Greene tackles what has thus far been unexplored territory: digital systems designed to manage the job application process itself. Tracing the evolution of these systems, from paper to retail kiosks to contractor-provided systems that live in the cloud, these authors show how they enable employers to harvest enormous amounts of applicant data through online psychological tests, criminal background and credit checks, all of which are retained no matter what the outcome of the application. At issue here is what the authors refer to as "platform authoritarianism," which "restricts the actions available to workers on one side while offering new affordances to employers on the other." More than this, these programs tend to perpetuate homophily, doing so by building any previous workforce preferences or biases into the algorithm's hiring recommendations. Once a particular socio-demographic group establishes its position, the algorithm uses this trend as its definition of success, in effect by "automating inequality" (Eubanks, 2017).

McDonald and his colleagues reach parallel findings. Again focusing on the demand side of the equation, these authors explore how human resource recruiters use Internet-based search capacities to identify employees whom clients deem desirable. Notable is the polarization-inducing effect of these provisions. Where routine jobs must be filled in volume, recruiters use mass application management systems like Monster.com. Where highly rewarding positions must be filled, a more selective or customized search unfolds that targets already employed workers. One common thread is that jobless workers are almost always automatically excluded from consideration. Yet even more important is the need to identify high potential prospects – a kind of labor market creaming – that further polarize the structure of the labor market.

These studies advance existing research on the relation between digital affordances and the structure of social inequality. In so doing they set the stage for research on an equally important set of influences involving the lived experience of platform participation. This is a matter that Manriquez addresses in her chapter, which sensitizes us to the game-like meanings that platforms induce workers to embrace. The issue of subjective experience emerges as a key conclusion in the chapter by Christine Gerber and Martin Krzywdzinski, on the features of crowdworking sites that work to maintain the allegiance of site participants. Scrutinizing the features of these sites and interviewing participants, the authors suggest that more is going on here than simply "digital Taylorism" or the algorithmic regulation of labor. Standardized forms of labor control are certainly in evidence on sites such as Amazon Mechanical Turk, and reputational controls – an "evaluative infrastructure" (Kornberger et al., 2017) – can never be ignored. But overlaid atop these mechanisms are normatively based influences that give users a sense of communal belonging or affiliation to varying degrees. Platform firms of course try to govern worker perceptions, circulating rhetorical frames that nudge workers to maintain their effort during the course of the working day. Yet over time, evidence suggests that workers learn how to resist such tactics (Shapiro, 2018), substituting their own moral economy as the logic governing their work. That this is not often the case, and that some platforms

succeed in fostering user retention, commitment, and even identification, raises the question as to how firms are able to achieve such goals, or put differently, how the various mechanisms of labor control combine or complement one another, thereby undergirding labor control. The virtue of Gerber and Krzywdzinski's work is that it links the study of platforms to labor process theory, thereby refuting the appearance of neutrality that platforms commonly sustain. These sites are not, as they claim, passive brokers simply matching providers with clients. They not only respond to the market but constitute it on a daily basis as well.

There is evidence that precisely these lines of inquiry are beginning to open up, foregrounding the perceptions of platform workers themselves. This is especially important in the light of the tidal wave of entrepreneurial ideologies to which workers are exposed, and which may be especially potent in a context of rising labor market uncertainty. Yet even here, evidence suggests that workers are far from passive recipients of meanings received from on high. In a study of Airbnb, Fitzmaurice et al.(2018) find that hosts view their activities as transforming or even humanizing, not extending, the logic of the marketplace. The active or agentic features of platform workers also emerges in research conducted by Stanford's Hatim Rachman (2018). Studying Upwork, Rachman found that workers faced an important challenge, in that the platform's reputational system was constantly undergoing a recalibration. Since virtually all workers were receiving 4.9s, the firm as the firm sought to institute a more discriminating ranking system. But since the redesigned ranking system was opaque to the site's participants and seemed both arbitrary and unpredictable, participants responded by trying to exercise an important measure of control over their own rankings, doing so by gaming the system. That is, they negotiated their ratings with the clients they served and asked for their contracts to be given forms that would elevate their scores. Rachman finds that subjective perceptions matter – and that under certain conditions, platform workers can create unmanaged spaces within the confines of platform work as such. Very similar findings emerged in Hilary Robinson's (2017) study of Uber drivers in Boston, in which the perceived unfairness of Uber's policies provoked a "strike against the algorithm."

The circumstances that Robinson studied were in some respects distinctive. The Uber drivers in her study were able to form a sense of solidarity, largely owing to the ethnic ties and experiences they shared as professional livery drivers. Yet a rich stream of recent studies has begun to suggest that her findings were by no means anomalous, and that platform workers quickly exercise voice when they encounter circumstances that violate their sense of fairness and when they enjoy the cultural resources needed to challenge the structural or algorithmic controls that firms bring to bear on them. This has clearly been the case in the #Slaveroo movement that surfaced among couriers in much of United Kingdom and the European continent beginning in 2016 (Cant, 2018; Woodcock, 2016). Facing unfavorable shifts in the payment and assignment schemes used by Deliveroo and foodora, couriers mounted a vibrant wave of resistance that used strikes, demonstrations, and direct-action tactics. These actions, together with variations in legal and regulatory institutions, have generated a complex pattern of differentiation among delivery services, each of which is competing for a share of the consumer market.