

Milieus in the Gig Economy

Mario Khreiche

Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

In

ASPECT:

The Alliance of Social, Political, Ethical, and Cultural Thought

Rohan Kalyan, Co-Chair
Timothy W. Luke, Co-Chair
Daniel Breslau
François Debrix

Blacksburg, VA

Keywords: Gig Economy; Sharing Economy; Platform Economy; On-Demand Economy; Collaborative Economy; The Future of Work; Automation; Interface; Milieu; Motility; Precarity; Liquidation; Potentiality; Inequality; Critical Technology Studies; Political Theory; Econofiction

Copyright 2018

Milieus in the Gig Economy

Mario Khreiche

ACADEMIC ABSTRACT

The gig economy (also known as sharing, collaborative, platform, or on-demand economy) has received much attention in recent years for effectively connecting people's property and resources to booming markets like mobility, tourism, and data processing, among others. In these contexts, proprietary platforms enable users to temporarily make time and material resources available to other users while overseeing respective transactions for a fee. To ensure a careful discussion, the project first provides historical and theoretical context on these developments. Subsequently, the project presents three specific gig economies, namely the ride-hailing service Uber, the home-sharing service Airbnb, and the online labor marketplace Amazon Mechanical Turk (AMT). At first glance, the swift and frictionless services in these gig economies suggest an unprecedented level of automation regarding the capacities of smartphones and network technologies. A more detailed inquiry, however, reveals that the ostensible automation in Uber, Airbnb, and AMT unequivocally hinges on the informalization, precarization, and displacement of work. Concretely, labor processes, sociality, and even idle time in these economies are increasingly prearranged, thus shaping behaviors that closely adhere to machine logics and computational protocols. At the same time, a cultural perspective indicates that these demands commonly register as modes of freelance and entrepreneurialism rather than dispossession and displacement. On the one hand, such extenuating meanings are owed to the comprehensive marketing by platform providers, whose efforts to create an active user base significantly improves their public relations. On the other hand, the active connotation of workers in the gig economy has substantial roots in online forums that serve workers to improve labor relations. Specifically, as organizational processes systematically escape the purview of the individual worker, a plethora of online support communities has emerged as means to navigate emerging challenges. An instructive site for ethnographic research, these online spaces document how workers mediate corporate malpractice, unwieldy users, and a range of topics specific to each gig economy. The project refers to these spaces as milieus, that is, social scenes in which workers continuously make sense of productive activities. A milieu perspective indicates that, aside from significant economic stresses, the dynamics of gig work reveal a shift toward a subjectivity that reconciles the social and cultural ambiguities of extensively prefigured tasks with a ubiquitous entrepreneur ethos, turning every gig worker into their own enterprise. The project uses a robust interdisciplinary methodology comprised of political thought, discourse analysis, and ethnographic research. The findings temper overly optimistic discourses on the future of work, specifically that of postcapitalism, which is all too often theorized in a way that ignores the distinct social settings of increasingly automatable labor.

Milieus in the Gig Economy

GENERAL AUDIENCE ABSTRACT

The present project provides a survey of contemporary work relations in the context of the so-called gig economy (also known as the sharing, collaborative, platform, and on-demand economy). Against the background of recent concerns over automation replacing work at a large scale, the project argues instead that the displacement of work warrants more critical attention. The project examines how the gig economy presents their services as automating technologies while downplaying the ways that workers' employment, not to mention lives, are made increasingly precarious by these alleged improvements. Specifically, the project surveys three gig economies, the ride-hailing service Uber, the home-sharing service Airbnb, and the online labor marketplace Amazon Mechanical Turk (AMT). Methodologically, the project employs an interdisciplinary approach, integrating insights from political economy, critical theory, discourse analysis, and ethnographic research. A qualitative assessment of the respective work environments shifts a relatively apolitical discourse on the future of work not only toward a more pronounced critique of the gig economy, but also toward a renewed discussion on the kinds of jobs that earn the labels of freelance and entrepreneurship. Professionals and scholars concerned with the future of work stand to benefit from the findings of the research, particularly as it challenges some commonplace assumptions in the discourse of what has been termed postcapitalism.

To my parents.

Acknowledgements

Presenting a comprehensive account of individuals who have helped me write this dissertation seems like an impossible task given the time required to conceive, research, and write the project. Along the way, I received invaluable support from family members, friends, mentors, colleagues, and acquaintances, sometimes even from inadvertent and unlikely sources. The following is my best attempt at paying tribute where it's due.

First, I would like to thank my parents, Abdallah Khreiche and Ingrid Khreiche, for their unwavering and unconditional support over the many years it took to complete my education—this dissertation is dedicated to them. I would also like to give special thanks to my partner, Emma Stamm, whose love, faith, and intellect were instrumental in taking this project across the finish line. I'm also especially grateful to my siblings, Andre Khreiche and Patricia Khreiche.

During my time in the ASPECT program, I was fortunate to encounter a number of amazing, brilliant, and reliable scholars who eventually formed a dissertation committee that went above and beyond for me. Rohan Kalyan's dedication and excellence in scholarship, teaching, and advising as a co-chair was without a doubt the key ingredient to this project and I'm lucky to call him a friend. Likewise, Timothy Luke's unyielding support as co-chair was immensely helpful in developing my research. The same can be said for Daniel Breslau and François Debrix who have provided indispensable comments, criticisms, and suggestions along the way.

I'm also grateful to my good friends and colleagues who have invested time and effort into reading chapter drafts and providing feedback, particularly in the final stages of the process: Ryan Artrip, Benjamin Taylor, and Judson Abraham. For support, solidarity, conversations, and friendship, I would also like to thank: Alexander Stubberfield, Anthony Szczurek, Shelby Ward, Caroline Alphin, Mary Ryan, Leigh McKagen, Katie Cross, Amiel Bernal, Tim Filbert, Jesse Paul, Mike Zarella, Mohammad Pervaiz, Komal Dhillon-Jamerson, Trevor Jamerson, Jordan Laney, Taulby Edmondson, Kent Morris, Sascha Engel, Francine Rossone, Christian Matheis, Holly Jordan, Patrick Salmons, Allie Briggs, Rob Flahive, Sarah Plummer, Shaun Respass, Molly Todd, Linea Cutter, Maddie Tapper, Şengül Yildiz-Alanbay, Ezgi Seref, Nada Berrada, Tamara Sutphin, Karen Nicholson, Kim Hedge, Karen Hult, Tom Ewing, Heather Gumbert, Mark Barrow, Mauro Caraccioli, Andy Scerri, Brian Britt, Nick Copeland, Damien Patrick Williams, Emily Bianchi, Ezgi Küçükdeğer, Matt Brisendine, Janet Convery, Jenna Anderson, Danielle Cristino, my coaches and teammates at Team Mannon Brazilian Jiu Jitsu, and anyone whom I have certainly and regrettably left out.

Contents

Chapter One.

Introduction: On the Historical and Material Preconditions of the Gig Economy

1. Introduction	1
2. A Brief History of Automation	6
3. Financialization and Post-Fordism as Precursors to the Gig Economy.....	13
4. Insufficient Metaphors and the Efficacy of Discourse.....	21
5. On Method: The Milieu and the Question of Materiality	32
6. Motility as Subjectivity.....	38
7. Overview and Approach	40

Chapter Two.

Uber: Projection of Ubiquitous Coverage and Driver Motility

1. Introduction	44
2. The Uber Model of Mobility	47
3. Entrepreneurship and Precarity in the Uber Milieu	49
4. Pushing Buttons and Networked Driver Motility	54
5. Ubiquitous Network Coverage.....	58
6. Beyond Uber Mobility.....	61
7. Conclusion.....	64

Chapter Three.

Airbnb: A Prism to Unsee Inequality

1. Introduction	67
2. Constructing Common Sense: The Airbnb Community.....	72
3. Scenes from The Airbnb Milieu	80
4. The Nexus of Property, Algorithms, and Visibility	87
5. Conclusion.....	93

Chapter Four.

Amazon Mechanical Turk: In the Twilight of Automation

1. Introduction	96
2. Work in Amazon’s Corporate Network.....	100
3. Crowdsourcing in Amazon Mechanical Turk	104
4. On Turker Motility and Master Workers	112
5. Beyond Turking: Opportunities and Limits of Alternative Crowdsourcing	119
6. Conclusion.....	122

Chapter Five.

Conclusion: An Endless Present of Continuous Engagement

1. Introduction	126
2. Integrative Lessons from Uber, Airbnb, and AMT	130
3. On Determinist Futures in Postcapitalist Discourse	137
4. The Continuous Production of Meaning in the Future of Work.....	147
5. Conclusion.....	153

Bibliography.....	158
--------------------------	------------

Chapter One

Introduction: On the Historical and Material Preconditions of the Gig Economy

1. Introduction

The future of work has come under renewed scrutiny amidst rising concerns about automation threatening to deliver widespread joblessness and precarity. While some researchers rather hastily declare *The Second Machine Age*,¹ *The Rise of the Robots*,² or *The Fourth Industrial Revolution*,³ other observers proceed with business as usual, suggesting that specialized job trainings and prudent reforms will sufficiently prepare workers for the future.⁴ Among the points of contention here are the scope and rate in which human labor is (and will be) replaced by machines. Regrettably, the inflated predictions in this regard not only entice certified technologists⁵ and neoclassical economists⁶ but also increasingly sway commentators on the left who argue for ramping up the proliferation of network technologies and accelerating the rate of automation as indispensable components in preparation of a postcapitalist society.⁷ However, under current conditions of relentless cultural demands for self-optimization, ubiquitous economic imperatives to liquidize personal assets, and almost unrestrained corporate ownership of key infrastructures in communication, mobility, and, importantly, labor itself, the present project cautions that an unhinged project of automation is at once ill conceived and ill fated. Thus, the task at hand is to produce a more detailed and critical account of the nexus work, automation, and futurizing, so as to inform a conversation that not only

¹ Erik Brynjolfsson and Andrew McAfee, *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies* (New York: W.W. Norton & Company, Inc., 2014).

² Martin Ford, *The Rise of the Robots: Technology and the Threat of a Jobless Future* (New York: Basic Books, 2015).

³ Klaus Schwab, *The Fourth Industrial Revolution* (Geneva: World Economic Forum, 2016).

⁴ Robert D. Atkinson and John Wu, "False Alarmism: Technological Disruption and the U.S. Labor Market, 1850-2015," *Information Technology & Innovation Foundation* (2017), 1-28.

⁵ Exemplary in this regard are notable business leaders like Tesla CEO Elon Musk and Microsoft founder Bill Gates. While Musk considers a Universal Basic Income (UBI) an inevitable ramification of automation processes, Gates meanwhile suggests governments impose taxes on robots replacing humans.

⁶ Arun Sundararajan, *The Sharing Economy: The End of Employment and the Rise of Crowd-Based Capitalism* (Cambridge: The MIT Press, 2016).

⁷ See Nick Srnicek and Alex Williams, *Inventing the Future: Postcapitalism and a World Without Work* (London: Verso, 2016); Paul Mason, *Postcapitalism: A Guide to Our Future* (New York: Farrar, Straus and Giroux, 2017); Peter Frase, *Four Futures: Visions of the World After Capitalism* (London: Verso, 2016); Jeremy Rifkin, *The Zero Marginal Cost Society* (Basingstoke: Palgrave Macmillan, 2015).

challenges the drivers and advocates of these automated futures, but also intervenes in discourses that too readily endorse the premises of respective projects.

For as it stands, automation unfolds unevenly across various domains, exacerbating precarity for workers, while stealthily increasing wealth and power for service providers and investors. Although automation takes place virtually in all industries, these unequal trajectories unfold perhaps most prominently in the so-called gig economy, where firms encourage users to temporarily render their time, labor, and property available to other users. In these highly deregulated markets, some emerge as employers, entrepreneurs, and coders, while others are transformed into logistical assets, completing the codes of the new modes of mobility, housing, and online microlabor. This project, then, illustrates the modes by which the gig economy obscures information asymmetries and vertical power relations while fabricating the cultural conditions that enable an emergent class of robotized workers to perceive itself to be as entrepreneurial as the platform providers it imitates.⁸ I argue that the confidence placed in current forms of automation, especially in the context of digital technologies, is severely misplaced, as it not only conceals the informalized human labor required to maintain these systems but also ignores disconcerting cultural trends. The gig economy resembles a larger trajectory of increasing power of providers of quasi-automated services while workers—rendered earners or users—experience considerable reductions in employment-related rights and privileges. Critically, centralization, monopolization, and vertical integration on one side and precarization, informalization, and displacement on the other appear to jibe fairly well with conceptual strands of libertarianism, techno-utopianism, and entrepreneurialism assembled under the umbrella of an updated version of the American Dream. In that sense, the gig economy also performs cultural work that normalizes a work culture in evermore spaces of living.

Narrowing the scope of the discussion on automation applications and widespread outsourcing and crowdsourcing practices to the gig economy calls for further clarification on

⁸ Originally, the word robot translates to “forced labor” and is derived from Czech playwright Karel Čapek who coined the term to describe the material conditions in early 20th century factories. In his play *Rossum’s Universal Robots* (1921), two characters wonder: “What sort of worker [...] is the best from a practical point of view? Perhaps the one who is most honest and hardworking? No, the one that’s the cheapest. The one whose requirements are the smallest.”

the parameters and perimeters of the project. To be clear, the integration of individuality, leisure time, and personal property into online and offline marketplaces has precedents in many conventional economies, as section three purports to show. Likewise, the current spotlight on the gig economy hardly corresponds to quantitative data regarding its scope. Depending on definition and metric of analysis, estimates suggest that gig economy workers make up only between 0.5% and 16% of the United States workforce.⁹ Compared to the recent hype, the share of people actually earning income via “side hustles” such as Uber, Lyft, Airbnb, TaskRabbit, Instacart, and other startups remains relatively low.¹⁰ Economist Lawrence Mishel therefore claims that “in any conference on the future of work, Uber and the gig economy deserve at most a workshop and not a plenary. [...] if one considers that discussions of the future of work should focus on how people will earn their living.”¹¹ If the limited scope of the gig economy should certainly be considered, such views nonetheless remain ignorant of closely related concerns. Specifically, the gig economy functions as a reasonable deterrent for unemployed workers to find conventional jobs, thus knocking down the labor participation rate and in turn skewing overall employment statistics.¹² To the extent that gig economy and contracting practices increasingly overlap, the fact that Google now contracts more workers than it employs indicates the urgency of the matter.¹³ Numbers aside, the ways in which Uber and other startups inscribe an ethic of hustling into all aspects of life is likely to escape a quantitative analysis. In particular, the gig economy must be taken seriously as a manifestation of a clear trajectory toward precarious, on-demand, and informalized work relations.

⁹ Lawrence F. Katz and Alan B. Krueger, “The Rise and Nature of Alternative Work Arrangements in the United States, 1995-2015,” https://krueger.princeton.edu/sites/default/files/akrueger/files/katz_krueger_cws_-_march_29_20165.pdf.

¹⁰ See, for example, Danny Vinik, “The Real Future of Work,” *Politico*, January 2018, <https://www.politico.com/magazine/story/2018/01/04/future-work-independent-contractors-alternative-work-arrangements-216212>.

¹¹ Lawrence Mishel, “Uber and the labor market – Uber drivers’ compensation, wages, and the scale of Uber and the gig economy,” *Economic Policy Institute*, May 15, 2018, <https://www.epi.org/files/pdf/145552.pdf>.

¹² Eric Sherman, “Sure, Unemployment Went Down – Because More People Left The Workforce,” *Forbes*, May 5, 2018, <https://www.forbes.com/sites/eriksherman/2018/05/05/sure-unemployment-went-down-because-the-number-of-people-working-did/#2f83a192408b>.

¹³ Ellen Sheng, “Silicon Valley’s dirty secret: Using a shadow workforce of contract employees to drive profits,” *CNBC*, October 22, 2018, <https://www.cnbc.com/2018/10/22/silicon-valley-using-contract-employees-to-drive-profits.html>.

The position developed in the following pages promotes a substantial shift toward a qualitative emphasis on the condition of work in a rapidly gigifying economy, which I consider a necessary intervention in discourses on the future of work—a field otherwise dominated by technologists and neoclassical economists and their often reductive research models. The project takes for granted that neither projections based on the latest technological applications nor predictions merely drawing from quantitative employment data constitute objective methodological tools. While often hailed as neutral, such means function as ideological constructs oblivious to social, political, and cultural contingencies. Regrettably, the nuances captured in qualitative approaches continue to take a back seat to heroic pledges of job creation and effectively publicized reminders about personal responsibility. On a basic level, I hope that the project contributes to critiquing the narrative underlying such anachronistic discourses. The gig economy may not (yet) be a significant trend in terms of employment statistics, but it certainly speaks to the cultural reproduction of a work ethic in the guise of continuously innovative earning.

More concretely, I intend to intervene in discourses calling for a radical break with traditional employment structures, emphases on individual productivity, the pervasive ethos of self-reliance, and other commonplace impositions of contemporary capitalism. Such demands have crystallized as key components of a so-called postcapitalist program that, at its core, champions an equalitarian and socialist appropriation of modern technology. Though I consider the above challenges to be part of a necessary critique, I argue that the characteristic tenets of postcapitalism tend toward a problematic imitation of the techno-utopian and *laissez-faire* assumptions that have been instrumental in establishing the status quo. I suggest that postcapitalism gravitates toward an abstract notion of technological progress, thus short-changing in its analysis the proliferation of corporate applications and the corresponding experiences of workers. As a result, appeals for postcapitalist futures ring hollow with respect to the techniques entangling workers in intricate, yet seamless interfaces. These entanglements are evident in many sociotechnical environments but are particularly insidious in the gig economy where workers are regulated, optimized, and equipped with an enterprising subjectivity. In short, there is a peculiar inconsistency in the way postcapitalism assumes that

workers are but cogs in the machine, exploited by platform providers and their high-tech means of communications and logistics while, at the same time, the same technologies are somehow alleged to hold the key to a future free from toil. Instead, to untangle contemporary forces of production, more attention must be paid to the ways in which gig workers are rendered active, mobile, and quasi-autonomous. Likewise, to advance a more nuanced analysis, it is imperative to reconstruct how seamlessly mandates to productivity percolate through to all areas of life.

To theorize the social dimension in the gig economy's value accumulation, as it automates the production of an emerging freelancer class, I suggest revisiting the figure of the milieu. While the pervasive entrepreneur narratives doubtless serve an ideological function, it could be argued that the gig economy represents not merely a closed feedback loop between providers and users but rather constitutes an environment—a milieu—that generates subjectivities beyond a top-down power structure. I contend that the milieu is best understood as a context in which meaning is continuously produced among a sense community, though never independently from corporate interests and the influences of machinic interfaces. Depending on the context, the milieu works to subjectivate freelancers along the lines of mobility, liquidation, and communicability. The milieus in the gig economy exist in online forums, support groups, and various other digital spaces that facilitate the exchange of information, the development of browser add-ons, and new ways of rationalizing the means and relations of production. From these contexts emerge experiential insights beyond simple truths and exact metaphors. While some tales on the gig economy paint a rather bleak picture of exploitation and indentured servitude, a more comprehensive account on the production of meaning in these milieus stands to inform conversations on the future of work.

Ultimately, the project gestures toward a kind of twilight of automation where work is never completely replaced but rather permanently displaced and culturally mediated. The conclusion indicates that the gig economy gravitates toward an intensified taskification of economic activity and is, thus, anathema to postcapitalist dreams, in that new forms of work, and accompanying ideological justifications for work, continue to emerge despite technological advances that postcapitalists argue should render labor superfluous. At the present moment, it is more important to critically investigate how it is that economic activity, in all its variations,

persists, rather than conjuring up futures without work. I draw this conclusion from exploring three distinct gig economies, which I present as milieus in which technology unfolds not apart from human relations but always as an embodied social force. Concretely, I examine the sociotechnical dynamics in the popular ride-hailing application Uber, the hospitality service Airbnb, and the online microlabor platform of Amazon Mechanical Turk (AMT) using a hybrid methodology of political economy (outlining the corporate networks) and digital ethnography (detailing the worker perspective). Despite the limited representativeness of the sample group, the analysis allows for useful generalization regarding the unfolding relationship between automation and labor. Integrating theoretical and experiential findings, I conclude by gesturing toward alternative ways of thinking about the future of work.

2. A Brief History of Automation

In the context of delineating forces of production and their utopian potential, it is crucial to note that the gig economy hardly represents the first time in history in which automation proliferates as an economic force and a cultural pretense. Since the first industrial revolution in the early to mid-19th century, automation has played an ambiguous role, at once threatening to make workers redundant in the short term and promising to provide a level of abundance that led some observers to announce the inevitable ushering in of a socialist future.¹⁴ Though previous waves of automation were mostly associated with big machinery replacing human labor, the term also always performed cultural work. Not unlike today, then, in promising the advent of dizzying economic productivity and, particularly in the context of the second industrial revolution, unprecedented levels of consumer convenience, automation mobilized support in technology and the mostly corporate forces that implemented it. In this view, automation needs to be grasped as a particular manifestation of progress, a powerful narrative that assumes the incremental advance toward a prosperous future in which the human species realizes itself through the pursuit of continued technological innovation. Indeed, if there ever

¹⁴ To be sure, while engineering “wizard” Charles Proteus Steinmetz believed that socialism and a future of leisure spelled the fate of humanity, socialist science fiction writer H.G Wells, for instance, cautioned that “automated production might [...] allow a powerful elite to take control of society.” See David E. Nye, *Electrifying America: Social Meanings of a New Technology* (Cambridge: The MIT Press, 1997), 185.

was one constant in the history of automation, it would be the always imminent dawn of a fully automated future. As technology critic Richard Barbrook puts it aptly, “the hi-tech utopia is always just around the corner, but we never get there.”¹⁵ Part and parcel of a progress-oriented narrative, automation is usually placed into a linear model of history in which large-scale transformations in the means and forces of production and reproduction are expressed in terms of ages, stages, waves, or revolutions.¹⁶ Useful at times, such neat significations (like the aforementioned “Second Machine Age” or “Fourth Industrial Revolution”) nonetheless obscure the complexities of such industrial shifts and, importantly, belie the social fact that automation primarily displaces, rather than replaces labor. Likewise, the use of such definitive terminology suggests that these ages, stages, or revolutions are completed and, importantly, implies a determinism that repudiates the social, cultural, and political contingencies that helped propel these projects in the first place.

To emphasize the critical thrust of the discussion, it is thus necessary to contextualize the ongoing developments in the gig economy as a historical and material continuation of the story of work in modernity. Even in a North American context alone, such a comprehensive account on the preconditions of the gig economy, spanning a detailed analysis of previous shifts in the forces, means, and relations of production, the (often violent) reorganization and financialization of labor, and the concomitant changes in the realms of law, politics, and culture extends beyond the scope of the present project. Nevertheless, this introduction purports to highlight some milestones in what amounts to a brief history of automation. Rather than suggesting that history knows but one fixed account of automation, I delimit some developments in political economy and technology not merely as detached moments but rather as modes of (de)subjectivation and manifestations of mutable social meaning. Despite automation materializing differently according to context, automation processes seldom benefit anyone more than the owners of the automating machines. Moreover, the prospects of automatable labor often function as justifications of social and political hierarchies in capitalist societies. To formulate a more nuanced critique, it is thus advisable to tell the story of automation not merely as a series of historical facts but rather to account for the roles labor

¹⁵ Richard Barbrook, *Imaginary Futures: From Thinking Machines to the Global Village* (London: Pluto, 2007), 3.

¹⁶ See, for example, Manuel De Landa, *A Thousand Years of Nonlinear History* (New York: Zone Books, 1997).

played in the designs of industrialists and the subjectivities coinciding with shifting forces of production.

Rather than simply focusing on the amounts and percentages of jobs that are undeniably lost in these processes, more attention must be paid to how automation acts as force of displacement, thus affecting subjectivity. In other words, automation constitutes a form of production that crucially plays out in conjunction with workers rather than in distinction from them. To the extent that automation practices precede the current gig economy, a brief digression to previous industrial revolutions is instructive. Already in the late 1850s, Karl Marx understood that despite the impressive capacities of steam engines and heavy machinery, automation encapsulates an entire network of human and nonhuman factors, rendering overly simplistic and deterministic positions untenable. If certainly focused on the technical aspects of production, Marx's account on automation in the *Grundrisse*, for instance, is neither reducible to the idea of machines fully replacing manual labor nor to the idea that machines alone contain the scope of automation. Instead, Marx presciently writes,

Once adopted into the production process of capital, the means of labor passes through different metamorphoses, whose culmination is the *machine*, or rather, an *automatic system of machinery* [...] set in motion by an automaton, a moving power that moves itself; this automaton consisting of numerous mechanical and intellectual organs, so that the workers themselves are cast merely as its conscious linkages.¹⁷

Marx's foresight consists in the analysis of a capitalist integration of human intelligence and machines into a productive system that at once depends on human labor as its source while necessarily eliminating it. In the spaces between, meanwhile, work undergoes significant transformations that have little to do with the extenuating terminology of progress. In many cases, automation coincides not only with drastic declines of workplace quality but also with social and cultural shifts concerning the meaning of work-related activities.

In the first decades of the 20th century, the Marxian notion of an "automaton consisting of numerous mechanical and intellectual organs" would gain traction as part of a shift emphasizing the productive capacities of the economic machine while regarding human

¹⁷ Karl Marx, Friedrich Engels, and Robert C. Tucker, *The Marx-Engels Reader* (New York: Norton, 1972), 278-9.

contribution to the production process as an increasingly replaceable component. The image of a (human) component aiding the processes of mass production appropriately captures the contemporaneous rationale of industry leaders, whose empires rested on financing heavy machinery and, importantly, on meticulously organizing the activities of workers. While it may be the case that the scale of production was massively ramped up due to technical inventions such as the assembly line and other material parts, the real automation, so to speak, occurred in the guise of scientific optimization techniques, most prominently in the context of Taylorism.¹⁸ The widespread implementation of Taylor's principles required rigorous installment practices and a cultural ethos, which unreservedly embraced the application of scientific management to the forces of production. In the words of labor historian Anson Rabinbach,

The Taylor system was concerned with determining the most efficient method of accomplishing each task in the labor process and with the division of all tasks on the shop floor into replicable units. The Taylor system was also a method of linking wages to productivity through "time and motion" studies, keyed to the speed and output of the individual worker.¹⁹

Taylorism, as the passage suggests, empowered industrialists, managers, and engineers to regulate the entire production process, manipulate and exploit workers, and undermine the influence of unions in the name of economic output.

As an economic project and an intellectual discourse, Taylorism highlighted the precariousness of labor to such a degree that not only critics of capitalism expressed concern. Especially, the extent to which scientific management evacuated meaning from work proved a social problem too severe to ignore. In many ways, Fordism emerged as the industrialists' response to the discontent wrought by Taylorism. Accordingly, Fordism "was based on predetermined work norms, higher wages, and on well-organized plant policies designed to discourage class solidarity and encourage loyalty to the firm. [...] Above all, Fordism divorced

¹⁸ See, for example, Daniel Nelson, *Frederick W. Taylor and the Rise of Scientific Management* (Madison: University of Wisconsin Press, 1980).

¹⁹ Anson Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity* (New York: Basic Books, 1990), 239.

social ‘happiness’ from the workplace by promoting consumerism and leisure time activities.”²⁰ In short, Fordism granted workers more stable conditions and loosened the connection between output and wages.²¹ Moreover, Fordism established a culture in which workers would be compensated for the labor through allocated leisure time and resources. Fordism also marked a significant step toward a pervasive consumer culture, not merely by producing consumer goods but also by fabricating a consumerist worker subjectivity. Under Fordism workers could count on the firm to facilitate their recreational pursuits in the contexts of a nuclear family and a budding entertainment industry. This is not to suggest that the siege of (organized) workers and unions ended with the rise of Fordism. Rather, industrialists and technologists considered it more effective to portray organized labor as antithetical to progress and, by extension, lacking a vision that included the whole of society.

The World’s Fairs of the early 20th century capture the complicated relationship between technological progress and displacement of labor. Organized by industry leaders and government officials, the fairs served distinct political and cultural purposes, namely to promote the corporate sponsors of the future. As Barbrook notes,

Inside the 1939 Futurama pavilion, the stands showing off General Motors’ brand-new automobiles played a supporting role to the huge diorama which portrayed the corporation’s ambition to turn the majority of the US population into suburban-dwelling, car-owning consumers. This showcasing of awe-inspiring machines and innovative products was designed to win converts for the ruling elite’s hierarchical concept of society.²²

Amidst the Great Depression, the prospect of a future abundant with technological conveniences caught the attention of a wide audience. Then and now, it could be argued that commentators linking economic downturns to the burgeoning forces of production, did more to inflate the public perception of industries, than they contributed to a critical debate. In other words, there is a vulgar subtext to, say, John Maynard Keynes’ notion of “technological unemployment,” which he attributed to the “discovery of means of economizing the use of

²⁰ Ibid., 282.

²¹ As Nye (1997: 362) observes, “Ford [...] continued to develop ‘technical control’ over the workers’ rate of production, most obviously by varying the speed of the assembly line.”

²² Barbrook, *Imaginary Futures*, 33.

labour outrunning the pace at which we can find new uses for labour.”²³ Even such dark forebodings and cautionary tales contain implicit praise for the productive capacities of industrialists and therefore serve as grist to their mills. The makers of automobility, in particular, stood to gain immensely from a crude futurism, which was unmistakably coded into the fairs’ modernist presentation of technoscientific progress. Grandiose advertisements by Ford, GM, and Chrysler essentially sold corporate visions as an inevitable, natural continuation of transportation history.²⁴ Behind the scenes, however, the makers of the first machine age marginalized organized labor from public view in efforts to simulate unanimous support for their project.²⁵ The politics of the fairs intensified the approach by which firms would handle the question of labor as it arose before and during the Depression in that industrialists not only curbed the organization of labor but sought to eliminate it entirely. After the war, the push toward creating “suburban-dwelling, car-owning consumers,” as noted by Barbrook, became more appealing due to an enormous economic boom. Despite this upswing and the further turn toward a consumer society, the postwar years witnessed a renewed controversy around automation.

By the late 1950s, the rise of computerization, cybernetics, and robotics conjured up increased concerns about the future of work, as observers deemed the changes in industry as qualitatively distinct from earlier modes. Nevertheless, the new technologies yielded familiar predictions: “For the optimists, the worker liberated from the manual labor would regain a universal ‘intelligence’ while for the dystopians, the disappearance of the skilled worker meant long periods of unemployment and universal alienation.”²⁶ Once again, automation was linked to what turned out to be the most severe economic downturn since the Great Depression. By 1958, General Electric cut 25,000 and General Motors 28,000 positions while the automaker

²³ John Maynard Keynes, “Economic Possibilities for our Grandchildren,” *Essays in Persuasion* (1931), 321-332.

²⁴ See, for example, Robert Rydell, *World of Fairs: The Century-of-Progress Expositions* (Chicago: University of Chicago Press, 1993).

²⁵ See Daniel Hard London, “Outside the World of Tomorrow: New York Labor and the Public Sphere in the 1939-1940 New York World’s Fair,” *Journal of Urban History* 40, no.6 (2014), 1011-1027.

²⁶ Rabinbach, *The Human Motor*, 297.

Studebaker-Packard defaulted on over 3,000 jobs.²⁷ At the time, President Dwight D. Eisenhower rejected the fear over automation, arguing instead that “one of the great things that seems to have happened over the generations [...] has been that as the nation finds ways to do more work with fewer manhours there always springs up more work to do.”²⁸ Not surprisingly, industry leaders were in support of a view that gave them license to implement a variety of automation technologies across their respective divisions. Thus, “in 1954 GE became the first company to use an electronic computer for regular data processing, when it bought a UNIVAC I to handle accounting, manufacturing control and planning at its appliance division in Louisville, Kentucky.”²⁹

A few years later, however, when the International Union of Electrical Workers unearthed that GE had used foreign competition as a pretext for automating at a faster rate while also investing into the Japanese company Toshiba, it became apparent that automation was but one of several factors contributing to the problem of work. The implementation of automating technologies became a matter of international political economy, government intervention, and shareholder value. Compared to earlier debates, then, work was considered less in connection to actual production processes and more in terms of an abstract (national) economy. In a moderate response to the ubiquitous specter of automation, the director of the International Labour Organization (ILO) David A. Morse wrote,

Automation, in widening the need for labor mobility, is likely to widen the need for financial resources to enable workers to respond to changing opportunities. This means attention to unemployment benefits, dismissal pay, moving allowances, training allowances, and other things susceptible of underwriting reemployment rather than subsidizing unemployment.³⁰

While this perspective underscores the productivist ethos that continued to guide the debate, it is indicative of an era in which work relations were subjected to public scrutiny and largely secured by institutions of the welfare state. If this particular configuration of capital, labor, and

²⁷ Rick Wartzman, “The First Time America Freaked Out Over Automation,” *Politico*, May 30, 2017, <https://www.politico.com/magazine/story/2017/05/30/rick-wartzman-book-excerpt-automation-donald-trump-215207>.

²⁸ “President Deplores Fear of Automation,” *The New York Times*, March 17, 1955.

²⁹ Wartzman, “The First Time America Freaked Out Over Automation.”

³⁰ David A. Morse, “Promise and Peril of Automation,” *The New York Times*, June 9, 1957.

state provided reasonable protection from sustained exploitation, as it occurred under Taylorism, labor was precarious in other ways. Specifically, the implementation of computerized automation began to put premiums on the acceleration of capital flows and the flexibility of labor. Rather than replacing the need for labor, automation would again become instrumental in identifying optimal ways for labor to be adjusted in the service of corporate growth.

3. Financialization and Post-Fordism as Precursors to the Gig Economy

While tangible forms of automation such as robotics remain a relevant category in the forces of production, during the 1960s computational, informational, and communicative technologies emerged as integral features of production, consumption, and administration. To further contextualize the gig economy, I now turn to a description of changes in global capitalism by revisiting discourses on post-Fordism and what some commentators call the new capitalism.³¹ If post-Fordism might be particularly useful in thinking about how certain technologies mediate work relations, the new capitalism illuminates effectively the tensions between flexible labor and job-related (self)surveillance. I suggest that delimiting processes of financialization, flexibilization, and informalization establishes a set of preconditions for recent economic developments. As the name indicates, post-Fordism marks a shift from Fordist mass production toward more demand-driven economies including the proverbial intellectual factory, which implies an increasing concern with the provision of services, particularly informational, cognitive, and creative labor. While relevant texts emphasize specifically workers' subjectivity and, in some instances, their potential to resist new factory regimes,³² post-Fordism generally speaks to historical developments by which work-related hierarchies gradually yielded to decentralized structures. Against the background of such structural changes, some post-Fordist thinkers suggest that the proliferation of a cognitive capitalism

³¹ See Richard Sennett, *The Culture of the New Capitalism* (New Haven: Yale University Press, 2006); See also Richard Sennett, *The Corrosion of Character: The Personal Consequences of Work in the New Capitalism* (New York: W. W. Norton, 1999).

³² See Michael Hardt and Antonio Negri, *Multitude: War and Democracy in the Age of Empire* (New York: Penguin Books, 2005).

negates the law of value, thus triggering a transition to a postcapitalist economy.³³ In contrast, others contend that the new means of communication play a crucial role in (re)producing an enslaved subjectivity.

Before I provide a more detailed reading of post-Fordist literature, however, I provide context by discussing how changes in capitalism relate to the formation of the type of self-actualizing, entrepreneurial subjectivity that seems indispensable to the dynamics of the gig economy. One way to contextualize post-Fordism is to juxtapose its somewhat extenuating emphasis on knowledge-based work with a critique of neoliberalism. According to David Harvey, neoliberalism involves practices of “confronting trade union power, attacking all forms of social solidarity that hindered competitive flexibility [...] dismantling or rolling back the commitments of the welfare state [...] reducing taxes, encouraging entrepreneurial initiative, and creating a favourable business climate to induce a strong inflow of foreign investment.”³⁴ In essence, neoliberalism portends that “if markets do not exist [...] then they must be created.”³⁵ While applying a neoliberal critique might comfortably explain various phenomena in the gig economy, such a methodology omits some key features. In particular, there is a risk to interpret the “opportunities for hiring on a temporary basis, using a temporary workforce, flexible hours, and a reduction in the costs of layoffs [while] new communication technologies”³⁶ as merely a structural phenomenon.

Instead, it could be argued along the lines of Luc Boltanski and Eve Chiapello’s work that such shifts are closely linked to the formation of a decidedly flexible and creative worker subjectivity. Comparing management literature in the 1960s and 1990s the authors suggest that “the 1960s project aimed at the liberation of *cadres* and a relaxation of the bureaucracy that developed out of the centralization and growing integration of ever larger firms. The 1990s project was to present itself as a continuation of this process, taking up the themes of anti-bureaucratic struggle and autonomy.”³⁷ Whereas the 1960s saw widespread concerns about job safety, as detailed in the previous section, the 1990s business manuals read as an “apologia

³³ See Christian Fuchs, *Digital Labour and Karl Marx* (New York: Routledge, 2014).

³⁴ David Harvey, *A Brief History of Neoliberalism* (Oxford: Oxford University Press, 2011), 23.

³⁵ *Ibid.*, 3.

³⁶ Luc Boltanski and Eve Chiapello, *The New Spirit of Capitalism* (London: Verso, 2007), xxxviii.

³⁷ *Ibid.*, 68.

for change, risk and mobility replac[ing] the high premiums put on the idea of security.”³⁸ The latter model turns a vice into a virtue by rendering precarity an essential characteristic of redefined productivity, even potentiality. “The new organizations are supposed to appeal to all the capacities of human beings, who will thus be in a position to fully blossom [and] everything will be done to ensure that they attain a better knowledge of themselves, and discover what they are capable of.”³⁹

Similar to this emphasis on thriving workers via precarious economic environments, Karen Ho’s ethnographic study of Wall Street illustrates how investment bankers perform on a daily basis the same practices they disseminate as strategic business advise, thus embodying a subjectivity that realizes itself amidst a sea of uncertainty. As Ho writes,

Recruited from elite universities and represented as “the smartest,” investment bankers enter into a Wall Street workplace of rampant insecurity, intense hard work, and exorbitant “pay for performance” compensation. Forged in these experiences is a particular investment banker habitus which allows them to embrace an organizational model of “employee liquidity” and to recommend these experiences for all workers.⁴⁰

Such practices, in many ways, are the precursors to the current gig economy. That is, the articulation of structural marginalization, overwhelming individual debts, and stifling economic uncertainties guised in significations of flexibility, choice, and self-actualization hardly constitutes a novelty. Specifically, the notion of liquidity is of interest, as it describes the (potential) conversion of assets into cash (or equivalents). Ho uses the term to emphasize the expendability of labor as a crucial component of what Zygmunt Bauman coins *Liquid Modernity* in which “the reproduction and growth of capital, profits and dividends and the satisfaction of stockholders have all become largely independent from the duration of any particular local engagement with labour.”⁴¹ Moreover, Ho’s research is relevant to understanding how the gig economy institutes a mandate of liquidity on earners’ (future) time and property. Importantly, Boltanski, Chiapello and Ho, each in their own way, demonstrate that the shifts in the

³⁸ Ibid., 89.

³⁹ Ibid., 90.

⁴⁰ Ho, *Liquidated*, 11.

⁴¹ Zygmunt Baumann, *Liquid Modernity* (Cambridge: Polity Press, 2010), 149.

conceptualization of labor are not simply the result of transcendent notions of capitalism or neoliberalism, which are often presented as a kind of natural force, but are in fact contingent on sustained daily practices. If these studies apply to distinct sets of business literature and spaces on Wall Street, respectively, they nonetheless show that flexibilization and liquidation are not merely abstractions but recurring practices that generate a peculiar blend of informality and surveillance.⁴²

Beyond these general remarks, I now turn to a comparative reading of two post-Fordist projects, to steer the discussion toward a method apt to engage with the case studies in the remaining chapters. The Italian politico-theoretical movement of workerism (or autonomism) foreshadows the subjectivities that emerge from changes in forces and relations of production. Notable figures in this context are theorists Paulo Virno and Maurizio Lazzarato. Virno's diagnosis of post-Fordism departs from an experience of the world in which "the coupling of the terms public–private, as well as the coupling of the terms collective–individual, can no longer stand up on their own, that they are gasping for air, burning themselves out."⁴³ Accordingly, Virno is interested in the implications for the precarious subject, whose experience consists of a "servile virtuosity, exploitation of the faculty of language, [and an] unflinching relation to 'the presence of others.'"⁴⁴ This sense of immediacy to the external world—in part wrought by the withering welfare state, in part formed by an imposition to be nomadic and opportune in search for labor—has Virno consider the post-Fordist subject as quasi-homeless. Virno stresses that social attributes, modes of "virtuosity," amount to a kind of script-less potential, which, expressed in a general intellect, offer productive means to forming far-reaching solidarity. Precisely from this notion of virtuosity Virno derives the optimism explicit in such expressions as "cognitive workers" or "creative luminaries." Unlike orthodox

⁴² In this view, the gig economy also exemplifies sociotechnical mechanisms otherwise understood in the context of urban postcolonial studies concerned with struggles of socioeconomic marginalization and gentrification. If the previous section addresses the lure of newness proliferating in the discourses on automation, referencing the theme of informality curbs a certain hubris inherent in the representations of the gig economy as a decidedly Western, perhaps even middle class phenomenon. In a sense, the extent to which gig economy providers generate (and capitalize on) informalized labor markets, echoes the ways in which economies partially function in postcolonial metropolises. See, for example, Ravi Sundaram, *Pirate Modernity: Delhi's Media Urbanism* (New York: Routledge, 2010); Ananya Roy, "Urban Informality: Toward an Epistemology of Planning," *Journal of the American Planning Association* 71, no. 2 (2005).

⁴³ Paolo Virno, *The Grammar of the Multitude* (Los Angeles: Semiotext(e), 2004), 24.

⁴⁴ *Ibid.*, 68.

interpretations of Marxism that consider the primary modes of production embodied in static machinery and vertical power relations, Virno enunciates a primacy of creative power against the background of networked production and widely distributed power structures.

Crucially, for Virno the compounding of formerly distinct spheres renders paramount socialities such as language, creativity, and demeanor. Virno's use of these categories, if perhaps unduly enthusiastic, touches on some finer distinctions between the various representatives of the gig economy to be discussed. Since not all gig economies are created equal, some social features—as Virno would have it—are more salient in certain contexts than in others. For example, the mode of affect in the marketplaces of Uber and Airbnb is of a different variety than the kind sociality involved in AMT where person to person interaction is almost completely suspended. To be sure, this does not mean that there is no affect involved in the AMT labor market, as I shall show, only that affective relationships unfold mostly through alternative channels. At the same time, Virno's concept of virtuosity needs to be understood in a broad sense as both the potential and realization of "cognitive and linguistic talents."⁴⁵ Ultimately, communicative and affective virtuosity correspond, at least for this theorist, to an irreducible excess of knowledge and skill that, in turn, entails an unprecedented promise for liberatory social forces. In this view, current gig economies, not unlike the decentralized, intellectual factory, might even be theorized as possible sites of social transformation—an optimistic outlook, to say the least.

Despite its optimism regarding implicit and explicit language faculties, Virno's project nonetheless implicates corporeality and vitality in the processes of post-Fordist labor relations and, thus, connects to the theme of liquidation as previously outlined. Specifically, Virno theorizes the temporal implications for labor under post-Fordist conditions, as he notes, "Where something which exists only as *possibility* is sold, this something is not separable from the *living person* of the seller. The living body of the worker is the substratum of that labor-power which, in itself has no independent existence."⁴⁶ Borrowing from discourses on biopolitics, Virno's analysis addresses the management of bodies through a kind chronopolitics. Such a biopolitical dimension is relevant given the gig economy's undeniable business

⁴⁵ Ibid., 42.

⁴⁶ Ibid., 82.

of selling possibilities as actualities, particularly the possibilities in demand for urban mobility (Uber), global hospitality (Airbnb), or digital data labor (AMT). Indeed, commodifying possibilities in the form of projected labor or resources marks a key component in today's gig economies. Accordingly, workers' bodies, properties, and availabilities become variables to be directed strategically toward optimal network coverage. To some degree, then, Virno's analysis anticipates experiences for gig workers of all traits, as more and more of life's domains become subject to the corporate management of potentialities by way of smart technologies. As a result, decisions about navigating daily routines become increasingly interlinked, automated, and prefigured.

Despite entertaining a rudimentary critique of commodified potentialities, however, Virno's emphatic notion of a cognitive worker underestimates the extent to which corporations have positioned themselves in the most intimate spheres of people's lives. In other words, Virno's emphasis on social, linguistic, and intellectual potentials only illustrates one part of the equation, while the ubiquity (and perhaps inevitability) of human interfacing with machines remains largely absent in his project. McKenzie Wark therefore questions whether post-Fordism offers much of an analytical framework to begin with, suggesting instead, "The state may be in crisis more because of technical infrastructure that assumes some of its functions than because of language-based labor."⁴⁷ Consequently, Virno's useful but limited toolkit consisting of employment-related uncertainty, an excess of language and skill, and a phenomenological nomadism, may need to be complemented with a more robust view on machinic components and a critique of the pseudo-entrepreneurial individual. To fully discard Virno's emphases on social and communicative faculties, however, would be to declare a significant dimension of today's gig economies as inconsequential. In particular, support groups forming mainly in online forums where participants exchange technical information to navigate gig economies, realizes a certain subversive subjectivity that Virno might find compelling.

Meanwhile, Virno's contemporary, Maurizio Lazzarato, rejects the notion that a virtuosic subjectivity alone adequately describes the post-Fordist condition, gesturing instead

⁴⁷ McKenzie Wark, *General Intellects: Twenty-One Thinkers for the Twenty First Century* (London: Verso, 2017), 63.

toward an “indebted subjectivity.”⁴⁸ Lazzarato develops the idea of “machinic enslavement,” that is, a mechanism by which post-Fordist subjectivity is always already constituted by human and nonhuman assemblages.⁴⁹ According to this skeptical account, processes of “desubjectivation” undermine precisely the purportedly “pre-individual” or “supra-individual” features Virno celebrates as potentially transformative. In these assemblages, the human is more part than subject, as human parts are organized by nondistinctive semiotics. In the same vein, Felix Guattari argues that “capitalist power, at the economic level, is not discursive; it only tries to master the a-signifying machines and rotate the wheels of the system. [...] One never knows when or where capitalism ends.”⁵⁰ Lazzarato’s wording here might be somewhat misleading given that machinic enslavement, via Guattari’s “a-signifying machines,” does not really suggest that humans are slaves to machines, as perhaps dystopian science fiction would have it. Rather, it implies that “information precedes signification,” a formula that amounts less to a determinism than a fundamental incongruence between data and signification.⁵¹ Appropriating insights from critical media studies, this perspective grapples with the likelihood that machines, especially telematic devices, are never quite accessible in their entirety. To the extent the gig economy transmits almost all information to users via screens, the notion that opacity is, in a sense, built into the system might not be farfetched.

Thus, Lazzarato has little faith in the idea of redemptive subjectivities, especially since crises of political economy and subjective economy increasingly coincide in that responses to crises are routinely framed in terms of “the economy” and other formulations lacking any substantial subjective meaning. Such abstractions are reminiscent of the “invisible hand” dogmas repeated by neoclassical economists, whose approach of non-intervention is surprisingly compatible with austerity politics in that the individual, once contorted into a free agent, is ultimately responsible for its own success. Lazzarato considers the implications of what happens when an ontology of future entrepreneurs is cast on the impoverished existence of a post-Fordist class: “The autonomy, initiative, and subjective commitment demanded of

⁴⁸ See Maurizio Lazzarato, *The Making of the Indebted Man* (South Pasadena: Semiotext(e), 2012).

⁴⁹ Maurizio Lazzarato, *Signs and Machines: Capitalism and the Production of Subjectivity* (South Pasadena: Semiotext(e), 2014), 7.

⁵⁰ Felix Guattari in Gary Genosko, *Felix Guattari: A Critical Introduction* (London: Pluto, 2009), 105-6.

⁵¹ *Ibid.*, 106.

each of us constitute new norms of employability and, therefore, strictly speaking, a heteronomy. [...] the injunction imposed on the individual to act, take the initiative, and undertake risks has led to widespread depression.”⁵² Entrepreneurial subjectivity and indebted subjectivity are two sides of the same coin, rendering visible the necessary social conditions for gig economies to succeed. Put differently, gig economies hinge on the existence of an already indebted and thus necessarily flexible subject. Meanwhile, critical positions are marginalized by the ubiquitous rhetoric of taking initiative, shifting the liability of “employability” irrevocably to the individual and coupling the latter to a machinic environment as an ever-present way out of an allegedly personal malaise.

Whereas Virno merely points to a shift from industrial machinic modes of production to a primacy of creative, cognitive, and communicative skills, Lazzarato intervenes that contemporary relations of production remain machinic in an important sense, since “unlike in Marx’s time, machinisms have invaded our daily lives; they now ‘assist’ our ways of speaking, hearing, seeing, writing, and feeling by constituting what one might call ‘constant social capital.’”⁵³ Speaking emphatically of “pre-individual” capacities somewhat anachronistically overlooks that technologies saturate everyday experiences. If Lazzarato’s insistence on the necessarily enslaving character of “dehumanizing” assemblages certainly remains debatable, the claim that such hybrid machinisms proliferate widely seems indisputable. In the context of the gig economy, the degree to which workers navigate their social realities via such sociotechnical machinisms, is certainly intensified. The fact that gig economy interfaces closely resemble designs known from supposedly non-economic contexts, such as games or social media, only confirms Guattari’s claim that “one never knows when or where capitalism ends.” Lazzarato rightly rejects Virno’s overreliance on speech and language, though both ultimately miss that the ostensibly “pre-individual” features are continuously produced in the flows of gig economies. Despite the dependence on the often opaque technological devices and logics, the formation of distinct social groups, even sense communities, persists. The extent to which these groups align with (or deviate from) dehuman, autonomous, or enslaved subjectivities must be assessed in concrete contexts, thus calling for ethnographic insights. As remains to be seen, the

⁵² Ibid., 9.

⁵³ Ibid., 13.

gig economy features complex spaces in which communication occurs precisely through machinic enmeshment. Each context spawns a multitude of adjacent networks through which users make sense of the difficulties staged by the hurdles put in place by providers. These spaces represent neither contexts of liberatory communication, nor closed systems of capture so that a more dynamic methodology is needed.

4. Insufficient Metaphors and the Efficacy of Discourse

Unlike more traditional forms of commerce in retail, transportation, hospitality, and other industries, gig economies accumulate wealth primarily by enabling participants to temporarily liquidate their assets such as material property, physical labor, or intellectual services, to service other clients in the same network. Strictly speaking, firms such as Uber, Lyft, and Airbnb merely act as mediators in otherwise peer-to-peer arrangements, although a more critical lens would certainly take issue with such a technical description. Concretely, gig-economy firms provide free mobile applications, which subsequently function as platforms that connect users, facilitate agreements, monitor progress, finalize payments, and encourage ratings and reviews that in turn determine the likelihood of future transactions. As the financial appeal of these markets encourages millions of participants to rethink their relationships with their personal belongings and allocation of time, benevolent expressions such as *gig* and *sharing* appear to have irreversibly colonized the popular vernacular. Terms implying the altruistic proliferation of favors, however, belie the economization of more and more life worlds now subject to business in the gig economy. Likewise, despite the implicit horizontality and beneficence of concepts such as *platform* and *peer-to-peer*, there is no question that the communitarian ethos built into these networks performs a metaphorical function that conceals the histories, livelihoods, and power relations at stake.

After all, how people come to know technology matters a great deal, as epistemology corresponds to subjectivity and social practices. Discourses, then, have irresistible social and political purport. On that note, some common misconceptions about the gig economy need to be clarified before moving on to exploring concrete sites of gigified exchange. The unfortunate fact of the matter is that all signifiers currently used to describe these emerging economic

modes prove inadequate, as they misrepresent the actual dynamics through euphemisms of sharing, platforms, on-demand, collaboration, and gigs. As inappropriate as such terms might be, rather than simply dwelling on their insufficiencies, I demonstrate the efficacy of discourses and the continuous cultural work that occurs to sustain them. The word *gig*, for instance, invokes a popular cultural ethos of freelance work, which cleverly turns the need for a job into a flexible offer, thus fabricating a veil of entrepreneurialism. In other words, gigs are rendered voluntary projects in the context of a work environment that has seamlessly adapted to an ostensibly decentralized and transient world, signifying a sense of freedom from work-related hierarchies and responsibilities. Casually speaking, instead of taking orders from 9 to 5, workers become their own boss able to distribute their resources according to market dynamics and personal preferences. Certainly, the inflection here is somewhat inflated, since for many participating in the gig economy is less of a choice than a consequence of widespread economic decline in tandem with rising automatability. In my view, the freelance connotation inherent in the gig economy, however, is the most difficult aspect to dismiss. To the extent that I want to take this meaning seriously on a conceptual level, the *gig economy* is the default expression for the project.

While *gig economy* is the term of choice in these pages, another widely used denomination is the so-called *sharing economy*. The main reason for the proliferation of this designation might be that the phenomenon of random strangers sharing, for example, their cars to escort one another somehow seems deserving of its own expression, almost as if to convey a cultural paradigm shift. After all, the idea that ride-hailing services such as Uber and Lyft could gain such enormous traction would have doubtless seemed peculiar to an observer from the recent past. From a cultural perspective, the currency of the term *sharing economy* has a lot to do with a transition toward potentially profiting from one's immediate possessions, be it a vehicle or available space. Given this commonplace perspective, it is difficult to debate the usefulness of the concept. From a purely technical vantage point, however, the sharing economy constitutes an misnomer, since sharing normally denotes a generous act outside the

realm of financial transactions and for-profit exchange.⁵⁴ As it stands, frictionless payment methods and efficacious rating systems are firmly built into the applications of all scalable sharing economies, thus facilitating practices that are perhaps better described as renting, leasing, or for-profit servicing. At any rate, corporate facilitators of sharing and their journalistic and academic followers will hardly lose sleep over such linguistic discrepancies.

By the same token, critical commenters have correctly pointed out that the technical definition of a platform stipulates “a programmable infrastructure upon which other software can be built and run, like the operating systems in our computers and gaming consoles, or information services that provide APIs so developers can design additional layers of functionality.”⁵⁵ While this account by Tarleton Gillespie is perhaps reminiscent of past open-source dreams, it is certainly the case that the technical aspect of programmability was culturally jettisoned in favor of a more colloquial meaning, that is, something along the lines of “an architecture from which to speak or act, like a train platform or a political stage.”⁵⁶ Though this specific shift largely pertains to social media platforms such as Facebook, Twitter, and LinkedIn, the insufficiency of metaphor surely applies to the popular representatives of today’s platform economies. The now ossified word obscures the fact that the platforms in question hardly constitute flat surfaces to be appropriated freely in the service of public and transparent exchange but instead resemble proprietary and asymmetric networks that all too often depend on vertical integration, inequality, and informalized labor. Indeed, platform politics are so irrevocably enmeshed in asymmetrical power relations that questions almost inevitably arise on the very possibility of an evenly programmable (and thus ostensibly democratic) and scalable platform. I will return to this question in chapter five in the context of a brief discussion on the popular code repository GitHub, which was recently acquired by Microsoft.

⁵⁴ It could be argued that the *sharing* in sharing economy has undergone a similar contortion as sharing in the context of social media like Facebook, where sharing has turned into a kind of cultural imperative that has less to do with generosity than with an anxiety about one’s social capital. Sharing, in both cases, retains its immediate normative appeal while concealing its respective political economy. See, for example, Bernard E. Harcourt, *Exposed: Desire and Disobedience in the Digital Age* (Cambridge: Harvard University Press, 2015).

⁵⁵ Tarleton Gillespie, “Is ‘Platform’ the Right Metaphor for the Technology Companies that Dominate Digital Media?” *NiemanLab*, August 25, 2017, <http://www.niemanlab.org/2017/08/is-platform-the-right-metaphor-for-the-technology-companies-that-dominate-digital-media/>; See also Tarleton Gillespie, *Wired Shut: Copyright and the Shape of Digital Culture* (Cambridge: MIT Press, 2009); Tarleton Gillespie, *Custodians of the Internet: Platforms, Content Moderation, and the Hidden Decisions That Shape Social Media* (New Haven: Yale University Press, 2018).

⁵⁶ *Ibid.*

A similar lens can be brought to bear on the pervasive use of what some call the *on-demand economy*. The expression *on-demand* emphasizes an appeal to flexibility and instantaneity while simultaneously downplaying the coinciding economic uncertainties and liabilities for workers, rendered as users on the supply side, thus concealing the fact that their informalized labor forms a key prerequisite of the *on-demandness* advertised. Thus, the term *on-demand* places a rhetorical premium on customer and client convenience while obscuring the conditions of possibility for on-demand services to be available in the first place, namely the constant and unending availability of labor. To anticipate the subsequent case studies, the power relations of on-demand economies manifest particularly clearly in online labor markets such as Uber and AMT, as both strategically reify an on-demand workforce to meet the needs of clients. In the case of Uber, clients are prospective passengers wanting to get to their destination as swiftly as possible. In AMT clients are researchers and, importantly, large data brokers seeking to efficiently crowdsource their data collecting and management. While at first glance on-demand sounds like an all-around improvement of service conditions, respective provisions are mainly carried out by workers, whose future behavior is increasingly guided by the imperatives of optimal service provision on the part of network providers.

Another common expression in the same vein is the *collaborative economy*, which suggests a kind of mutually beneficial working together, often toward a shared goal. Collaboration as a mode of business precedes today's gig economies, having gained much popularity in times when the Internet business took off in the 1990s but also has roots in an even earlier period in which outsourcing practices, modular work patterns, and decentralized modes of capital accumulation first gained traction. Interestingly, some gig economies are keen to divest collaboration of its implicit connotation of teamwork, which still carries a profit-oriented meaning. As I show in chapter three, firms such as Airbnb invest considerable resources toward broadcasting a message of community collaboration by which so-called Airbnb citizens cooperate to grant one another the experiences of authentic global travel. Airbnb thus highlights the efforts of its users ("Airbnb citizens") while downplaying its vast influence on the market. In short, the invocation of collaboration serves to establish a veneer of voluntarism, equality, and fairness while concealing highly irregular business practices.

Tentatively, critical interventions into the flawed terminologies and underpinning power relations of sharing, platform, on-demand, collaborative, and gig economies are certainly warranted, as such euphemisms substantially contribute to the widespread appeal of Silicon Valley startups such as Uber, Lyft, Airbnb, and TaskRabbit, as well as even bigger players in the game such as Amazon, Google, and Microsoft. Some researchers in the context of these labor markets have, therefore, begun to replace neoliberal jargon with more incisive designations. Ryan Calo and Alex Rosenblat, for instance, have titled their critical ethnography on the relationship between Uber and its contracted drivers as “The Taking Economy: Uber, Information, and Power.”⁵⁷ In the context of Amazon’s microlabor market, meanwhile, Ellen Cushing’s piece, “Amazon Mechanical Turk: The Digital Sweatshop,”⁵⁸ has stirred broader conversations about the sub-par working conditions for so-called Turkers who represent a less publicized contingent of gig workers compared to the much more visible Uber drivers and Airbnb home sharers. These contributions aim to demystify online marketplaces and challenge the brimming corporate Newspeak that characterizes the mainstream discourses.

The discussion draws significantly from the critical insights of such works. While the representational validity of the aforementioned euphemisms warrants sincere reflection, similar circumspection should also be applied to their critical counterparts. It could be argued that simply inverting the overly extenuative language—from “sharing” to “taking” and from “platform” to “sweatshop”—risks undertheorizing the cultural formations through which these economies proliferate and normalize. Insisting on such a unilateral conception of power relations, as implied in the word “sweatshop,” then, misses the social production of decidedly flexible, mobile, and agentic subjectivities, whose relationship to technology is framed in terms of realizing their potential within relatively constrained environments. In this view, it is crucial to take seriously the notion of technological optimism as a ubiquitous cultural force through which the gig economy continues to benefit. Discourses of technological optimism help frame engaging in the gig economy as current and effective modes of earning income. Such a common

⁵⁷ Ryan Calo and Alex Rosenblat, “The Taking Economy: Uber, Information, and Power,” *Columbia Law Review* 117, no. 6 (2017).

⁵⁸ Ellen Cushing, “Amazon Mechanical Turk: The Digital Sweatshop,” *UTNE Reader*, January 2013, <https://www.utne.com/science-and-technology/amazon-mechanical-turk-zm0z13jfzlin>.

sense is crucial to the logic of late capitalism. Rather than simply rejecting the discursive products that, for better or worse, characterize the gig economy, I suggest that a more instructive route is to show how the production of a common sense specific to the gig economy is instrumental in its proliferation.

While common sense is always fabricated, it is certainly not reducible to a representable set of causes. In other words, the discursive production of common sense compounds the textual and the material, the lived and the imagined. The ways in which the gig economy advertises its services and the ways in which relevant media outlets reflect these displays are set to gain traction not only among target audiences but also among a more general public. News regarding technology and the gig economy finds its mouthpieces in a variety of media hubs ranging from specific publications such as *Wall Street Journal*, *Fortune*, *TechCrunch* and, importantly, *Wired* to online forums like *Reddit* where contributions generate discussion among users. Finally, there are plenty of academic observers, whose intellectual capital makes them, in the eyes of many readers, authorities in the field. Thus, a university professor arguing that the gig economy requires little to no regulation might well have more clout with a broader audience than a gig economy CEO who would inevitably seem more biased in advancing the same claim. These media, granted variations in form and content, eventually contribute to the production of a common sense. In many cases, the ostensible realism in which the gig economy is seen as part and parcel of an unrelenting progress toward efficient markets often overlaps with a belief that technology per se is capable of alleviating society's many ills. Thus, a significant aspect of what makes the gig economy so appealing, I suspect, is grounded in the assumption that technology holds the key to a better future. As most gig economy startups are headquartered around San Francisco, the geographic center of high technology and venture capital, it is hardly surprising that much of the generous coverage originates from proximate media outlets.

One of the main media outlets in this context is *Wired*, a print and online magazine concerned with emerging technologies and cyberculture. Founded in 1993 and formed around counterculture celebrities and early Net proponents Stewart Brand, Kevin Kelly, Howard Rheingold, and John Perry Barlow, the *Wired* editorial team explicitly dedicated their magazine

to the legacy of 1960s media guru Marshall McLuhan.⁵⁹ For many years, *Wired* unabashedly celebrated the innovative power of Northern California's budding technology sector, shot-through with a cursorily revised libertarian individualism while remaining suspicious of encroaching government and corporate bureaucracies. In that vein, founding member Barlow evoked a kind of Jeffersonian revival in his manifesto "A Declaration of Independence of Cyberspace," which from a contemporary vantage point sounds somewhat pretentious, if not outright anachronistic: "Governments of the Industrial World [...] I come from Cyberspace, the new home of Mind. On behalf of the future, I ask you of the past to leave us alone."⁶⁰ The allure of quasi-communistic ideals in Barlow's manifesto as well as his colleague Rheingold's like-minded view of the Net as a "healer of social alienation" through "virtual communities," however, always stood alongside the neoliberal and capitalist potential of its applications.⁶¹ While *Wired* consistently distanced itself from Fordist hierarchies, championing instead equalitarian access and use of the Net's resources, the magazine still reserved a special place for networked modes of accumulation. As Barbrook observes, "Within the pages of *Wired* [...] McLuhanist technological determinism was embraced as a full-blown social philosophy. Thus, by reading its articles on the shape of things to come, the fans of *Wired* could learn how to reap the benefits of 'out of control' neoliberal capitalism."⁶² Though there is obviously more to the story, the gig economy, a hybrid space of technological gadgetry and the relentless drive toward deregulation, is to a large extent consistent with this notion.

Wired subsequently developed from a utopian medium of counterculture into a more pragmatic surveyor and educator of technological advances, though often with a tendency toward uncritical and undiscerning commentary of techno-politics. The case of *Wired* is instructive because it represents a widespread mode of scrutinizing technologies by delimiting the determining effects of technology on society. Even today, such tendencies remain evident in *Wired* articles and opinion pieces, though it would be disingenuous to claim that the magazine merely serves as an unrestrained hype machine for everything coming out of Silicon

⁵⁹ Steward Brand, "Scream of Consciousness," *Wired*, January 1, 1993, <https://www.wired.com/1993/01/paglia/>.

⁶⁰ John Perry Barlow in Barbrook, *Imaginary Futures*, 263.

⁶¹ Ibid.

⁶² Ibid., 267.

Valley. Particularly, after the financial crisis of 2008, the magazine's tone has visibly shifted from a sweeping enthusiasm to an editorial esteem for cautionary tales.⁶³ Reporting outside of technocentric and techno-utopian boundaries, however, remains at best periodical. Even in the context of more judicious coverage, as I show in the following samples, *Wired* tends to perpetuate a problematic determinism that is, unable to grasp technology in its social, political, and cultural articulations. Consider in this regard a featured editorial by NYU business professor Arun Sundararajan, confidently titled "Why the Government Doesn't Need to Regulate the Sharing Economy."⁶⁴ In predictable game theory terms mixed with libertarian diction, Sundararajan declares that "technology enables digitally mediated self-policing: the reputation systems and monitoring tools that dramatically smooth the safety and friction of peer-to-peer transacting parties without requiring centralized intervention, and which are now creating distributed digital institutions that reduce the need for government oversight."⁶⁵

Sundararajan's explicit faith that "technology giveth and technology taketh away" jibes well with an anti-government regulation narrative in which a vulgar Schumpeterian idea of creative destruction is elevated to a natural human condition. In this view, there can be no doubt that "digital technologies created the sharing economy" whereas no attention needs to be paid to how people's structural need of tapping into their extended network of resources are indispensable for this kind of financial activity.⁶⁶ Likewise, the piece remains trapped in its linear model of free markets inhabited by rational actors or, as the author calls it, "private commercial exchange of services between consenting entities."⁶⁷ Such a frictionless commercial system, the article indicates, would only profit from an increase in surveillance, which would in turn help to generate an unregulated state of equilibrium. Conversely, threats of rampant cartelization, monopolization, technocratic rule, corporate verticality, and growing precariousness for workers remain categorically outside the scope of Sundararajan's view,

⁶³ A case could be made that this perceived shift toward more diverse voices is less a change in ideology, but itself a consequence of an increase in freelance writing gigs, a move away from a core staff and toward a larger network of independent writers.

⁶⁴ Arun Sundararajan, "Why the Government Doesn't Need to Regulate the Sharing Economy," *Wired*, October 22, 2017, <https://www.wired.com/2012/10/from-airbnb-to-coursera-why-the-government-shouldnt-regulate-the-sharing-economy/>.

⁶⁵ Ibid.

⁶⁶ Ibid.

⁶⁷ Ibid.

which is by no means confined to *Wired*. Indeed, Sundararajan's recent book is not only on track to become an influential text on the topic of gig economies⁶⁸ but Sundararajan appears as a frequent guest on relevant talk shows and podcasts.⁶⁹ To be sure, the point of this critique is not reducible to a simple to call for more regulations. Rather, critical investigation needs to extend beyond questions of regulation and explore perspectives capable of documenting workers' subjectivities in the context of changing work conditions. That concern, however, is absent not only in Sundararajan's work but in many other recent contributions in this domain.

Though I provide a more detailed account in chapter two, the following serves as a preview of the press Uber receives from outlets such as *Wired* and *TechCrunch*. A *Wired* article from 2012 argues that "no matter who wins [the great taxi app wars] you the humble passenger will come out on top in 2013 [because] riders will have a broad choice of apps to try to see who's best at providing the transparency and convenience that older ways of hailing cabs just can't match."⁷⁰ Similar to Sundararajan, this writer puts a premium on user experience, invoking the advantages of competitive market dynamics that are sure to improve customer choice and transparency while putting pressure on prices. This prediction repeats the familiar trick of reducing the required labor for these services to an abstract notion of competition between a new, disruptive tech firm and the old, disrupted Taxi and Limousine Commission (TLC). Not only does this view conflate an unequal distribution of labor but it also naïvely misses former CEO and Uber founder Travis Kalanick's ambition to grow the firm into a global mobility giant. Rather than recognizing claims to cartelization and monopolization, the narrative of creative disruption allows the framing of Kalanick as an unwavering underdog, whose inflated business aspirations are allegedly aligned with satisfying passengers' desires for maximum comfort. But neither the precarity built into Uber's supply side (i.e. the drivers) nor the boundless appetite for corporate growth make for particularly good talking points. Evidently, it

⁶⁸ See Sundararajan, *The Sharing Economy*.

⁶⁹ See, for example, Charlie Rose, "The Sharing Economy," July 5, 2016, <https://charlierose.com/videos/28419>; NYU Stern, "Professor Arun Sundararajan and Scott Galloway – Employment in the Sharing Economy," October 13, 2016, <https://www.youtube.com/watch?v=ciqugtorbQA>.

⁷⁰ Marcus Wohlsen, "Uber is Back for NYC Cabs as Taxi App Wars Escalate," *Wired*, December 13, 2012, <https://www.wired.com/2012/12/uber-flywheel-taxi-app-wars/>.

is much more effective to express disdain toward the government's clumsy attempts at keeping up with the technology nerds, as an interview in the magazine *TechCrunch* illustrates.

The article subtitle "You Have to Grit Your Teeth, Be a Warrior, or Do Something Less Disruptive"⁷¹ spells out Kalanick's disparaging views on the role of federal regulators in the field. The glaring heroism on display here is commonplace in a culture that prides itself on churning out rebellious entrepreneurs who challenge the establishment with cutting edge inventions and uncompromising views. In fact, a distinct personality cult is coded into Silicon Valley's DNA such that that more critical conversations on the dream factory's actual practices hardly ever take off. Showcasing the cultural iconography of entrepreneurialism is precisely the means through which Uber attracts the attention of prospective drivers, as the following chapter shows. Meanwhile, an archaic and (over)reaching bureaucracy serves as a welcome villain, whose clumsy efforts nonetheless put unfettered corporate profits on the line. As far as Kalanick is concerned there is no doubt that industry regulators operate consistent with cronyism, arbitrary measures, and opportunism: "They view themselves as customer support for the taxi and livery companies [and] if they don't have rules they feel it is illegal."⁷² The article goes on to mention Kalanick's frequent business consultations with Airbnb's chief executives who have ample experience in confronting and evading meddlesome domestic and international governing bodies, as chapter three outlines. Discursively situated on one side are sloth-like bureaucrats seeking to curb business expansion while pocketing revenues from progressive minds who on the other side enjoy the media's venerating profiling.

Another *Wired* piece underscores Uber's expansive designs against the background of a substantial investment from Google,⁷³ one of many investors the ride-hailing venture continues to rely on. Consistent with Uber's explicit goal to become a global transportation giant, the piece suggests that the firm is gearing up to provide a broader range of services including UberEats (food delivery) and UberFreight (logistics). Despite such grand ambitions, significant

⁷¹ Ingrid Lunden, "Uber's Travis Kalanick on Regulators: You Have to Grit Your Teeth, Be a Warrior, or Do Something Less Disruptive," *TechCrunch*, September 12, 2012, <https://techcrunch.com/2012/09/12/ubers-travis-kalanick-on-regulators-you-have-to-grit-your-teeth-be-a-warrior-or-do-something-less-disruptive/>.

⁷² Ibid.

⁷³ Marcus Wohlsen, "What Uber Will Do With All That Money From Google," *Wired*, January 3, 2012, <https://www.wired.com/2014/01/uber-travis-kalanick/>.

outside investments, and strategic partnerships, the article reproduces the myth of the constant amateur by revisiting Kalanick's early days, stressing that "the charge he gets from cracking code drives his commitment to Uber, just as making videogames did when he was a kid."⁷⁴ Perhaps inadvertently, presenting Kalanick as an adult nerd version of a curious kid makes Uber's legal engagements seem like a game rather than a serious matter that determines livelihoods. If Uber's legal strategies indeed resemble the type of troubleshooting engineers encounter in the context of software programming, rendering such practices as child's play upholds a narrative of unbiased and innocent problem solving. In short, the vast changes currently unfolding in urban logistics, modalities of work, and property relations warrant more systemic lenses that transcend personalized, even anecdotal accounts of Kalanick's knack for solving puzzles.

The discursive ways in which technology is framed, whether through metaphors or broader cultural vernaculars, is crucial to how these technologies are perceived and applied. In some instances, the discrepancies are easier to detect so that even as certain expressions gain traction, there tends to be an implicit awareness of misrepresentation. The sharing economy marks a case in point, since hardly anybody really expects the sharing to be free of charge, thus rendering the disconnect relatively apparent. The inverted euphemisms (such as "digital sweatshop") in turn serve as provocation and polemic intended to raise concerns about unevenly automated and, at times, exploitative mechanisms. Quite often, such practices involve opaque user agreements and transaction procedures, unilateral data-mining, manipulation of user behavior, and inadequate compensation for services rendered. Belied by extenuating representation such palpable moments might lead to useful acts of deconstruction and critical conversations on questionable conduct. Things become somewhat trickier, however, as metaphors ossify into mainstream discourse.

Consider in this regard the notion that new technologies allegedly "disrupt" society, which not only implies a view of technology as an entity detached from society but also performs cultural work by which the proclaimed disruptor assumes a veil of progress, a kind of inevitable force that shakes up the social world. To challenge the disruption narrative and to

⁷⁴ Ibid.

arrive at a more refined notion of technology, it is instructive to deconstruct a given gig economy into its historical, social, economic, legal, and cultural components. In other words, there is a need to historicize, as some features that make the gig economies possible are not entirely contained in present technical configurations. A main reason that allows discourses of entrepreneurial ingenuity to proliferate widely, typically derives from the historical normalization of flexible subjectivity, as detailed above via the concepts of new capitalism and post-Fordism. By the same token, processes of automation are often celebrated as feats of modern technology in the service of maximizing production and efficiency while workers' experiences of becoming surplus labor, displaced, and otherwise disaffected by changing work environments register as collateral damage or individual failure. Historically conceptualizing the ambiguities between increasingly prefigured work modes and a freelancing subjectivity is the main task of the following section.

5. On Method: The Milieu and the Question of Materiality

This section emphasizes the modes in which workers make sense of their economic environments, which I suggest theorizing as milieus. As the subsequent case studies demonstrate, the gig economy generates contexts in which work is mediated, popularized, and rationalized. At first glance, considering these contexts as milieus might run counter to the colloquial meaning of a milieu, which denotes a social group inhabiting common spaces and customs. In this view, the milieu may be considered as a sense community, a definition that I want to maintain but somewhat extend to emphasize the political and economic stakes of the discussion. Thus, the present conceptualization of the milieu takes for granted the observations in terms of new capitalism and post-Fordism in that spaces of work and life have, in many ways, become indistinguishable. Retooling the figure of the milieu in such a way contributes to developing a framework for contemporary gig economies, in particular from a labor point of view while remaining apprehensive of corporate changes under late capitalism. A methodology able to describe and critique the gig economy requires an interdisciplinary approach that includes a robust understanding of political economy, a serious concern for experiential knowledge, and a narrative frame comprising relevant political theory. Crucially, the milieu

serves as a conceptual device of integrating theory, history, and ethnographic accounts so that insights from a specific milieu might challenge theoretical assumptions while theory conversely has the potential to transform the ways in which gig workers and digital ethnographers reflect on their activities. A brief survey of the concept conveys a sense of what is at stake in discussing milieus and how such a method might help intervene in discourses on the future of work. In the following, I reconstruct a few ways writers have previously envisioned the milieu.

To C. Wright Mills, the milieu contains a tension between troubles and issues: “Troubles occur within the character of the individual and within the range of his immediate relations with others; they have to do with his self and with those limited areas of social life of which he is directly and personally aware.”⁷⁵ Meanwhile, “Issues have to do with the organization of many such *milieux* into the institutions of an historical society as a whole.”⁷⁶ Such a neat division of *contiguous life-world* versus *overarching social structure* warrants a conceptual amendment, as corporate logics of deregulation and financialization operate increasingly close to the individual. The modes through which people make sense of their relationship to the domains of social and economic reproduction are today inextricably linked to corporate entities that provide the infrastructures and logistics of modern life.⁷⁷ Likewise, the ways in which a population is governed extend far beyond institutional and traditional employment domains and increasingly implicate the management of individual potentialities. To revise Mills, what “occurs within the character of the individual” is not at all confined to “the range of [...] immediate relations with others” but also encapsulates late capitalist practices and, by extension, applies reasonably to the context of gig economies. If nothing else, social relations form a vital context for constructing economic subjectivities.

Aside from Mills, whose work rests on Fordist assumptions of consistent work relations and a clear division between work and leisure, several other writers have since engaged with the milieu, often attempting to advance its operability as a conceptual tool for thinking about relations of power. In his lecture series on *Security, Territory, Population*, Michel Foucault

⁷⁵ C. Wright Mills, *The Sociological Imagination* (New York: Oxford University Press, 1959), 8.

⁷⁶ Ibid.

⁷⁷ See, for example, Shoshana Zuboff, “Creating Value in the Age of Distributed Capitalism,” *McKinsey Quarterly*, no. 4 (2010), 45-55.

deems the milieu an “intersection between a multiplicity of living individuals working and coexisting with each other in a set of material elements that act on them and on which they act in turn.”⁷⁸ With Foucault, the milieu emerges “as a field of intervention in which, instead of affecting individuals as a set of legal subjects capable of voluntary actions [...] and instead of affecting them as a multiplicity of organisms, of bodies capable of performances, and of required performances [...] one tries to affect precisely a population.”⁷⁹ Here, Foucault departs from an earlier concept of corporeal regimes toward grasping biopolitics in a larger economic sense. Thus, the milieu—a notion originally derived from 18th century discourses in physics and biology—delineates a shift in (the problem of) government away from territory and the human body toward the intersections of various material and immaterial natures. This distinction is important for the current purposes, as the gig economy directly affects bodies’ *capability of performances*. Such practices are always part and parcel of generating not merely a productive subjectivity but also an environment in which conformity registers as individuality.

As Thomas Lemke notes, with Foucault the milieu manifests as a “point of articulation between the natural and the artificial, the physical and the moral.”⁸⁰ Foucault’s milieu is useful for thinking about the spaces in which modes of subjectivation play out, specifically in the form of “political technologies of individuals” and “technologies of the self.”⁸¹ It could be argued that Foucault applies the basic tenets of the milieu to develop Mills’ view of the individual’s socioeconomic position. In *The Birth of Biopolitics*, Foucault details the archetype of *homo economicus*:

His situation is [...] doubly involuntary, indefinite, uncontrollable, and non-totalizable, but all these involuntary, indefinite, uncontrollable, and non-totalizable features of his situation do not disqualify his interest or the calculation that he makes; they give it consistency, effect, insert it in reality, and connect it in the best possible way to the rest of the world. So, we have a system

⁷⁸ Michel Foucault, *Security, Territory, and Population: Lectures at the College De France, 1977-1978* (New York: Picador, 2007), 20-1.

⁷⁹ *Ibid.*, 21.

⁸⁰ Thomas Lemke, “New Materialisms: Foucault and the ‘Government of Things’” *Theory, Culture & Society* 32, no. 4 (2014), 11.

⁸¹ *Ibid.*, 10.

in which *homo economicus* owes the positive nature of his calculation precisely to everything which eludes his calculation.⁸²

As the boundaries between the natural and the artificial, the physical and the moral dissolve, the economy is elevated to a natural human condition and the milieu turns into a strangely familiar environment, relatable to a common experience of late capitalism. In this environment, subjectivation occurs on various levels including thought and embodied experience. In Foucault's milieu, the individual becomes a willing operative in the regulation of its own productivity.

Lemke's emphasis of the material and interfacing aspects in Foucault's work constitutes an intervention in a larger set of discourses known by a variety of labels such as "Vital Materialisms,"⁸³ "Object Oriented Ontologies,"⁸⁴ "Agential Realisms,"⁸⁵ and perhaps most commonly, the "New Materialisms."⁸⁶ In varying degrees, these discourses propose a figurative return to matter that prioritizes materiality and agentic properties in things and assemblages. Though discourses of vitalism go back to the 19th century,⁸⁷ the resurgence of relevant ideas are, to some extent, inspired by writers such as Gilles Deleuze and Felix Guattari who vividly return the milieu to its biological roots:

We have seen elsewhere how all kinds of milieus, each defined by a component, slide in relation to one another, over one another. Every milieu is vibratory, in other words, a block of spacetime constituted by the periodic repetition of the component. Thus the living thing has an exterior milieu of materials, an interior milieu of composing elements and composed substances, an intermediary milieu of membranes and limits, and an annexed milieu of energy sources and actions-perceptions. [...] Not only does the living thing continually pass from one milieu to another, but the milieus pass into one another; they are essentially communicating.⁸⁸

⁸² Michel Foucault, *The Birth of Biopolitics: Lectures at the College De France, 1978-1979* (New York: Picador, 2008), 278.

⁸³ Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010).

⁸⁴ Graham Harman, *Tool-Being: Heidegger and the Metaphysics of Objects* (Chicago: Open Court, 2002).

⁸⁵ Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham: Duke University Press, 2007).

⁸⁶ Diana Coole and Samantha Frost, *New Materialisms: Ontology, Agency, and Politics* (Durham: Duke University Press, 2010).

⁸⁷ See, for instance, Rabinbach, *The Human Motor*, 64-66.

⁸⁸ Gilles Deleuze and Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: University of Minnesota Press, 1987), 313.

Such entranced passages, originally dedicated to organic processes and animal behavior, continue to inspire neo-realist readings in which social, economic, even historical processes can be derived from energies and materials.⁸⁹ New materialist interpretations of Deleuze and Guattari tend to concentrate on moments of the milieu as unpredictable, drawing from expressions such as “rhythms” and “refrains.”⁹⁰ While subsequent discourses build on such emergent and aleatory properties, *A Thousand Plateaus* also contains more skeptical insights that frame milieus as possible apparatuses of capture.

In the same vein as Guattari’s previous remarks in the context of post-Fordism, apparatuses of capture articulate a critical view on emerging human and nonhuman interfaces. Here, the authors caution:

But with automation comes a progressive increase in the proportion of constant capital; we then see a new kind of enslavement: at the same time the work regime changes, surplus value becomes machinic, and the framework expands to all of society. It could also be said that a small amount of subjectification took us away from machinic enslavement, but a large amount brings us back to it. Attention has recently been focused on the fact that modern power is not at all reducible to the classical alternative ‘repression or ideology’ but implies processes of normalization, modulation, modeling, and information that bear on language, perception, desire, movement, etc. [...] In machinic enslavement, there is nothing but transformation and exchange of information, some of which are mechanical, others human.⁹¹

Despite a critical recognition of computerized financialization as a game changer, Deleuze and Guattari reject the reduction of such processes to a purely technical and determining level of analysis. Especially Deleuze here anticipates his important claim that “technology is [...] social before it is technical.”⁹² Deleuze sophisticates this notion in the short essay “Postscript of the Societies of Control” in which he writes, “Types of machines are easily matched with each types of society [...] because they express those social forms capable of generating them and using

⁸⁹ De Landa, *A Thousand Years of Nonlinear History*.

⁹⁰ Deleuze and Guattari, *A Thousand Plateaus*, 314.

⁹¹ *Ibid.*, 458.

⁹² Gilles Deleuze, *Foucault* (Minneapolis: University of Minnesota Press, 1988), 39.

them.”⁹³ Instead of determining society, computerization and digitalization unfold in the context of a “capitalism of higher-order production [...] for the product, which is to say, for being sold or marketed.”⁹⁴

What can such a long-winded background of the milieu offer a discussion on the gig economy? First, the tension between enchanting entanglements of matter-energy on one side and the theoretically dense, somewhat abstract depictions of machinic enslavement on the other correspond to the dilemma of materiality versus thought. Accordingly, interpretations prioritizing materiality tend to “conceive of the subject as fully of this world,” while a consistent reading of the desiring subject in Deleuze and Guattari insists “that thought always comes from the outside at a moment when we are confronted by something so intolerable that the only thing remaining is to think.”⁹⁵ To project this debate onto the present purposes, it could be argued that a new materialist-inspired exploration of the gig economy would prioritize the efficacy of real objects and the tangible interconnectedness among them. As media theorist Alexander Galloway argues, “A materialist today is more likely to value empirical studies over critical or conceptual ones, seeking ontological explanations where once sociopolitical explanations sufficed.”⁹⁶ Explanations would be traced to the material media interfaces of Uber, Airbnb, and AMT, that is, the palpable links between people’s cars, houses, and their time and labor put into the chains of economic production and social reproduction. Galloway cautions that such interfaces would be considered less in their historicity than in their technical affordance, the directionality of information flows, and the utility of applications.

The same recourse to the Deleuze (and Guattari) of rhythms and refrains applies, as the new materialisms celebrate deterritorialization over the territoriality of history so that “the resulting precarity [is] recast in a positive light as contingency, flexibility, fluidity, or something else beneficial.”⁹⁷ This is not to suggest critical inquiries are impossible in this framework but

⁹³ Gilles Deleuze, “Postscript on the Societies of Control,” *October* 59, (1992), 6.

⁹⁴ Ibid.

⁹⁵ Andrew Culp, “Ending the World as We Know It: Alexander R. Galloway in Conversation with Andrew Culp,” *boundary 2*, June 29, 2016, <https://www.boundary2.org/2016/06/ending-the-world-as-we-know-it-an-interview-with-andrew-culp/>; See also Andrew Culp, *Dark Deleuze* (Minneapolis: University of Minnesota Press, 2016).

⁹⁶ Alexander R. Galloway, “A Questionnaire on Materialism,” *Cultureandcommunication*, March 7, 2016, <http://cultureandcommunication.org/galloway/a-questionnaire-on-materialisms>.

⁹⁷ Ibid.

rather than a focus on *thingness*—Galloway speaks of “Etsy philosophy”—tends to magnify uncertainty and celebrate newness. Even critically-oriented ethnographic research is implicated in this trend as it tends to limit itself to specific representations of corporate malpractice such as, say, the insidious pop-up notifications on Uber driver interfaces. While experiential approaches are often confined to reform and policy recommendations, historicizing the gig economy makes visible their intangible conditions of possibility. Conceived as a method, the milieu aims at avoiding oversimplification in either direction and instead provides context on how digital technologies are employed as “technologies of the self,” turning precarity and potentiality into entrepreneurship.

Expounding on the dualism between matter and abstraction does not necessarily produce interesting work in itself. Instead, the milieu functions as a mediating device between appraising contextual, technical interfaces on one side and theorizing the temporalities of power relating to emerging environments of work on the other. Not reducible to devices and apparatuses, the milieu contributes to “a perspective on how cultural production and the socio-historical situation take form as they are interfaced together.”⁹⁸ I engage the euphemistic language in the discourses on the gig economy as material–semiotic settings that are generative of widespread perceptions of workers as entrepreneurs. Depending on the respective gig economy, the competitive structuring of user interfaces against the background of increasingly cartelized corporate networks calls for more detailed accounts on the quality of labor. These conversations must involve experiential perspectives of markets and conceptual tools that help transpose these knowledges into a larger historical account.

6. Motility as Subjectivity

Notwithstanding cultural injunctions to be flexible and industrious (Foucault) and potentially enslaving technological linkages (Deleuze, Guattari, and Lazzarato), the milieu accommodates a refined analysis of subjectivity, including the strategies through which platform providers generate various forms of movement in their markets. Such movement is not limited to mechanical and geographic mobility, though firms such as Uber and Airbnb

⁹⁸ Alexander R. Galloway, *The Interface Effect* (Cambridge: Polity, 2012), 30.

obviously rely on the transport and tourism of its users. The kind of mobility produced in such milieus extends into virtual political economies where movements register also as swipes, pushes, and clicks. As the gig economy promotes movement in virtual and physical space, its applications equip users with contingent information about past, present, and future transactions. Simply echoing the corporate production of movement in the gig economy by uncritically adopting demands to mobility would undermine the project's critical ambition. Instead, I suggest connecting the milieu to a notion of *motility* to address the non-mechanical mobilities involved in the gig economy and, importantly, to document users' capacities to comprehend, improve, and sometimes subvert the prefigured terms of use.

The concept of motility originally derives from the medical sciences and signifies the capacity of organisms, particularly muscles, to move or contract. Among the first to employ the concept in social and cultural thought, Bauman refers to motility as an attribute of an exterritorial and weightless capital that "can travel fast and light and its lightness and motility have turned into the paramount source of uncertainty for the rest."⁹⁹ Though Bauman's use of motility is pertinent in that it articulates the flexible, opportune nature of disembodied capital, motility in Bauman's hands remains a feature firmly tied to moving capital. Meanwhile, Paul Virilio situates motility in a context of disappearing space, observing a coexistence of movement and inertia wherein physical mobility ultimately succumbs to paralysis.¹⁰⁰ Virilio describes motility more as a mode of capture, as inertia, though his overall work perhaps involves a more variable sense of motility. Benjamin Bratton writes that for Virilio "information is architecture by other means, framing and contouring the relative motility of social intercourse."¹⁰¹ Thus, another way to interpret motility is as a social potentiality that is at once susceptible to the demands of capital, as Bauman would have it, and subjected to the social implosion of information architectures, as Virilio thinks.

A concept of motility in distinction to a naturalized meaning of (geographic) mobility theorizes the subject's apperception and negotiation of the terms of mobility. Along the same lines, Vincent Kaufmann defines motility as the "way in which an individual appropriates what is

⁹⁹ Baumann, *Liquid Modernity*, 121.

¹⁰⁰ Paul Virilio, *Open Sky* (London: Verso, 2008), 16-17.

¹⁰¹ Benjamin H. Bratton, "Introduction," in Paul Virilio, *Speed and Politics*, (Los Angeles: Semiotext(e), 2006), 16.

possible in the domain of mobility.”¹⁰² In this view, motility subsumes three factors, namely *access*, *skills*, and *appropriation* that together determine how motility translates into tangible mobility. *Access* entails “the range of possible choices in a place [...] options and conditions.”¹⁰³ *Skills* refers to physical abilities, acquired and organizational skills, while *appropriation* has to do with how aspirations, life plans, and values bear on interpreting access and skills.¹⁰⁴ Of course, these three components of motility remain necessarily crude unless projected into specific economic context. Construed in such a way, motility nonetheless constitutes a versatile approach to problematize what is possible in certain situations that are largely predetermined by corporate interest. The modes of motility, as it were, materialize contingent on the various opportunities and constraints put in place by each gig economy provider.

7. Overview and Approach

The entire project consists of five chapters. The present introductory chapter put a focus on contextualizing the substantive and methodological parameters of the gig economy case studies that follow. Each chapter contains a detailed description of a marketplace so that they might also be considered independently. In terms of form, the case studies each depict their economic mechanisms and illustrate the ways in which the various milieus relate to the specific platform provider. Though products and services vary across case studies, some common elements offer clues toward a more comprehensive conceptualizing of the future of work. Taken together, the three case studies enable an integrative interrogation that might fruitfully inform conversations on the future of work. In that vein, chapter five synthesizes previous findings, situating them in the genres of postcapitalism and economic fiction.

Chapter two depicts the Uber ride-hailing service, a popular application and currently the most highly-valued venture in the gig economy. Recalling the remarks on techno-optimism, the notion of the entrepreneur, and the reification of user precarity and potentiality, the chapter provides a critical account of Uber’s rise. The chapter offers insights into how Uber

¹⁰² Vincent Kaufmann, *Re-thinking Mobility: Contemporary Sociology* (Aldershot: Ashgate, 2002), 37; See also John Urry, *Mobilities* (Cambridge: Polity Press, 2007), 38-9.

¹⁰³ Kaufman, *Re-thinking Mobility*, 38.

¹⁰⁴ *Ibid.*

works, how it develops its public image and user interfaces, and how the firm manages operations on the ground, both domestically and internationally. More concretely, the case study delineates how drivers mobilize in online forums to decode the euphemisms of corporate communication. Among other things, such “Uberspeak” serves to encourage drivers to remain on the road longer and accept queued-up rides. Such techniques of *forward projection* receive attention not only from drivers but also attract the scrutiny of researchers, whose work effectively contributes to publicizing concerns. Recorded data steadily helps Uber to improve its algorithms, (sub)urban coverage, and cognitive outreach to drivers. Despite such pervasive methods, there is more at play than a politics of exploitation, since it appears that for many drivers Uber’s continuous optimization seems to work out. The ambivalence in the Uber milieu raises concerns beyond policy reform and toward a broader conversation about the future of work.

Chapter three discusses the second largest gig economy, Airbnb, which at first glance may seem like an outlier but in fact constitutes a constructive addition to the set of case studies. Though recent news stories implicate Airbnb in processes of gentrification, views on this self-proclaimed home-sharing marketplace tend to be relatively favorable. More so than Uber, Airbnb affords many with additional income opportunities, making it a tricky case, for regulators and researchers alike. Airbnb invests immensely into fabricating its own community narrative, a discourse sustained by a network of Airbnb websites. Reconstructing Airbnb’s success yields insights into how work might be conceptualized as productive activity. The firm caters openly to people struggling financially, thus accepting economic precarity as a prerequisite. Meanwhile, the firm remains vague regarding its main revenue streams, which benefit from cartelization. Indeed, Airbnb’s anti-regulation approach facilitates profiteering of entities running shadow hotel chains. Moreover, a second generation of startups in the business of algorithmic optimization of Airbnb rentals intensifies economic inequalities while serving as a prism through which users “un-see” economic difference. The case study gestures toward a differential economy of flexible rents and increasing pressures for lower classes to liquidate their resources.

Chapter four looks at the first large-scale online microlabor market AMT that was initially designed to sort through Amazon's retail websites and eliminate duplicates. AMT offers crowdsourcing services for academic surveys and corporate entities using a flexible workforce looking for so-called Human Intelligence Tasks (HITs). HITs are tasks that cannot be completed by machines such as content moderation, image identification, and other cognitive assignments. As in Uber and Airbnb, AMTs design is competitive so that more experienced "Turkers" have access to better-paying tasks. The chapter argues that AMT constitutes a kind of twilight of automation and shows humans are intimately entwined in automation processes. Turking is often an uphill battle, especially for newcomers who might encounter scams, mediocre arbitration, and earnings below minimum pay. The AMT milieu materializes in networks where Turkers exchange information and device tools to navigate this gig economy, thus realizing Turker motility. Though the interactive role of researchers is especially impressive in AMT, regulatory interventions to better remunerate workers hinge on significantly scaling down the marketplace. The the richness of discourses that emerge from the completion of relatively diminutive must be reconciled with algorithmic management of labor that extends far beyond the confines of Amazon's in-house gig economy.

Lastly, chapter five integrates the previous case studies to intervene in postcapitalist discourses on the future of work. Specifically, the chapter recapitulates the main effects of Uber, Airbnb, and AMT. Despite their notable functional diversity, the three economies also evince common characteristics regarding the production of a simultaneously enterprising and prefigured subjectivity. The modes of motility correspond to the constraints of each marketplace while external economic and cultural forces continuously act on the milieus. Despite its rebelliously creative practices, milieus are nonetheless programmed to continuously engage with proprietary interfaces while rationalizing what counts as meaningful economic activity. The concluding chapter, therefore, contends that the present project can serve as an intervention to postcapitalist discourses on the future of work, which tend to gloss over the ways in which the social meaning of productive activity is always in flux and value creation is never quite exhausted. The chapter reemphasizes the need to critique the gig economy beyond immediate malfeasances and cautions to observe the trajectories by which economic forms

increasingly demand the liquidation of individual resources differentially managed via corporate interfaces. In this view, there is a way to integrate Uber, Airbnb, and AMT into a more comprehensive narrative of the future of capitalism. To illustrate this aspect, the chapter draws from so-called econofictions corresponding closely to the critical contribution of the project.

Chapter Two

Uber: Projection of Ubiquitous Coverage and Driver Motility

“Uber says: lower fares which means more riders and more earnings. translates to: you'll get the same number of riders as we've either added more drivers to offset any new ridership gains or there aren't really more riders. make less earnings equivalent to the percentage fares were cut. good news, just work more hours and drive more miles to make the same as what you were making before.”

(From the driver online forum *Uberpeople*¹)

1. Introduction

On Superbowl Sunday in February of 2017, Uber CEO Travis Kalanick hails an UberBlack car from the company's premium service fleet. At the beginning of the fair, Kalanick spends some time chatting with his friends in the back seat, checking his phone, and minding his business. At the final destination, the driver, Fawzi Kamel, finally confronts him, lamenting a decrease in demand due to the introduction of a more affordable version called UberX. As it turns out, the disgruntled driver previously invested substantial funds in a high-end vehicle through Uber's in-house leasing program in order to qualify for UberBlack conditions, only to find himself in an economic predicament. At first, Kalanick tries to reason and explains his need as a CEO to grow the company but as the exchange heats up, he indignantly remarks: “You know what, some people don't like to take responsibility for their own shit. They blame everything in their life on somebody else. Good luck!”² In a somewhat poetic sense, this encounter perfectly articulates a corporealized expression of the incorporeal forms of free-floating control at work in the Uber gig economy. Concretely, the episode highlights the limits, tensions, and contradictions at work in Uber's recoding of precarious into entrepreneurial subjectivities. Though the kerfuffle marks but one of several reasons for Kalanick's eventual resignation as Uber's CEO—he continues to serve on the company board—its implications are hardwired into the entire gig economy. Notably, Uber's drive toward continuous optimization in

¹ UberPeople, “What are some of your favorite Uber Speak twisted play on words?” October 3, 2014, <https://uberpeople.net/threads/what-are-some-of-your-favorite-uber-speak-twisted-play-on-words.4533/>.

² Johana Bhuiyan, “A New Video Shows Uber CEO Travis Kalanick Arguing with a Driver Over Fares,” *Recode*, February 28, 2017, <https://www.recode.net/2017/2/28/14766964/video-uber-travis-kalanick-driver-argument>.

the provision of frictionless mobility is categorically at odds with secure labor. To mitigate frictions, the firm relies on employing and perpetuate narratives of individual accountability. In this view, Uber continues an established tradition of challenging workplace regulations under the pretexts of flexibility and entrepreneurialism. In hindsight, Kalanick would have likely preferred a smoother ride, at least one without a dashcam, a useful tool Kamel installed to monitor unwieldy passengers. Kalanick and others should know that a certain driver savviness is not the exception but increasingly the rule in the context of Uber. Thus, reducing Uber to its questionable conduct and corporate malpractice glosses over significant dynamics deserving of a more detailed account. Consequently, I investigate in more detail the tensions between Uber's claim to providing almost entirely automated logistics on one hand and its promise to enabling drivers to attain the status of an independent freelancer on the other.

Uber stands out as the most successful venture in the gig economy in recent years. The firm's name is not only synonymous with the gig economy but also with a business model of charging rent for convenient quasi-peer-to-peer services. The "uberization" of "x" describes a common trend toward smooth transactions, efficient rating systems, and frictionless services. The application works as follows. Users download Uber's free software to their smart phones and set up an account that is linked to a credit card. Once users access the application, black car symbols simulate nearby drivers that can be hailed by tapping the request bar. Using GPS technology, Uber's algorithm calculates the fare and the time of arrival, allowing users to monitor the status of their prospective driver. In the meantime, users may check their driver's profile and credentials. As soon as the car arrives, there is technically nothing more to do than to get in, sit tight and, after successful delivery, rate the service on a scale from one to five stars. On the driver site, the process is similarly straightforward. Before delivering passengers, drivers need to undergo an application process in which Uber verifies their identity, confirms eligibility to operate a vehicle, and makes sure the car is up to standard. Once admitted for service and signed into the application, drivers may accept or decline incoming requests. Having undergone significant redesign in the firm's approximately ten-year tenure, the user interface looks sleek and is, by all means, easy to use. The gloss of polished software design, however, belies the precarious labor conditions on which Uber's effortless mobility continues to depend.

Indeed, Uber's projecting of an on-demand workforce is less a technological miracle of genius programming than a rational reorganization of a highly automatable and, thus, precarious industry. Meanwhile, the demands for uninterrupted mobility on one side and the pervasive discourse on self-enterprising on the other move drivers' experiences into ambivalent terrain. In light of this, the present chapter provides a detailed account on how Uber works and offers insights into what I call the Uber milieu, the spaces in which Uber drivers come to terms with the firm's practices and the sociotechnical implications of gig work in a rapidly transforming industry. While Uber's journey to global prominence is paved with scandals, litigations, and public outcries, such institutional interruptions are, in many ways, part and parcel of the firm's unapologetic business model, as I detail below. Allegedly, Uber's story began at a Paris technology conference in 2008, when Travis Kalanick and Garret Camp—both had recently sold their successful startups StumbleUpon and Red swoosh, respectively—were waiting in vain for a cab.³ Accordingly, Camp formulated an idea for a timeshare limousine service and soon thereafter acquired the domain UberCab.com. After some testing in New York City, the service launched in San Francisco in May 2010. Already in the early years the Uber exhibited all the tendencies that continue to attract notoriety among technologists, investors, and the broader public. In a sense, Uber's capital is not much less precarious than its drivers. Specifically, Uber's executive level proved highly volatile so that after Camp's erstwhile efforts, Ryan Graves advanced from General Manager to CEO in 2010. At the end of the same year then, Kalanick succeeded Graves. In 2017, Kalanick finally succumbed to the pressure of displeased investors lamenting Uber's increasingly negative publicity, a workplace culture of rampant sexual harassment, and reckless exchanges with law enforcement and regulators.⁴ The firm's fortune is now in the hands of Dara Khosrowshahi who is tasked with "turning the scandal-plagued startup into a traditional company—without sacrificing what made it successful."⁵

³ Dan Blystone, "The Story of Uber," *Investopedia*, March 19, 2018, <https://www.investopedia.com/articles/personal-finance/111015/story-uber.asp>.

⁴ Mike Isaac, "Uber Founder Travis Kalanick Resigns as C.E.O." *The New York Times*, June 21, 2017, <https://www.nytimes.com/2017/06/21/technology/uber-ceo-travis-kalanick.html>.

⁵ Sheelah Kolhatkar, "At Uber, A New C.E.O. Shifts Gears," *The New Yorker*, April 9, 2018, <https://www.newyorker.com/magazine/2018/04/09/at-uber-a-new-ceo-shifts-gears>.

2. The Uber Model of Mobility

While Uber's internal and external politics may be controversial, its product aligns with a broader trajectory of rendering urban logistics more efficient and less bureaucratic. This does not mean that Uber necessarily contributes to decreasing urban congestion. Indeed, recent studies highlight that Uber, in many cities, increases traffic by pulling passengers away from public means of transportation.⁶ Even such negative evidence can seemingly be mitigated, since Uber's new leadership announced a broadening of the firm's mobility palette to include bicycles, rental cars, and public transportation in the context of a larger effort of becoming "true partners to cities for the long term."⁷ While it may be the case that Uber (and its major competitor Lyft) significantly contribute to a reorganization of the transportation industry, such effects are nonetheless consistent with reimagined urban designs along the lines of recent developments in population growth (especially in larger metropolitan areas), growing concerns about inequality, climate change, and concomitant energy crises. Even traditional automakers, therefore, fundamentally reinvent their brands from traditional automobile manufacturers into mobility companies. As one observer notes, "Ford will put less effort into convincing people to plunk down their credit cards for personal cars [...] and more into moving them from A to B, with a little Ford badge tacked onto whatever gets them there."⁸ Likewise, General Motors plans to roll out their own rideshare service that would feature autonomous vehicles as opposed to human drivers in an attempt to significantly cut costs and compete with other providers.⁹

Such fully autonomous futures, however, remain highly speculative at the moment, since firms still find themselves in critical testing stages. Uber's own autonomous vehicle project, for instance, only recently suffered a drastic setback, when one of its cars was involved

⁶ Steve LeBlanc, "Studies are increasingly clear: Uber, Lyft congest cities," *Chicago Tribune*, March 1, 2018, <http://www.chicagotribune.com/business/sns-bc-us--ride-hailing-congestion-20180225-story.html>.

⁷ Andrew J. Hawkins, "Coming soon to the Uber app: bikes, rental cars, and public transportation," *The Verge*, April 11, 2018, <https://www.theverge.com/2018/4/11/17220408/uber-jump-getaround-masabi-cities-data>.

⁸ Aarian Marshall, "Ford Paves a Path from Big Automaker to Big Operating System," *Wired*, January 26, 2018, <https://www.wired.com/story/ford-future-operating-system/>.

⁹ Phil LeBeau, "General Motors plans to take on ridesharing services with self-driving cars by 2019," *CNBC*, November 30, 2017, <https://www.cnbc.com/2017/11/30/gm-to-take-on-ridesharing-services-with-self-driving-cars-by-2019.html>.

in a fatal accident in Tempe, Arizona.¹⁰ Uber has since put the brakes on its self-driving endeavors, as substantial lay-offs in its Pittsburgh division indicate.¹¹ Of course, Uber, Ford, and GM are but a few of many developers in a field, whose inevitable arrival has been predicted for decades. In a sense, the autonomous revolution finds itself in a state of perpetual deferment, always just a few years down the road. The constant suspensions have to do with the fact that, not unlike other ostensibly automated systems, autonomous driving technologies rely on continuous input in light of changing environmental and cultural conditions. In other words, “if [...] any autonomous vehicle built five years ago wants to work today, it needs an upgrade—there will be new car models to recognize, new traffic patterns to negotiate, maybe new, climate changed weather patterns to contend with.”¹² At the same time, considering the rate by which industries are adjusting their research and design divisions to meet the challenges of future mobility, scaled autonomous ridesharing won’t forever be a distant dream. To gain a competitive edge, then, multiple moving parts need to be aligned, including advanced software, reliable hardware, and favorable partnerships, since few firms have the single capacity to provide all necessary components. In terms of software development, for instance, chipmaker Nvidia is swiftly moving into the domain, counting among its customers firms such as Volkswagen and Uber.¹³ Comparable collaborations among other large firms are common, as recent deals between Amazon, Toyota, Pizza Hut, and Uber indicate.¹⁴ As carmakers transform into mobility companies, retailers and fast-food giants join the networks of smart distribution so that in the future humans and pizza can be delivered alongside.

As is stands, however, on-demand transportation continues to rely fundamentally on the participation of human drivers who own the hardware necessary to simulate the future of mobility in the present. Concretely, this means that Uber relies on a calculus in which drivers

¹⁰ Daisuke Wakabayashi, “Self-Driving Uber Car Kills Pedestrian in Arizona, Where Robots Roam,” *The New York Times*, March 19, 2018, <https://www.nytimes.com/2018/03/19/technology/uber-driverless-fatality.html>.

¹¹ Alison Griswold, “Uber has terminated its self-driving car operators in Pittsburgh,” *Quartz*, July 11, 2018, <https://qz.com/1326155/uber-has-terminated-its-self-driving-car-operators-in-pittsburgh/>.

¹² Aarian Marshall, “The Never-Ending Self-Driving Car Project,” *Wired*, April 8, 2018, <https://www.wired.com/story/when-will-self-driving-cars-ready/>.

¹³ Sean O’Kane, “Nvidia adds Uber and VW to its roster of self-driving tech customers,” *The Verge*, January 8, 2018, <https://www.theverge.com/2018/1/8/16860092/nvidia-xavier-ai-chip-uber-vw-self-driving-cars-ces-2018>.

¹⁴ Aarian Marshall, “Toyota Joins with Uber and Amazon to Find its Self-Driving Future,” *Wired*, January 8, 2018, <https://www.wired.com/story/toyota-self-driving-epalette-uber-amazon-pizza-hut/>.

liquidate their own vehicles (or lease through Uber's program) and time to relieve others of the hassles of driving, hailing a cab, or using alternative forms of transportation. Predicting the tipping point toward autonomous fleets in a considerably reshaped mobility industry is perhaps better left to the prophets of the 4th industrial revolution.¹⁵ Meanwhile, the odds are good that human labor will remain a steady requirement for the foreseeable future, as drivers assume the cost and liabilities of hardware and maintenance in exchange for minimal pay calculated by competitive pricing algorithms. The reliance on cheap labor, therefore, remains hardwired into the Uber's circuits at the very least until Uber finds becomes profitable.¹⁶ Crucially, the firm is obligated to its investors, as CEO Khosrowshahi plans on taking Uber public sometime in 2019.¹⁷ Recalling Ho's earlier insights on the liquidity of labor, the continuous pressures on labor combined with the futuristic veil of autonomous driving are two sides of the same coin. Precisely this context of soon-to-be-automatable-labor, then, determines the conditions in which Uber drivers find themselves, a space curiously characterized at once by rigorous machine logic and an intensive cultural production of unconstrained driver-entrepreneurs.

3. Entrepreneurship and Precarity in the Uber Milieu

Understanding Uber's relative success presupposes a recognition of the persistent myth by which innovation is largely attributable to the genius of a few designers and developers. Accordingly, cofounders Camp and Kalanick continue a personality cult that is inseparable from the utopian culture coming out of Silicon Valley. In fact, it could be argued that the cutthroat culture of liquidity that characterizes Wall Street has been incorporated by Silicon Valley but is couched in more euphemistic terms of technological optimism. In this view, Uber's success story is a matter of entrepreneurial spirit and commanding leadership—characteristics that ostensibly trickle down to employees and contracted drivers who Uber respectfully refers to as “partners.” Etiquette aside, Uber considerably relies on extending a freelancer status to their

¹⁵ The World Economic Forum estimates that in 2025 at least 10% of all cars on US roads will be driverless. See Schwab, *The 4th Industrial Revolution*, 135.

¹⁶ Katie Roof, “Uber could be profitable if it wats to, says CEO,” *TechCrunch*, February 14, 2018, <https://techcrunch.com/2018/02/14/uber-could-be-profitable-if-it-wants-to-says-ceo/>.

¹⁷ Darrel Etherington, “Uber CEO says 2019 is the target for IPO,” *TechCrunch*, November 9, 2017, <https://techcrunch.com/2017/11/09/uber-ceo-says-2019-is-the-target-for-ipo/>.

lowest operatives so that Kalanick's calling out Kamel for his alleged lack of responsibility indicates not merely the temper of a struggling CEO but also embodies the way in which an entire industry views the nexus of technology and employment. Even though Kalanick's remarks might come across as debased, the belief that workers should be grateful for the gigs provided by courageous startups represents a common opinion held by CEOs, investors, and their acolytes in media and politics.

While the notion of helping someone in their quest to entrepreneurial success sounds far less heroic than the typical bootstrap tales, Uber persistently advertises in the vein of self-actualization and independence. In this sense, the firm represents an extension of a Silicon Valley type initiative into the lives of average individuals, equipping them with the means to start their own enterprise. In comparison to traditional transportation services, for instance, prospective drivers confront significantly fewer bureaucratic hurdles to get started, making Uber a reasonable choice for many who are dismayed by dwindling prospects of conventional employment. Thus, Uber sells mobility not only to ride-hailing customers but also to prospective drivers via flexible employment. At first glance, the income ceiling is largely up to each individual, since Uber encourages drivers to stay on the road as long as possible. Currently, the maximum duration for operation is set to 12 hours at a time.¹⁸ The ethos of self-determination is evidently displayed on the company website, which reads the motivating slogan, "get there—your day belongs to you." More indicative of the entrepreneurial ideology is the section in which Uber introduces its partners in various US cities. As one driver relishes, "Uber enables me to have the creative freedom for baking my cakes and also driving on the side so I can make more money and also have my dream job." While for this partner driving for Uber is apparently not the final destination, another individual claims that "after just about a couple weeks, I saw that this was something I wanted to do permanently." In either case, Uber affords the realization of customized life plans.

The proliferation of entrepreneur culture has several implications. In a sociocultural sense, the firm's discursive production of independent partnership serves as a self-reproducing commodity in the same way that equipping one's car with the recognizable Uber decal confers

¹⁸ Kirsten Korosec, "Uber Is Setting New Limits to Help Prevent Accidents From Drowsy Driving," *Fortune*, February 12, 2018, <http://fortune.com/2018/02/12/uber-app-limits-driver-shifts-drowsy-driving/>.

some entrepreneurial semblance. Thus, Uber receives free advertisement as it develops its own brand of individual and social mobility. From a public relations perspective, entrepreneur culture legitimates all kinds of questionable practices, not least of which are the misdeeds of some high-level executives. Placing premiums on technological innovation rather than on social or political innovation, Uber's culture industry short-circuits institutional approaches. In many ways, then, the rise of Uber stands emblematic for the widespread assumption that social entrepreneurship is an anachronism, if not an oxymoron, as if desirable progress occurs solely in the realm of high technology. Likewise, this belief has led to the perplexing rationale that no social, political, or economic conundrum is too complex for a smart technological fix.

The veneer of corporate exceptionalism is part and parcel of *The Californian Ideology* as it "combines the free-wheeling spirit of the hippies and the entrepreneurial zeal of the yuppies."¹⁹ To refute exclusive claims to the material production of progress, it is worth recalling that countless instances in the history of technology document the complexities involved in industrial innovation. The iconic Fordist assembly line marks such a case in point. Accordingly, Henry Ford's contribution to the implementation of the assembly line is, contrary to popular belief, quite contentious and some historians argue convincingly that Ford was simply part of a larger network of social, economic, and technological developments.²⁰ Thus, as much as Fordism is now remembered for its name giver, future historians would be well-advised not to conflate post-Fordist economies with the impact of Kalanick and other leaders in the gig economy. Just as rationalization, scientification, and mass production were already in effect in Ford's day, current analyses must account for Uber's mediate and immediate conditions of possibility. A critical perspective on erosions of private life and practices of deregulation challenge the ideology of individualism coded into Uber as the latest opportunity in the corporatization of the self. In this view, Uber's main innovation is less a stroke of genius than a calculated rearrangement of existing social, economic, legal, and technological configurations.

Aside from capitalizing on structural economic developments, Uber contributes to the revision of conventions around ownership and property. Specifically, in a mobility market in

¹⁹ Richard Barbrook and Andy Cameron, "The Californian Ideology," *Science as Culture* 6, no. 1 (1996), 46.

²⁰ See Nye, *Electrifying America*, 223.

which individual car ownership is largely on the decline, Uber strategically positions itself as a personal mobility assistant, offering more options and less commitment. To its user-passengers, the service advertises mobility as a convenient on-demand alternative whereas to its user-drivers, Uber promises increased economic mobility through flexible hours and steady demand. The fact that particularly younger adults tend to view car ownership less favorably plays into Uber's hand. In light of prevalent economic anxieties, however, the trend toward asceticism smacks of a somewhat vulgar business model in which the responsibility of environmental sustainability rests predominantly on the shoulders of lower economic classes. Notably, many drivers rely on liquidizing their automobile assets not just for additional income but for basic financial support. Admittedly, these are general observations that offer only crude insights into the lived realities of Uber drivers. At the same time, such a macro perspective is necessary given the project's ultimate ambition of integrating findings from the Uber milieu into a larger context concerned with the future of work.

Without a robust contextualization of Uber's preconditions, even critical scholarship runs the risk of applying too narrow a lens. In presenting Uber's discursive production of entrepreneurialism and its manipulative techniques in overly scandalous terms, analyses might miss important precedents for such practices and, ultimately, fall prey to Uber's perceived newness, not unlike Uber enthusiasts. In other words, while several observers rightly lament Uber's questionable treatment of drivers, such criticisms tend to be conceived within a self-referential frame of the gig economy. Studies on the critical end of the spectrum regularly identify techniques Uber deploys to incentivize drivers to work longer hours and accept more rides. The most compelling work here comes from Calo's and Rosenblat's "The Taking Economy," a critical ethnography geared toward legal reform in the way of updating consumer protection laws.²¹ Thoroughly researched and convincingly argued, the study calls for adjusted minimum pay, added benefits, and more liability on the part of the firm. Though unquestionably important demands, the study's empirical focus nonetheless misses an opportunity of critically situating Uber's practices within a broader framework of precarity, flexibility, and potentiality that prefigures the gig economy subjectivity. By the same token,

²¹ Calo and Rosenblat, "The Taking Economy."

criticism that primarily amounts to policy adjustments in the context of Uber's mobility approach might overlook the impacts of broader changes in urban logistics and, crucially, the general role of workers in such scenarios. Put in different terms, even if new regulations were implemented in favor of drivers, the trajectory toward individuals sponsoring the designs of increasingly computerized mobility networks would apply nonetheless. In short, there is a need to integrate ethnographic research with theory in order to provide a narrative for a more comprehensive critique.

To this end, I emphasize how Uber reprograms precarious subjectivities into potential and, ultimately, quasi-entrepreneurial subjectivities through both language and machinic devices. Depicting these modes illustrates the complex relation between labor and capital in which labor is at once dependent and antagonistic, subordinate yet rebelliously creative toward capital. Recalling earlier methodological remarks, I construe Uber as a milieu, an environment that captures not only the historical conditions of possibility for Uber but also articulates the formations of technologies and strategies through which Uber drivers navigate their gigs. In the context of the present chapter, I draw from Brian Massumi's enunciation of the milieu as a surrounding in which workers are "not so much connected to each other [as they are] encasted in the same machinery, in a kind of active frame [...] capable of holding them together."²² Interestingly, Massumi makes this remark in the context of artistic networks sustained in relatively hierarchical moments. In this view, drivers are not reducible to passive cogs in Uber's mobility machine but rather display a range of responses to the firm's corporate communication. Indeed, as an ethnographic perspective reveals, drivers are aware of Uber's subtle techniques and actively correspond in online networks to decipher ambivalent messages and misinformation. In this sense, drivers evince a kind of motile subjectivity that filters through the frequent cues for continuous mobility. If Uber's goal is to provide an always-in-motion urban-ride-hailing-choreography, motility in turn could be viewed as a tool to reflect on its propelling logic.

²² Brian Massumi, "The Thinking-Feeling of What Happens," *Inflexions* 1.1, May 22, 2008, http://inflexions.org/n1_The-Thinking-Feeling-of-What-Happens-by-Brian-Massumi.pdf.

4. Pushing Buttons and Networked Driver Motility

The relationship between Uber and its contracted drivers has become a hot-button topic in various online media outlets, forums, and comments sections. Aside from Uber's devolving of liabilities such as insurance and maintenance onto drivers, the firm utilizes several techniques aimed at promoting longer hours, more fares, and commitments to future rides. The underlying calculus is relatively straightforward in that more active drivers at any given moment and location correspond to faster and smoother delivery of passengers, thus resulting in better coverage and higher revenues for the firm. Noam Scheiber's *New York Times* article, "How Uber Uses Psychological Tricks to Push Its Drivers' Buttons," documents the experiences of drivers facing such controversial methods. According to the article, one Florida driver "received a message on the company's driver app with the headline 'Make it to \$330.' The text then explained: 'You're \$10 away from making \$330 in net earnings. Are you sure you want to go offline?' Below were two prompts: 'Go offline' and 'Keep driving.' The latter was already highlighted."²³ Such subliminal encouragement is part and parcel of the so-called "ludic loop," a pervasive practice of gamifying economic tasks and operations. Incentives are generally accompanied by graphics familiar from video games, in this case, "an engine gauge with a needle [...] tantalizingly close to, but [...] still short of, a dollar sign."²⁴ The dangling carrot of a soon to be earned, higher pay is precisely what the shadowy part of semi-automated mobility looks like. Though drivers may certainly reject Uber's instigation, the volatile configurations of future pay and future service are always already in place. In conjunction with a Deleuzian insight, one might here refer to an instantiation of "limitless postponements" in a control society in which "one is never finished with anything."²⁵

A related feature, the so-called "forward dispatch, shortens waiting times for passengers, who may no longer have to wait for a driver 10 minutes away when a second driver is dropping off a passenger two minutes away."²⁶ The function enables drivers to accept future

²³ Noam Scheiber, "How Uber Uses Psychological Tricks to Push Its Drivers' Buttons," *The New York Times*, April 2, 2017, <https://www.nytimes.com/interactive/2017/04/02/technology/uber-drivers-psychological-tricks.html?mcubz=1>.

²⁴ Ibid.

²⁵ Deleuze, "Postscript," 5.

²⁶ Scheiber, "How Uber Uses Psychological Tricks."

rides while serving other customers. Here, Uber's wager consists in reducing wait times and, importantly, selling potentiality as certainty. In a sense, forward dispatch works similarly to how Netflix automatically queues up episodes to keep viewers glued to the screen. Continuous mobility, then, becomes the norm like streaming features on social media feeds. The function engenders among passengers and drivers a sense of already being *en route* to a destination, having already arrived. The subject is projected virtually toward an end point in what Paul Virilio considers an aesthetics of disappearance in which "there will be no longer anything but arrival, the point of arrival, the departure will itself have disappeared in the instantaneity of the projection."²⁷ While forward dispatch, or "stacking" rides, as drivers refer to it, constitutes a specific instance of algorithmic management, a more basic feature adhering to the same aesthetic of imminent arrival can be found in Uber's starting screen. Once the application loads, a display with black car icons appears, suggesting that drivers are already roaming the area, ready to be hailed. Such "phantom cars" simulate an image of ubiquitous network coverage and though Uber downplays the screen as a mere "visual effect letting people know that partners are searching for fares," the feature is virtually indistinguishable from the map used to actually request fares.²⁸ Through manipulating temporal and spatial perception, Uber profits from asymmetric access of drivers and riders, as a lawsuit involving the firm's "upfront pricing" feature determined. Introduced as a means for more passenger transparency, upfront pricing essentially calculates two types of fares, "one charged to the passenger and a cheaper one used to determine the driver's pay."²⁹ According to the plaintiff's attorneys, Uber then pockets the difference, unbeknownst to either driver or ride-hailer.

As time goes on, however, Uber's button-pushing hardly goes unnoticed among drivers who become increasingly aware of the crafty notifications they receive from their operating system. Consider the practice of surge pricing (or dynamic pricing), which often coincides with particularly busy periods during, for instance, happy-hours or closing times in bars. As speedy delivery of customers is always in Uber's best interest, in some cases the firm's algorithms

²⁷ Paul Virilio, *Negative Horizon* (London: Continuum, 2008), 110.

²⁸ Calo and Rosenblat, "The Taking Economy," 1655.

²⁹ Joel Rubin, "Lawsuit accuses Uber of ripping off drivers, paying them smaller fares than what passengers say," *Los Angeles Times*, April 28, 2017, <http://www.latimes.com/local/lanow/la-me-uber-drivers-lawsuit-20170429-story.html>.

temporarily increase fare prices to attract additional drivers to a given area while prioritizing those riders willing to pay an additional charge to control customer demand.³⁰ Surges promise drivers higher earnings due to an increased demand of passengers and a limited supply of drivers. Built-in game theory conundrums aside, the exact parameters underpinning surges remain internal and it is likely that Uber takes some license to increase network coverage (and profits) in certain areas.³¹ In short, surges can be used to guide drivers to where Uber needs them to be, irrespective of any given occasion. Such practices of misdirection need to be understood in the context of Uber's layered product in which the ludic loop, what Mihaly Csikszentmihalyi refers to as the optimal experience of flow,³² is continuously projected onto the roads generating Uber's urban mobility machine.

Driver reactions to the surge principle vary. While the spike in pricing adds a welcome bonus to drivers' shifts, most appear to be disillusioned with the feature. In the popular online forum UberPeople, for example, one user expresses discontent regarding the perceived increase in "fake surges," complaining that "they just want us out there on the road in case they need us [...] by the time we are there and ready...the surge is gone. What a bullshi_ [sic] way of conducting business."³³ In response, another user explains that "the surge model is one that works for Uber, not for you, the driver [...] if you think that you can ONLY [sic] make money during a Surge, you're doing it wrong. Stop putting on miles by chasing a surge."³⁴ Thus, learning not to worry about the surge has, to some extent, become Uber driver common sense, though there are instances in which allied drivers might take a different approach. Accordingly, some drivers arranged mass "switch-off" operations involving a critical mass of drivers in a certain area logging out of the application, thus simulating a supply shortage and triggering a surge. Researchers conducting the study explained that drivers "tried to regain some of their lost control and sense of autonomy [...] they utilized forums such as UberPeople to share these

³⁰ Utpal Dholakia, "Why Do Customers Hate Uber's Surge Pricing?" *Psychology Today*, December 8, 2015, <https://www.psychologytoday.com/us/blog/the-science-behind-behavior/201512/why-do-consumers-hate-uber-s-surge-pricing>.

³¹ Jessica Leber, "The Secrets of Uber's Mysterious Surge Pricing Algorithm, Revealed," *Fast Company*, October 29, 2015, <https://www.fastcompany.com/3052703/the-secrets-of-ubers-mysterious-surge-pricing-algorithm-revealed>.

³² Mihaly Csikszentmihalyi, *The Psychology of Optimal Experience* (New York: Harper and Row, 2009).

³³ "More and more fake surges," *UberPeople*, April 3, 2018, <https://uberpeople.net/threads/more-and-more-fake-surges.251640/>.

³⁴ *Ibid.*

stories and gain social support.”³⁵ For a variety of reasons the representativeness of these accounts is difficult to ascertain. For one, not all drivers visit forums such as UberPeople or similar venues on Facebook, WhatsApp, and Zello, follow blogs such as The Rideshare Guy, or in any other way bother to band with other users. To many drivers, the information Uber provides simply suffices to manage a few hours of driving per day. These drivers rely on scanning the information mediated through the application drawing from their own experiential and tacit knowledges regarding local traffic situations, construction sites, rush hour patterns, thus realizing motility within the system Uber affords them.

Aside from such technical contingencies, however, there is also a social element to an Uber motility, as many of the daily challenges involve unforeseeable situations that are specific to the highly deregulated business configurations in the gig economy. In general, the preferred mode of travel seems to be in silence, which is a safe way to ensure a five-star rating. As one forum user puts it, “after the usual greetings at pickup, I just let the rider initiate any conversation and I will reciprocate. Otherwise, I keep my mouth shut and concentrate on my driving. This strategy certainly hasn't hurt my rating.”³⁶ At the same time, UberPeople is filled with stories of bizarre encounters between drivers and passengers. Uber’s interest in this regard is consistent with its overall mission to provide frictionless mobility including social antagonism of the Kalanick/Kamel variety. To this end, Uber frequently updates its community guidelines asking that all users conduct themselves in a respectful manner. Typically, the company only steps in when inappropriate conduct is reported, personal integrity is on the line, or private property is damaged. If, for instance, riders leave their Uber in a significantly worse state than they found it in, Uber applies standard cleaning fees to the rider in addition to the regular fare. Though such contingencies are largely covered, drivers nonetheless regularly find themselves in stressful situations that demand an almost robotic discipline or, as the case may be, a dose of unpaid social maneuvering. In this vein, Rosenblat recounts a story of an Atlanta driver physically threatened by a drunk passenger and, upon arrival at the final destination,

³⁵ Paul Solman, “How Uber drivers game the app and force surge pricing,” *PBS*, August 4, 2017, <https://www.pbs.org/newshour/economy/uber-drivers-game-app-force-surge-pricing>.

³⁶ UberPeople, “One way or another, it never works (talking),” February 16, 2018, <https://uberpeople.net/threads/one-way-or-another-it-never-works-talking.240979/>.

received an invitation to smoke marijuana inside the passenger's house. To avoid escalating the situation, the driver compromised and so the two ended up smoking a cigarette together. After the incident, the driver went on to become a forum administrator in an online rideshare community.³⁷

5. Ubiquitous Network Coverage

Even critical ethnographers concede that the feedback loops between drivers and the firm improve over time. According to Rosenblat,

Uber and Lyft started offering a phone number drivers can call, and developed in-person driver hubs in select cities. And recently, Uber added a feature for drivers to give Uber feedback at any time in the app. Uber is also forming a Driver Advisory Forum and Lyft has plans for select employees to get behind the wheel in order to become more sensitive to driver concerns.³⁸

Though the proliferation of user forums and critical media discourses have a lot to do with such improvements, addressing driver problems was never entirely outside Uber's purview, which treats displeased users the same way it handles bad press: a bug to fix. As another example indicates, whether drivers accept the incentives to drive longer hours, preschedule additional rides, or opt to end their shifts, Uber relentlessly mines their feedback to optimize its algorithms. If, for example, "you need to pick up your kids at soccer practice at 6 p.m. [...] it will start to give you trips to take you in the general direction to get to a specific place in time."³⁹ Resilient behavior coded as negative feedback, therefore, ultimately adds to the sophistication of the application. Indeed, the extent to which the continuous online upgrades mirror Uber's offline actions is striking. In this view, the interface is not reducible its technical features but amounts to a material relation. That is, the software dynamics cannot be conveniently disentangled from their social context. Uber's treatment of institutional pushback is somewhat analogous to collecting feedback from both riders and drivers in the name of product

³⁷ Alex Rosenblat, "The Network Uber Drivers Built," *Fast Company*, January 9, 2018, <https://www.fastcompany.com/40501439/the-network-uber-drivers-built>.

³⁸ Ibid.

³⁹ Scheiber, "How Uber Uses Psychological Tricks."

improvement and brand growth and, thus, illustrates the necessity to grasp the conditions of ubiquitous coverage in terms of a social relation.

Another illustrative case in point is Uber's so-called Greyball software, a play on words denoting a practice in the vein of blackballing or blacklisting. Greyball derives from the same data-mining practices as the stimulating alerts and forward dispatches but is especially designed to identify potential law enforcement and other unwelcome authorities. To preempt any type of counterintelligence and sting operations targeted at the firm, Uber deployed the Greyball tool in cities worldwide, most frequently in highly regulated areas. Greyball comprises several techniques, including "drawing a digital perimeter, or 'geofence', around the government offices [...] that Uber was monitoring."⁴⁰ Anytime a user opens and closes the application, an action Uber refers to as "eyeballing," that person is considered a potential operative of the city government. Moreover, Uber checks credit cards and social media for any links to police or credit unions. In some cases, Uber employees even inspect local stores to record device numbers on cheap mobile phones, so-called "burners," used by law enforcement to entrap drivers. In some instances, such tagging practices also serve security purposes, for example, places in which drivers' safety is threatened by disgruntled taxi companies, as cases in France, India, and Kenya document. Of course, such commotions also provide Uber with pretexts to keep flagging unwanted ride hailers for any reason whatsoever.

Exact techniques of optimizing coverage largely depend on the specific jurisdiction Uber encounters in its quest toward global mobility dominance. This goal requires diverse modes of legal engagement customized to address local obstacles. Generally, Uber's law-related activities concern the bypassing of regulations for equipment, insurance, inspection, commercial driver's licenses, though most commonly the firm's army of lawyers faces off with representatives protecting employment and union laws. In some cases, state governments engage in legal cases, as evident in Alaska's opposition to Uber's contracting practices.⁴¹ Similarly, in Austin,

⁴⁰ Mike Isaac, "How Uber Deceives the Authorities Worldwide," *The New York Times*, March 3, 2017, <https://www.nytimes.com/2017/03/03/technology/uber-greyball-program-evade-authorities.html>.

⁴¹ Anna Rhodes, "Uber: Which Countries Have Banned the Controversial Taxi App," *Independent*, September 22, 2017, <http://www.independent.co.uk/travel/news-and-advice/uber-ban-countries-where-world-taxi-app-europe-taxi-us-states-china-asia-legal-a7707436.html>.

Texas, drivers are legally required to produce fingerprints to become licensed by the city.⁴² In Austin, Uber teamed up with its competitor Lyft and spend \$8.2 million on a piece of legislation called Proposition 1, an attempt to override the fingerprint law.⁴³ When Proposition 1 was defeated per popular vote in May of 2016, the departure of Uber and Lyft left a vacuum filled by a handful of Austin's own startups, whose potentials I discuss toward the end of this chapter, as a way to entertain an outlook into urban transport systems beyond Uber.

By and large, however, controversies and legal matters gravitate toward the licensing of drivers, as in New York City and Miami, where traditional taxi enterprises joined in solidarity and strikes. Such developments are partially traceable to backlashes from legal disputes in Europe and around the world. Uber is banned in Germany since early 2015⁴⁴ whereas in France the firm operates with state-licensed drivers.⁴⁵ Though Uber continues operations in the United Kingdom, it lost an important appeal in an employment tribunal case backed by the Transport for London (TfL) agency and the Independent Workers' Union of Great Britain (IWGB).⁴⁶ As of late 2017, Uber is technically banned in London but effectively available until all its appeals are exhausted.⁴⁷ In South Korea, Uber suspended its use of private vehicles after charges were brought to the Seoul Central District court, limiting the company's services to commercial vehicles.⁴⁸ These episodes are not random but add up to an increasingly conclusive picture in which Uber's legal forays are extensions of the strategies already employed to improve the application in a technical sense. Whether Uber pulls out of a market, then, comes down assessing the prospects of success through offering only basic services. Depending on that

⁴² Harriet Taylor, "What happened in Austin after Uber and Lyft got up and left," *CNBC*, August 18, 2016, <https://www.cnbc.com/2016/08/18/what-happened-in-austin-after-uber-and-lyft-got-up-and-left.html>.

⁴³ Dan Solomon, "Hailing a Different Ride in Austin," *MIT Technology Review*, March 7, 2017, <https://www.technologyreview.com/s/603792/hailing-a-different-ride-in-austin/>.

⁴⁴ Melissa Eddy, "An Uber Service is Banned in Germany Again," *The New York Times*, March 18, 2017, <https://www.nytimes.com/2015/03/19/technology/germany-frankfurt-uber-ruling-taxi.html>.

⁴⁵ Kerry Flynn, "Uber isn't having an easy time in France," *Mashable*, July 4, 2017, <http://mashable.com/2017/07/04/bad-news-uber-european-france-legal-case/#js8ncVuMSPqc>.

⁴⁶ Rob Davies, "Uber loses appeal in UK employment rights case," *The Guardian*, November 10, 2017, <https://www.theguardian.com/technology/2017/nov/10/uber-loses-appeal-employment-rights-workers>.

⁴⁷ Andrew Griffin, "Is Uber still working in London? Appeal delays decision as taxi app's fate hangs in the balance," *Independent*, October 13, 2017, <http://www.independent.co.uk/news/business/news/uber-still-working-in-london-is-ban-uk-england-legal-transport-not-down-night-bus-a7998436.html>.

⁴⁸ "South Korea court says Uber violated transport law, latest setback for U.S. firm," *Reuters*, April 25, 2017, <https://www.reuters.com/article/us-uber-tech-southkorea/south-korea-court-says-uber-violated-transport-law-latest-setback-for-u-s-firm-idUSKBN17S09F>.

calculation, Uber either decides to gain a foothold or abandon the mission. In Israel, for instance, Uber runs a pro bono Friday night initiative to generate visibility for its service among users.⁴⁹

In its ventures to evade, oppose, and assuage lawmakers and enforcers worldwide, Uber gathers large amounts of data, as virtually all real-world problems ultimately feed back into the company's circuits, where they enable constant troubleshooting aimed at avoiding future arrested development. As legal disputes worldwide force traditional transportation enterprises to take stronger stances, Uber is remarkably efficient in translating its legal matters into useful data. As Benjamin Edelman writes, "the company's phalanx of attorneys brought arguments perfected from prior disputes, whereas each jurisdiction approached Uber independently and from a blank slate [...] publicists presented the company as the epitome of innovation, styling critics as incumbent puppets stuck in the past."⁵⁰ In other words, Uber not only successfully embodies the Silicon Valley myth of technology as a disruptive force but also utilizes this narrative to belittle regulators as antithetical to its own progressive visions. Uber's recent turn toward incorporating other means of transportation into its service palette while vowing to better cooperate with cities must, therefore, be assessed against its lengthy tradition of domineering the mobility industry. Though many observers welcome Uber's more benign appearance under the new CEO, it should be stressed that without Uber's aggressive track record under Kalanick, the company would hardly be in its almost monopolistic position. In this regard, Edelman's improbable appeal to shut down Uber raises an important question about the Uber economy as a manifestation of a broader trajectory of on-demand mobility. That is, is the Uber business model even debatable?

6. Beyond Uber Mobility

Edelman's vocal demand to shut down Uber contains a question on the possibility of an alternative version of the mobility application. This question, in turn, recalls earlier remarks on

⁴⁹ Oren Dori, "Uber to Launch Ridesharing Service for Israeli Night-Owls," *Haaretz*, September 29, 2016, <https://www.haaretz.com/israel-news/business/.premium-1.744965>.

⁵⁰ Benjamin Edelman, "Uber Can't Be Fixed—It's Time for Regulators to Shut It Down," *Harvard Business Review*, June 21, 2017, <https://hbr.org/2017/06/uber-cant-be-fixed-its-time-for-regulators-to-shut-it-down#comment-section>.

broader environmental trajectories within which the Uber economy unfolds. Though its track record is far from impressive in this regard, Uber nonetheless addresses growing planetary anxieties concerning the use of resources and energy, particularly in densely populated areas. In this view, there is a certain logic undergirding the integration and streamlining of different mobilities into platforms and transforming transportation into more efficient systems. Currently, Uber's excessive drive to generate return on investments eclipses lasting progress in this regard but it is not unthinkable that some Uber variation might be adapted into more sustainable designs in the future. By the same token, there is a need to think beyond current regulation in the context of changing modes of mobility and, importantly, the significance accorded to human labor in that nexus. If likely a thorn in the sides of executives, investors, and (future) shareholders, a better-regulated version of Uber is certainly conceivable. Indeed, recent developments already point toward scenarios in which mobility companies are more thoroughly integrated into other corporate networks and city bureaucracies. In such a reform-oriented future, gig workers might receive benefits much like traditional public employees while nonetheless operating under the direction of machinic logics and mandates to liquidate their own assets. Thus, it is important to interpret current transformations in the mobility industry and its implications for the future of work not merely through Uber as a primary lens. Indeed, the drive toward sharing resources not only precedes the Uber (and the gig and sharing economies in general) but apart from Uber, questionable practices of (worker) manipulation, even scams, are widespread in today's emerging technologies.

In response to congested highways and limited financial resources on the part of individuals, platforms facilitating ridesharing between cities have been popular in Europe for years. For instance, the French company Blablacar, which recently acquired several of its European competitors,⁵¹ offers carpooling services as an alternative to regional bus and train systems. Though their main market does not (yet) coincide with Uber's primary target geographies, such companies use similar strategies and face similar restrictions in their struggle to implement, say, in-app payment systems for users. As is the case with Uber, the principle of

⁵¹ Romain Dillet, "BlaBlaCar Acquires its Biggest Competitor Carpooling.com To Dominate European Market," *TechCrunch*, April 15, 2015, <https://techcrunch.com/2015/04/15/blablacar-acquires-its-biggest-competitor-carpooling-com-to-dominate-european-market/>.

involving people's personal assets toward economic purposes applies. Whether these moderate competitors will outdistance Uber or, ultimately, pave the way for its return remains to be seen. In any event, the tendency toward incorporating individuals alongside robotic and machinic elements in the provision of efficient delivery far exceeds the Uber economy. Thus, critical inquiries must also look beyond particular legal cases related to Uber (and its few competitors), as such trajectories manifest in cultural domains, where mobility acts as a self-evident signifier for modernity. To be modern, in turn, societies are willing to bend the terms of meaningful employment, if stable representations of autonomy are in place.

There is a sense in which some contentious elements in Uber's operating system are characteristic to late capitalist forms in that thinking about mobility beyond Uber strangely affirms the ubiquity of the current modes of accumulation, which seem to have more to do with vectors of information than with means of production. In this view, forward dispatch and the projection of phantom cars not only represent key Uber features but also speak to a broader convergence of attention and (mobility) service industries. In other words, as movement in online and offline contexts fuse into experiences, even companies formerly primarily concerned with transport, now compete for users' attention in the way of social media. The mobility gig economy, then, also performs cultural work, as Uber's affordance includes physical transport, food delivery, and economic activity. Understanding Uber in such a complex assemblage of things and developments is not to suggest that pragmatic demands (like fair wages, benefits, and so on) are ill-conceived. Rather, presenting Uber in such a complicated way conveys the difficulty of conceiving radical alternatives to contemporary modes that encapsulate Uber. Underlying these limitations is a veneer of capitalist realism, the "widespread sense that not only is capitalism the only viable political and economic system but also that it is now impossible to *imagine* a coherent alternative to it."⁵² To illustrate this point, it is advisable to consider what happens in mobility markets, where regulations force Uber to abandon their operations.

In the wake of Uber's and Lyft's exit from Austin in 2016, for instance, several local ventures took it on themselves to fill the logistic void. Among approximately five startups, the

⁵² Marc Fisher, *Capitalist Realism: Is There no Alternative?* (Ropley: O Books, 2009), 2.

so-called Arcade City application quickly gained some traction but soon turned out to be an elaborate scam. The firm released a user interface without actual ridesharing abilities, while enticing users to work either pro bono or to generate value through the highly volatile cryptocurrency Ethereum.⁵³ The anti-Uber rhetoric on the startup's blog promised to address Uber's shortcomings by allowing drivers to "set their own rates, negotiate and transact directly with riders, build relationships with riders for a stable and recurring customer base, [and] self-organize into 'pods', co-ops, or their own business."⁵⁴ Some of Arcade City's former team members invested into rebranding and launched Swarm City, another decentralized, quasi-communistic service relying on the presumed appeal of cryptocurrencies.⁵⁵ Meanwhile, other representatives in Austin's post-Uber urban logistics economy fare much better. RideAustin, for instance, a venture "to bridge the divide between Austin's tech community and the residents who had repudiated Lyft and Uber at the polls," emphasizes localness and cooperates with the city's vibrant music and tech scenes.⁵⁶ It is nonetheless striking that a five-star rating system, certain elements of gamification, additional features such as splitting fares with friends and driver tips, and the overall design are essentially derived from the Uber application.

7. Conclusion

To conclude, in this chapter I formulate a critique of the mobility gig economy using Uber as its most influential representative, though a more comprehensive analysis might easily extend to Lyft as well as larger technology companies and smaller ride-hailing businesses. To the extent that ridesharing as well as more economical forms of transportation precede and exist beyond the Uber economy, there is a need to conceptualize Uber not so much as a disruptor but rather as an intensification of global trajectories. While some researchers focus on contemporary manifestations of corporate misdirection, even distinct practices of manipulation, I suggest theorizing the implications of gig work beyond existing legal and

⁵³ Ivan Chen-O'Neill, "Proof: Arcade City is a Scam," *Medium*, September 8, 2016, <https://medium.com/@CTUAgentIvan/arcade-city-is-a-scam-98c22c557f18>.

⁵⁴ "Decentralization and the Future of Ridesharing," *Medium*, August 2, 2016, <https://blog.arcade.city/decentralization-and-the-future-of-ridesharing-29d8f84a4ea7>.

⁵⁵ Joel Valenzuela, "Arcade City a.k.a. 'Uber Killer' Hard Forks, Founder Claims Fraud," *The Cointelegraph*, January 9, 2017, <https://cointelegraph.com/news/arcade-city-aka-uber-killer-hard-forks-founder-claims-fraud>.

⁵⁶ Solomon, "Hailing a Different Ride in Austin."

institutional limits, as materializations of inequality and uneven implementations of progress in the form of algorithmic management. In this view, some contestable instances of worker mistreatment seem to be hardwired into the logics of emerging mobility operating systems. To be sure, these general observations hardly relieve researchers of the imperatives of field work. Instead, the case of Uber shows the urgency to integrate empirical findings with theory, to anchor experiences in larger narratives, in particular in the vein of forward projection features. Such an approach discloses the ways in which the Uber system drives humans to aid proprietary algorithms more dutifully than the other way around. Likewise, becoming a preferred driver in the service of frictionless mobility coincides with a discursive production of autonomous freelancers. Automation, therefore, unfolds not apart from social relations but rather as a sociotechnical differential enabling manipulation and normalization of subjectivities. In these spaces, worker subjectivity is socially adjusted to meet the demands of effortless delivery.

Despite Uber's involvement in a number of scandals, the mobility gig economy can hardly be considered as a straightforward extraction economy. The notion that anyone involved in this economy represents a passive cog, subject to the whims of corporate logistics, is largely incomplete. At the same time, the emphasis on drivers' activity should not be read as a vindication of emerging mobility companies. Instead, the case of Uber indicates that many workers adopt a quasi-entrepreneurial subjectivity, which functions as a kind of cultural license to be spread thin across various tasks while maintaining a veneer of innovative initiative. In such milieus, workers are capable to reflect on the modes of access, skill, and appropriation through their own experiential knowledges and in a networked fashion. Though motility is useful in recording critical capacities among Uber drivers, it also documents the extent to which the paradigm of effortless mobility is coded into the interface of the Uber economy. Categories of creative and linguistic potentialities might apply in situational dimensions but are largely absorbed into machinic environments that integrate drivers into an asymmetric relationship in which an on-demand type of mobility is normalized. Echoing the effect of capitalist realism, when something is seen often enough—the city set in motion by Uber's urban mobility machine—radical alternatives appear far and few between.

Since the most successful platforms remain in the hands of tech giants, not local startups, even if workers' rights were increased, what are we to make of the continued injunctions to liquidate time and property? Moreover, should we be more concerned that increased mobility—be it movement of people, goods, or information—amounts to ever growing profits for just a handful of corporations, while more and more people invest into the corporatization of the self? As mobilities veer increasingly into the taskified realm of the corporate gig economy, precarious semiotics and materials are recoded into signs of prosperity. Placing all hopes into the efforts of lawmakers ignore the fact that legal cases around the world are no less part of Uber's mobility machine than the continuous changes to the firm's algorithms, the rendering of visual incentives to keep driving, and the continuous accommodations for its user base. In short, Uber seeks flow as optimal experience on different plains. When flow is interrupted, however, Uber receives feedback, which it swiftly redeploys to improve and extend flow into additional spheres. Indicative of larger transformations in late capitalism, Uber's mobility management involves the fulfilment of logistic functions in the spatial sense and increasingly shifts toward an integration with community fabrics and personal spaces.

Chapter Three

Airbnb: A Prism to Unsee Inequality

1. Introduction

In this chapter, I extend the discussion on the gig economy to include a platform specifically geared toward the liquidation of property, specifically in the context of tourism and hospitality. The most noteworthy representative in this respect is Airbnb, a widely popular marketplace offering lodging alternatives to the conventional hospitality industry on a global scale. Whereas the ride-hailing service Uber relies more heavily on performed labor, Airbnb facilitates the temporary transformation of private homes into relatively affordable bed and breakfast options. Though compared to other gig economies, gigs in Airbnb usually involve considerably less effort and time commitment, Airbnb nonetheless constitutes a sound continuation of the previous chapter, as many participants use the marketplace against the background of diminished employment perspectives. The qualitative difference between Airbnb and Uber has given rise to a misconception by which Airbnb is believed to be inherently more akin to the millionaire way of making money, that is, in one's sleep.¹ Though technically not incorrect, this argument overlooks the modalities tying Airbnb to existing structures of wealth and property, thus rendering its promise for convenient profits similarly deceptive as Uber's pledge to turn its drivers into autonomous partners. Indeed, despite their similarities in terms of application design, rating system, and the typical allure of flexibility, it could be argued that Airbnb underscores even more clearly the social and political implications at stake in the gig economy, especially against in light of gaping economic disparities. Such disparities, in turn, simultaneously constitute Airbnb's success as the second most valuable sharing platform on the market (with a current worth of approximately \$30 billion²) while also implicating the firm as a powerful player in increasingly deregulated and gentrified housing markets.

¹ See Ben Kinnard, "The difference between Uber and Airbnb: Sharing your time vs. your assets," *Medium*, March 4, 2017, <https://medium.com/@CaptainKinnard/the-difference-between-uber-and-airbnb-sharing-your-time-vs-your-assets-a796b65bcaf6>.

² Matt Rosoff, "Airbnb is now worth \$30 billion," *Tech Insider*, August 6, 2016, <http://www.businessinsider.com/airbnb-raises-850-million-at-30-billion-valuation-2016-8>.

Consistent with the methodological approach outlined in the introduction, I begin the discussion by reviewing samples of Airbnb's advertising and public relations in mainstream media outlets. The resulting archive serves to convey the common sense surrounding the platform. Subsequently, I critique the Airbnb economy by demonstrating the firm's eager participation in the discourses of its own userbase. I show that the firm's position as an arbiter of predominantly urban accommodation is made possible not only by convenient lodging solutions and sleek application design but also by way of a strategic rhetoric of corporate sustainability and individual initiative. These extenuative discourses are spun by Airbnb and, in varying degrees, by technology-oriented online media. Similar to the case of Uber, a polished application interface, customer experience, and overall discursive tone cloud a more comprehensive and critical engagement with the Airbnb's conditions of possibility, thus precluding systemic challenges. Instead, users buy into a network that contributes to disconcerting trends regarding the meaning of private property in at least two ways. First, there is a pragmatic tendency by which the Airbnb logic pushes lower socioeconomic groups out of their neighborhoods in many cities. Second, there is a concomitant shift in the concept of ownership by which a traditional sense of estate increasingly gives way to a more flexible and fluid meaning of property. However, this trajectory is highly stratified across class so that for the owners and investors of the platform, Airbnb emerges as an extremely lucrative and clandestine resource of passive wealth.

Though on a surface level, Airbnb's business model vows to mainly disrupt the traditional hospitality industry, its activities have significant implications for relations of work and property and, by extension, urban housing environments. Contrary to the disruption narrative, research suggests that while Airbnb's market share is certainly growing, hotels are still thriving,³ as it appears that their anonymity and sterile comforts remain priorities for many travelers. Thus, the commonalities to Uber are not necessarily found in the conventional disruption myth, which even in Uber's case is quite disingenuous—though for different reasons. Instead, the discussion discloses the ways in which the primary participants of the Airbnb gig

³ Alison Griswold, "Airbnb is Thriving. Hotels Are Thriving," *Slate*, July 6, 2015, http://www.slate.com/articles/business/moneybox/2015/07/airbnb_disrupting_hotels_it_hasn_t_happened_yet_and_both_are_thriving_what.html.

economy and any group negatively affected is reimagined as a vibrant and authentic community. Like many firms in the gig economy, Airbnb is in part a product of the 2008 financial crisis, set off by a bursting housing bubble. The subsequent recession in 2009 resulted in unemployment and debt comparable to the 1930s Depression. The consequences of the recent recession were most severely felt among individuals under the age of 25, whose unemployment rate climbed up to a staggering 19.1% (compared to an overall rate of 9.6%).⁴ This age group roughly encapsulates the first wave of users in the gig economy and its forgers. As far as Airbnb is concerned this connection applies, as the firm's origin story purports. Accordingly, when in 2007 cofounders Joe Gebbia and Brian Chesky found themselves unable to pay the rent for their shared San Francisco loft, the two roommates had the idea of turning it into a provisional "air mattress and breakfast," which explains the word "air" in the brand name.⁵

At first glance, Airbnb's founding myth appears to embody the Northern California ideology in that what it takes to be successful is apparently reducible to a brilliant idea and a good dose of persistence. (Indeed, Airbnb initially received several rejections from investors before their business eventually took off.⁶) The popular Steve Jobs mantra of "staying hungry," however, goes both ways, in this case, since the Airbnb founders were hardly alone in their predicament to pay rent. Without diminishing the entrepreneurs' ingenuity and perseverance, at least from a socioeconomic perspective, Airbnb's rise is less heroic than its allure suggests, as the startup taps into structural conditions of precarity among lower economic classes, particularly manifest in young people's difficulties to attain home ownership or deal with rising rents. Against this background several concerns arise regarding Airbnb's social and economic promise. For one, its allusions to collaborative hospitality contained in the impetus to share your home with other platform participants, is concurrent with an unprecedentedly uneven distribution of wealth both globally and domestically. (In the United States alone, the top 10

⁴ Juliet B. Schor, "Does the Sharing Economy Increase Inequality Within the Eighty Percent?: Findings from a Qualitative Study of Platform Providers," *Cambridge Journal of Regions, Economy and Society* 10, no. 2 (2017), 269.

⁵ Adam Lang, "Why is it Called Airbnb?" *Rewind&Capture*, December 23, 2014, <http://www.rewindandcapture.com/why-is-it-called-airbnb/>.

⁶ Brian Chesky, "7 Rejections," *Medium*, July 12, 2015, <https://medium.com/@bchesky/7-rejections-7d894cbaa084>.

billionaires now hold more wealth (\approx \$672 billion) than the bottom 40% of the population (\approx \$425 billion) according to the 2016 Credit Suisse Global Wealth Report and the 2017 Forbes list of billionaires.⁷) More importantly, the undeniable social and cultural trends of sharing on the one hand and the growing wealth inequalities on the other not only coincide but are systemically intertwined.

To pose a question, one might ask, how is it that what has been called “sharewashing”⁸ occurs in times of significant socioeconomic disparity? Recalling the remarks in the introduction about metaphors, despite ubiquitous pledges to charitability and cultural diversity, participants in the sharing economy hardly share from a sentiment of generosity. Instead, most people rent their property out of necessity or at least a financially motivated expectation of earning additional income. Though this intertwining of a sharing population and a facilitating economic elite does not necessarily amount to a linear or causal relationship, it is nonetheless noteworthy that sharing economies have been implicated in two distinct aspects of growing inequality. The first concerns what economists consider a “crowding out” effect, which suggests that white-collar workers increasingly engage in traditionally blue and pink-collar labor.⁹ The second development regards the more dramatic, yet inconspicuously camouflaged wealth gap between the broader middle and working classes on one side and the extremely wealthy, among which are the owners and investors of the very platforms in question on the other.¹⁰ In this context, Warren Buffet’s slogan, “if you don’t find a way to make money while you sleep you will work until you die,”¹¹ comes to mind. Like the famous Jobs proverb of staying hungry, applied to the current gig economy, this platitude acquires a particularly elitist smack.

To understand the underlying economic implications of the Airbnb gig economy, it is helpful to turn to Samuel Chambers’ recent contribution to the *Contemporary Condition* blog on the topics of wealth, income, and inequality, before moving on to critiquing the firm’s

⁷ See Samuel A. Chambers, “The Washington Post ‘fact checks’ Sanders on Wealth Inequality: This is What Ideology Looks Like,” *The Contemporary Condition*, December 21, 2017, <http://contemporarycondition.blogspot.com/2017/12/samuel-chambers-washington-post-fact.html>.

⁸ See Anthony Kalamar, “Sharewashing is the New Greenwashing,” *OpEdNews*, May 13, 2013, https://www.opednews.com/populum/printer_friendly.php.

⁹ Schor, “Does the Sharing Economy Increase Inequality Within the Eighty Percent?,” 270.

¹⁰ *Ibid.*, 269; See also Thomas Piketty, *Capital in the 21st Century* (Cambridge: Belknap Press, 2014).

¹¹ Ester Bloom, “Here’s how much money American’s are making from the gig economy,” *CNBC*, June 20, 2017, <https://www.cnbc.com/2017/06/19/heres-how-much-money-americans-are-making-from-the-gig-economy.html>.

fabrication of common sense. Responding to a questionable fact check by *The Washington Post* of Senator Bernie Sanders' position on inequality, Chambers argues that the fixation of media and policy analysts on income as opposed to wealth as the primary metric of assessing net worth conceals some of capitalism's most critical and underrepresented features. Chambers criticizes writers at the *Post*, which was acquired in 2013 by Amazon CEO and Airbnb investor Jeff Bezos,¹² for failing to adequately account for negative net worth on account of personal debt, which according to the *Post* misrepresents the bright financial futures of current students in medicine and other highly valued professions. Chambers also takes issue with the authors' unwillingness to comprehend that "capitalism is a force [which] begins to attain an inertial momentum that is, almost unstoppable."¹³ In this view, the newspaper strategically constructs a discourse based around the income statistic, "a metric that resonates with the narrative about innovative earners making individual decisions," while concealing the passive function of comprehensive wealth as a powerful and, in a sense, automated generator of wealth accumulation. Despite its pretensions of empowering particularly people in the lower middle class, the Airbnb economy works in a similar vein in that it constitutes an inadequate means of mitigating such developments (to significantly improve most people's livelihoods) and, moreover, serves as a vehicle of gentrification and marginalization while obfuscating the effects of inequality behind a prism that enables each user to confidently participate in the marketplace.

Airbnb, I contend in this chapter, is part and parcel of a cultural force that asks of lower classes and individuals to turn inward, so to speak, and to adapt to the increasing whims and uncertainties of a volatile economy. Heightened emphases on personal accountability and self-reliance correspond to an underlying demand of adjusting subjectivity and immediate surroundings to the demands of an increasingly inequitable global economy. Aside from reconstructing the contemporary rationale in the Airbnb milieu and reflecting on the widening wealth gaps between classes as not only coinciding but complicit phenomena, I highlight the

¹² Mike Isaac, "Amazon's Jeff Bezos Explains Why He Bought the Washington Post," *The New York Times*, December 2, 2014, <https://bits.blogs.nytimes.com/2014/12/02/amazons-bezos-explains-why-he-bought-the-washington-post/>.

¹³ Chambers, "The Washington Post."

qualitative differences in terms of information flows and visibility undergirding these power relations. To this end, I discuss the conditions in which home sharers make sense of the Airbnb market, as it promises financial support beyond conventional employment. Here, I point out that unlike in the case of Uber, the means of motility in Airbnb are significantly more stratified across economic classes. In other words, while users generally have easy access to generic tips with respect to hospitality management, and (short-term) success in the Airbnb marketplace, the most efficient tools to optimize profits are systemically reserved for wealthier users. Respective tools entail add-ons to the basic functions of Airbnb's application. Concretely, I indicate certain startups that provide high-end services for their clients by taking on maintenance chores and advertising tasks. Companies such as MetroButler or Happy Host, for instance, identify and cater to affluent areas using refined computational analysis and, thus, further stratify a market that generally appeals to a broader user base than other gig economies, at least in terms of potential home sharers, to use the Airbnb vernacular.

The precise modes in which these differentiations occur, however, remain somewhat elusive, as Airbnb is notoriously reticent with the disclosure of internal data. Though such opacity is a recurrent cause of negative feedback, Airbnb is nowhere near Uber when it comes to negative press. The lack of Airbnb related scandals, however, hardly renders the firm's practices less problematic, as the following pages show. Whether physical movement in space or in virtual flows of online transactions, today's precarity is also characterized by intensified scrutiny, while serious wealth and power are often defined by the capacity to remain invisible. If these signifiers seem slightly ominous, their proliferation marks an important qualitative shift from earlier precarious forms of life to today's gig workers and home sharers. In the context of Airbnb, this subjectivity is characterized by flexibility, creativity, and cultural openness, capitalizing on the affordances Airbnb provides through forays into further deregulation of urban housing markets.

2. Constructing Common Sense: The Airbnb Community

The rhetoric surrounding Airbnb is noticeably indicative of its Northern California roots, combining a technocentric businesses ethos with the cultural resonance of the new age spirit.

Indeed, it seems like no other gig service employs such a social and connective terminology in its advertising campaigns as Airbnb, which considers itself an international community, an image the company is eager to cement and develop, thus warranting closer scrutiny of its broad online presence. Aside from their main homepage and booking portal, Airbnb hosts several blogs and news-like websites designed to convey the platform's laudable endeavors of promoting environmental and economic sustainability, cultural openness, local communities, and individual entrepreneurship. Some of these claims are publicized in a set of self-produced and solicited studies. Accordingly, in 2013 Airbnb prides itself for its North American properties consuming less energy (63%) and water (12%), while emitting less greenhouse gases (61%) and producing less waste (32%).¹⁴ The study, which is based on 8,000 survey responses, additionally finds that "Airbnb hosts are more environmentally aware," (83%) if only by having "at least one energy efficient appliance" around the house.¹⁵

The same study concludes by stating that "the environmental benefits of home-sharing far outweigh the impacts of this induced travel [...] Airbnb's new model of sustainable tourism conserves precious resources even as more people have memorable trips."¹⁶ While there are no glaring indications that the research conducted by the Cleantech Group, a company supporting development and marketability of clean technologies, would misrepresent its findings, it remains nonetheless unclear how the researchers ultimately arrive at the conclusion that "environmental benefits of home-sharing *far* outweigh the impacts of this induced travel," since no additional data is provided. Moreover, Cleantech's standards appear to be purposefully vague. The study claims, for instance, that "Airbnb promotes a more efficient use of existing resources" but fails to address the possibility that overall tourism may increase in addition to traditional tourism mobilities. In this sense, Airbnb's publicity campaign is similarly misleading as Uber's public relations effort, which conveniently neglects that ride-hailers might not simply replace but rather add to already existing traffic. The study of the Cleantech Group, which is owned by Enovation Partners, an even larger energy consulting firm and, therefore,

¹⁴ "New Study Reveals A Greener Way to Travel: Airbnb Community Shows Environmental Benefits of Home-sharing," Airbnb, July 31, 2014, <https://www.airbnb.com/press/news/new-study-reveals-a-greener-way-to-travel-airbnb-community-shows-environmental-benefits-of-home-sharing>.

¹⁵ Ibid.

¹⁶ Ibid.

firmly based in existing structures at the intersections of international energy and capital, provides a veneer of environmental sustainability otherwise known as “greenwashing,”¹⁷ since the firm’s actual emphases are on corporate growth and capital sustainability.

As much as Airbnb invests in the public perception of environmental sustainability, the discursive production of other domains seems to take precedent, most notably in the areas of cultural diversity, community values, and individual agency. Crucially, Airbnb refers to itself as a community hub, a public image the firm cultivates extensively. Accordingly, frequent blog posts inform readers about the vibrancy of the many Airbnb communities across the world, recounting stories about friendly hosts, satisfied guests, and their authentic experiences. In a piece conveniently titled “Airbnb’s Positive Impact in France,” the platform provides data on the demographic make-up of France’s hosts and their respective annual incomes. The post states that “more than half [of hosts] earn under the median income for France.”¹⁸ Though this statistic speaks to the fact that most hosts hail from lower income brackets, the study nonetheless stresses Airbnb’s ostensible impact as an agent of entrepreneurialism, peculiarly oscillating between a language of affordance on the part of the platform and innovation on the part of the hosts. As an example, Airbnb cites a Paris host who asserts, “Airbnb helps me keep my apartment in Paris. Without that, I would have to move to the suburbs.”¹⁹ The firm that explicitly considers itself “part of the new Collaborative Economy,” another gig-economy euphemism, therefore, acknowledges its particular appeal to lower income groups while insisting on “promot[ing] entrepreneurship” among its users.

Similar narratives with regional variations play out in Airbnb’s anti regulation campaigns throughout the United States. In its New Orleans market, for instance, the firm’s efforts feature video advertisements of current Airbnb hosts. According to one such ad, a woman states her difficult financial situation while a superimposed text reads that “71% of Airbnb hosts in New

¹⁷ See, for example, Frances Bowen and J. Alberto Aragon-Correa, “Greenwashing in Corporate Environmentalism Research and Practice: The Importance of What We Say and Do,” *Organization & Environment* 27, no. 2 (2014), 107-112.

¹⁸ “Airbnb’s Positive Impact in France,” *Airbnb*, November 12, 2015, <https://blog.airbnb.com/airbnb-economic-impact-france/>.

¹⁹ *Ibid.*

Orleans said they use the money they earn to help pay their rent or mortgage.”²⁰ The campaign demands, “support all types of home-sharing,” specifically targeting a piece of legislation that discriminates among the types of apartments that can be rented through the marketplace. When short term rentals were legalized in 2016, the city council considered proposals to “create a ‘soft cap’ on the number of commercial, short-term rental licenses in multi-unit buildings in some parts of the city.”²¹ Thus, the story is part of a larger controversy that unfolds in many cities around the globe but assumes a particular urgency in New Orleans, whose inhabitants had barely recovered from Hurricane Katrina, when the 2008 economic downturn occurred. Though Airbnb presents itself cognizant of the Crescent City’s specific problems, its persistent challenges to housing policies ultimately show little regard for residents facing eviction by the hands of landlords who want to convert their properties into long-term rentals. Whether intended from the outset or simply a side effect, in many ways, Airbnb opened the floodgates for landlords to extract higher rents from their real estate. This means that popular areas of the city become increasingly accessible to tourists seeking to experience the vibrancy of the French Quarter and the authenticity of Faubourg Marigny. Naturally, the other side of the same coin is that precisely these qualities further erode as Airbnb works toward merging residential and conventional hospitality forms. In this view, one of the emergent interactive Airbnb experiences is to participate in processes of gentrification by visiting New Orleans’ most popular neighborhoods.

Such dynamics take place, in varying degrees, anywhere Airbnb provides a convenient gateway for temporary stays. Quite often, however, gentrification encounters opposition from lawmakers and urbanites alike. In response to negative backlash and to continue growing its network, Airbnb capitalizes on a public relations approach that emphasizes the individual agency of home sharers, either by downplaying or downright denying the firm’s involvement in structural housing issues, as the next section shows. Accordingly, a contribution to the Airbnb news blog observes, “Home sharers in Berlin celebrating [...] after the State Government

²⁰ “Airbnb in New Orleans,” *Airbnb Citizen*, October 17, 2016, <https://www.youtube.com/watch?v=1FnHk0fH-w4>.

²¹ Charles Maldonado, “New Orleans City Council to consider limited rollback on Airbnb licenses,” *The Lens*, March 8, 2018, <https://thelensnola.org/2018/03/08/new-orleans-city-council-to-consider-limited-rollback-on-a-certain-type-of-airbnb-license/>.

proposed new rules to support Berliners who share their homes.”²² The controversy is almost identical to the New Orleans dispute, which was also tentatively ruled in Airbnb’s favor. Specifically, the statement refers to a partial resolution to a legal dispute between a displeased Berlin resident and Berlin’s state government over a law instituted in 2014. Airbnb stands to benefit so much from a positive outcome that it gladly takes over the legal costs of its would-be Berlin advocate. The law (in catchy German referred to as *Zweckentfremdungsverbotsgesetz*), in effect, curbs misappropriation of housing by prohibiting landlords and apartment owners to rent out their properties to tourists, rather than to Berlin residents.²³ The law comes as a response to some cases in which landlords tripled their income by offering their properties on Airbnb, practices that seem to have taken over entire areas of the city.²⁴

One building on *Wilhelmstraße* in the Berlin Mitte borough, in particular, reportedly offers 280 of its 300 apartments for short term tourism, pushing locals to publicly campaign against this type of gentrification.²⁵ Considering the changing face of some neighborhoods, rising rents, and occasional tenant evictions, Airbnb’s insistence that their platform “has no significant impact on the Berlin housing market” rings hollow at best.²⁶ Not surprisingly, Airbnb outsourced this study to a third party real estate consulting firm called Gewos. A closer look at the study reveals that Gewos does not at all deny that private businesses profit from Airbnb but rather relativizes respective numbers against greater demographic shifts such as birthrates and migration patterns.²⁷ There are other useful resources, however, such as “Airbnb vs Berlin,” an independent study based in a course curriculum at the Potsdam University of Applied Science. In contrast to the Gewos study, their research on users who offer large quantities of

²² “New home-sharing rules proposed by Berlin Government,” *Airbnb*, December 13, 2017, <https://www.airbnbcitizen.com/new-home-sharing-rules-proposed-by-berlin-government/>.

²³ Philip Oltermann, “Berlin ban on Airbnb short-term rentals upheld by city court,” *The Guardian*, June 8, 2016, <https://www.theguardian.com/technology/2016/jun/08/berlin-ban-airbnb-short-term-rentals-upheld-city-court>.

²⁴ Steven Hill, “How the Berlin government could rein in Airbnb and protect local housing,” *Salon*, June 30, 2017, https://www.salon.com/2017/06/30/how-the-berlin-government-could-rein-in-airbnb-and-protect-local-housing_partner/.

²⁵ Feargus O’Sullivan, “The City With the World’s Toughest Anti-Airbnb Laws,” *Citylab*, December 1, 2016, <https://www.citylab.com/equity/2016/12/berlin-has-the-worlds-toughest-anti-airbnb-laws-are-they-working/509024/>.

²⁶ Airbnb, “New home-sharing rules.”

²⁷ “Airbnb and the Berlin housing market: The impact of Airbnb properties on the housing supply in Berlin,” *Gewos*, 2016, <https://www.airbnbaction.com/wp-content/uploads/2014/12/AirbnbandtheBerlinhousingmarket.pdf>.

apartments as well as users that seek to host more than ten guests at once indicates a decisive “misuse of the platform as a business tool.”²⁸

To be sure, the misappropriation law might as well affect individuals and groups among lower and middle classes who could conceivably benefit from Airbnb’s services. To city officials, however, the law primarily marks an attempt at preventing Airbnb-enabled gentrification and halting further economic division among upper and lower middle classes, a phenomenon not confined to Berlin. Airbnb is, of course, aware of the fact that established real estate businesses such as BerlinAspire appropriate its services to increase their profit margins but deliberately directs public attention toward the efforts of lower income folks, whose improved livelihood the platform openly claims as its primary mission. In many ways, the rhetoric of home sharers collaborating with each other and their corporate umbrella across a worldwide community is perhaps the approximation of the ultimate neoliberal dream of ending profit limiting regulation. This dream, more so than ever, hinges on a terminology of self-determination, opportunity, and choice. In this view, Airbnb performs an interesting balancing act, as it simultaneously caters to a conservative ideology of self-reliance and responsibility while also endearing itself to progressive camps by espousing commitments of community, solidarity, and diversity. The company’s eventual goal in the hospitality and housing market, however, is no less ambitious than, say, Uber’s aspirations in terms of covering the expanding mobility market in its entirety.

Like other firms in the gig economy, Airbnb benefits from a mainstream media reception in the vein of Sundararajan’s neoliberal, anti-regulation attitude, which assumes optimistically that the emergent gig markets will eventually regulate themselves solely through rating systems and other built-in features. Though these systems work fairly well to generate trust among users within the confines of the application, they hardly address the underlying formations that control the flow and distribution of information. Considering the case in Berlin in which affluent renters and larger real estate agencies cartelize markets, a key conceptual weakness of the anti-regulation approach becomes apparent. Specifically, this lens narrowly focuses on the possibilities of individual upward mobility while eclipsing the certainty of large-

²⁸ “Airbnb vs. Berlin: What the Data Tells Us,” *FH Potsdam*, 2016, <http://www.airbnbvsberlin.com/#otherCities>.

scale financial successes. In other words, Sundararajan and others imagine scenarios in which an individual home-sharer might be corrected by the market for, say, providing guests with an improperly cleaned bathroom. Though this may be the case, the technolibertarian view rejects the fact that all actually existing markets contain deep-seated hierarchies. Ironically, a popular figure in the libertarian intellectual scene, investor Peter Thiel, is quite outspoken about the dynamics of free markets and monopolies. Thiel states that “under perfect competition, in the long run no company makes an economic profit. [...] The opposite of perfect competition is monopoly,” which is why he advocates for “creative, benevolent monopolies.”²⁹ Thiel makes these remarks discussing the social media platform Facebook and its role as a de-facto monopoly. Meanwhile, Facebook has a history of talking up its competition, which is, of course, non-existent.³⁰ Amazon, to be discussed in the next chapter, takes a similar approach regarding the retail industry and Internet infrastructure, among other areas. If Airbnb’s respective position hardly compares to these giants, the firm invariably designs a competitive marketplace while solidifying its external position as a singular service provider. In short, Airbnb is likely to remain relatively indifferent with respect to larger real estate firms swallowing up urban markets, as long as revenues from these entities justify litigation and mixed publicity.

Sundararajan’s ruminations are popular in some corners of the discourse, precisely because they put a premium on the material aspects of technology and their ostensibly unmediated impacts on society. While some observers simply shower Airbnb’s designers in praise for overhauling an old version of the application into a more responsive experience,³¹ others take seriously the technological and economic determinisms presented by Sundararajan. In this view, Airbnb and Uber embody the gig economy’s telos of chipping away at “the ideology of owning.”³² This argument assumes that the impetus for sharing derives from companies and their products. According to one author, “the question that intrigues [Sundararajan] is whether

²⁹ Noam Cohen, “The Libertarian Logic of Peter Thiel,” *Wired*, December 27, 2017, <https://www.wired.com/story/the-libertarian-logic-of-peter-thiel/>.

³⁰ Michael J. Coren, “Is Facebook a monopoly? Mark Zuckerberg doesn’t have an answer,” *Quartz*, April 10, 2018, <https://qz.com/1249296/is-facebook-a-monopoly-facebook-ceo-zuckerberg-didnt-have-an-answer-in-congressional/>.

³¹ Kyle Vanhemert, “A Better App for Airbnb Hosts Aims to Make Every Stay Homier,” *Wired*, November 12, 2013, <https://www.wired.com/2013/11/how-a-better-app-for-airbnb-hosts-will-make-everyones-stay-better/>.

³² Marcus Wohlsen, “What the Sharing Economy Needs is a Little Less Democracy,” *Wired*, August 28, 2013, <https://www.wired.com/2013/08/sharing-economy-localmotion/>.

using an app such as Uber to summon a ride every now and then acts as a gateway toward embracing a broader culture of sharing.”³³ There are a few things to note here. For one, nowhere in the passage or the entire article, for that matter, does the author consider that the culture of sharing might have other “gateways” than the applications in question. What is more, the underlying assumption that “the idea of sharing runs headlong into the ideology of owning,” ignores the fundamental insight that capitalism has for decades successfully commodified time, labor, and human relations, to the effect that Silicon Valley’s version of sharing serves as a profitable extension, rather than a contradiction to the system of accumulation. The Airbnb common sense, therefore, implicitly accepts a signification of sharing as running counter to alleged traditional accounts of capitalism, thus conveniently navigating around systemic and structural building blocks of the sharing ideology.

Many technocentric discourses predictably echo the apologist sentiments of writers such as Sundararajan who undiscerningly celebrates the new age of connectivity and Thomas Friedmann who hails the gig economy’s production of new entrepreneurs and the overhauling of the ownership concept.³⁴ Their determinist views are circulated in an elate *Wired* article on the newfound trust among Americans:

This is an economic breakthrough. It is a cultural one, enabled by a sophisticated series of mechanisms, algorithms, and finely calibrated systems of rewards and punishments. It’s a radical next step for the person-to-person marketplace pioneered by eBay: a set of digital tools that enable and encourage us to trust our fellow human beings.³⁵

Here, the author carelessly presumes that the instrumental algorithms of sharing networks fundamentally rewire humans into becoming more trusting and rational actors. Allegedly, Silicon Valley engineers finally found a way to code technological reason so that mistrust in society is slowly waning. Conveniently, the same author also refers to the gig economy as a person-to-person marketplace, omitting the central roles of provider firms, which are by extension revered as the arbiters of trust. Regrettably, such a simplified perspective misses an

³³ Ibid.

³⁴ Jason Tanz, “How Airbnb and Lyft Finally Got Americans to Trust Each Other,” *Wired*, April 23, 2014, <https://www.wired.com/2014/04/trust-in-the-share-economy/>.

³⁵ Ibid.

opportunity to highlight the information asymmetries, as outlined in the previous chapter, on which gig economy platforms rely. As Uber's proprietary algorithms enable its increasing network coverage at the expense of drivers, Airbnb is evidently uncooperative to release data, citing instead hosts' rights to privacy, a practice that purposefully impedes the work of regulatory bodies and broader critical interventions.³⁶ Indeed, the murkiness of Airbnb's internal processes, its veneer of transparency, and the pretense of a trusted community are key components in the platform's framing of home sharers' experiences. Like in the Uber milieu, however, most Airbnb hosts also share the peculiar experience of being at once exposed to more detailed information and less structural knowledge about the larger conditions of precarity that surround them. The following section, therefore, illustrates more closely how structural precarity is obfuscated in the Airbnb economy. Rather than engendering collaboration as solidarity, Airbnb emerges as part and parcel in the production of a self-interested subjectivity, incessantly concerned with optimizing the processes of profiting from liquidated assets.

3. Scenes from The Airbnb Milieu

In the Airbnb milieu, the synthesis of precarity, potentiality, and digitized organization of everyday life begets a goal-oriented subjectivity on the part of the home sharers in that idle assets are constantly assessed in terms of their propensity to generate additional income. Under the demands of an Airbnb economy, therefore, interior design often tends toward minimalism. Of course, one might argue that the shift from a bourgeois home full of massive furniture has long been replaced by more functional and sleek living space, a development that is also manifest in the shift from a mechanical age to today's liquid, if not gaseous, societies. At the same time, widespread talk about the millennial preoccupation beyond personal property are part of a ruse put on by champions of the gig economies and their followers. Despite the ubiquitous demands to declutter personal space for quick economic gains, the dream of owning a home, a car, and a certain amount of material things is very much alive not merely among

³⁶ Kate Conger, "Airbnb releases first transparency report on government requests for user data," *TechCrunch*, September 2, 2016, <https://techcrunch.com/2016/09/02/airbnb-first-transparency-report/>.

today's elites. The problems, however, only start here, as the services facilitating the liquidating of personal property are inexorably tied to a logic in which each transaction is not only profitable in its own right but crucially constitutes another building block in establishing corporate metrics at virtually every human and nonhuman interface. Thus, the extended gig economy components of misdirection ensure that the ostensible benefits of short term compensation are ultimately absorbed and inconspicuously transformed into more wealth and power for the platforms facilitating these exchanges.

Drawing these connections is important, because many of the disenfranchising and disadvantaging processes in the gig economy have ample precedents in earlier economic forms. Nevertheless, what warrants a special scrutiny of Airbnb is the efficiency in which users are enclosed in milieus of simulated entrepreneurship and financial nimbleness, while traditional forms of wealth continue to drive economic inequality further apart. Indeed, conventional affluence meets its perfect match in the emerging gig economy, not least as transactions become increasingly simplified and automated. Thus, gig economy firms' implicit mission of gradually eroding city, state, federal, and international bureaucracies translate visibly to their application interfaces, as the following section elaborates. Excessive wealth often coincides with surging profit margins, while the daily bureaucratic hustle to keep the sharing business afloat is significantly reduced. Among other things the gig economy, in this view, automates wealth by pushing against regulation and streamlining the modes of financial transaction. On the opposite side of the spectrum, the road to extract additional income from less advantageous starting points is paved with more obstacles. Lower economic classes, accordingly, are doubly taxed, as they not only encounter more practical hurdles in the enterprise of liquidating their property but also carry the cultural burden of serving as Airbnb's equalitarian image.

Understanding the Airbnb economy means recognizing that free markets are mostly free for large providers to impose cartel and monopoly-pricing strategies. The implications of these practices paired with Airbnb's insistence that the spoils will eventually trickle down,³⁷ increasingly negatively affect middle and lower-class home owners. Though many of these

³⁷ "Airbnb: A New Resource for Middle Class Families," *Airbnb*, <http://www.airbnbaction.com/wp-content/uploads/2015/10/Middle-Class-Economic-Report-FINAL.pdf>.

groups continue to endorse Airbnb's project, as it offers them increased security and flexibility, the competitive nature of the hospitality gig economy remains widely unnoticed. The firm's interface and its corporate presentation strategically conceal the inherent problematics, rendering the market simultaneously appealing and perilous. In a perceptive take on the milieu effect, columnist Nathan Heller writes,

It is undeniably good to be earning fifty-five hundred dollars a year by Airbnb-ing your home in deep Queens—so good, it may not bother you to learn that your banker cousin earns ten times that from his swank West Village pad. [...] But now imagine that the guy who lives two doors down from you gets ideas. His finances aren't as tight as yours, and he decides to reinvest part of his Airbnb income in new furniture and a greeting service. His ratings go up. Perhaps he nudges up his prices in response, or maybe he keeps them low, to get a high volume of patronage. Now your listing is no longer competitive in your neighborhood. How long before the market leaves you behind?³⁸

In this passage, Heller notes the divisive functions of a business model, which invariably prescribes more sharing for lower wealth classes, while securing higher earnings for the already well-off via leveraged advantage. Even in lower tier neighborhoods, Heller's example applies, only that in these spaces the consequences become immediately direr, as the previous examples in New Orleans and Berlin have shown. The milieu, meanwhile, hardly allows for such systemic variances to become visible. Indeed, this kind of imperceptibility is a key feature in the way the Airbnb gig economy works so well for some. Increasingly, the truly lucrative activities in this context play out outside the public purview. Accordingly, the same dynamics detailed in Berlin's struggle over professional listings take place on a global scale in cities seeking to bridle the surge of quasi hotels and untaxed long-term rentals. Aside from the quasi-legal commercial landlords exploiting the almost tax-free zones of the gig economy, flush home sharers in upscale urban quarters have similar effects on rising rents, new gentrification, and growing inequality, while remaining safely within the community shield of Airbnb.

The fictional cousin in Heller's depiction may choose to further optimize his offer on Airbnb while decreasing his own involvement by enlisting a luxury management service such as

³⁸ Nathan Heller, "Is the Gig Economy Working?" *The New Yorker*, May 15, 2017, <https://www.newyorker.com/magazine/2017/05/15/is-the-gig-economy-working>.

Happy Host and MetroButler. These firms provide services like assessing value, handling bookings and cleanings, and smaller but often quite laborious tasks for clients in high-margin neighborhoods. Adding yet another layer to the gig economy, services such as Happy Host are more likely to employ temporary workers than trained service industry staff, thus fittingly embodying two major criticisms of the gig economy, namely the widening chasm among the so-called 80% and the crowding-out effect, the phenomenon of formerly white-collar workers engaging in traditionally blue and pink-collar professions. In many ways, these greeting services recall an original gig economy of low income workers, whose professions were always uncertain but are now doubly precarious, as cleaning and greeting services become further integrated into the mechanisms of larger gig platforms, in this case Airbnb and its extensions, though the same services might well be distributed through TaskRabbit, an online labor market that mainly but not exclusively involves conventional blue and pink-collar work. In the Airbnb milieu, however, such larger contexts give way to the processing and completion of narrower tasks, thus realizing the translation from an ideology of what Jacob Hacker terms “the personal responsibility crusade”³⁹ into a simple yet enticing application interface capturing users in an environment in which nothing but their own choices determine economic success.

With respect to interfaces, Airbnb operates akin to Uber in that it not only utilizes some of the same software tools⁴⁰ but also seeks to continuously adjust its design in efforts of tying hosts and guests more closely to the service. Again, one need not look any further than *Wired* to find an embellished description of this development. As one article reads in justification of sleeker design choices, “Hosts [...] are essentially running a small side business. They need to track earnings, get rooms cleaned on time, and provide a de facto concierge service.”⁴¹ The implemented updates produce swifter response times on behalf of home sharers, for instance, by programming certain hierarchies of information and accessibility into the application interface. Respectively, from a host perspective the redesigned dashboard now resembles a

³⁹ See Jacob Hacker, *The Great Shift: The New Economic Insecurity and the Decline of the American Dream* (Oxford: Oxford University Press, 2008).

⁴⁰ Mark Wilson, “The Airbnb Tool That’s Changing UI Design,” *FastCompany*, August 23, 2017, <https://www.fastcodesign.com/90137495/the-airbnb-tool-thats-changing-ui-design>.

⁴¹ Margaret Rhodes, “Airbnb’s Redesigned Tools Make it Easier to Be a Good Host,” *Wired*, November 12, 2015, <https://www.wired.com/2015/11/airbnbs-redesigned-tools-make-it-easier-to-be-a-good-host/>.

calendar, rather than an inbox, assuring that sharers stay on top of their booking itineraries. Likewise, the actual inbox is now positioned right on the application home screen, effectively reducing the required number of clicks from four to one.⁴² Moreover, the augmented dashboard, recalling Uber's forward projection feature, displays four times the number of future reservations, which upon completion calculate ratings relative to category and month, as opposed to aggregate scores.⁴³ Again, the trajectory toward an algorithmically-driven potentiality arises. Beyond mere improvements in terms of simplicity and convenience, such continuous changes are geared toward producing efficiently performing gig economy subjectivities, competitive entrepreneurs of the self, unphased by the underlying codes that differentiate success in the same marketplace.

Whereas the precise modes of pricing, distributing, and incentivizing remain proprietary, decoding the user displays hardly requires the insights of Airbnb's upper programming cadres. In fact, the rationale behind most redesign campaigns is part of a familiar tool kit among gig economy companies and social media platforms in general. Like Uber's creative deployment of enticements to keep its drivers on the road, Airbnb tempts home-sharers to continue renting that vacant space. According to a program instituted in 2015, the platform systematically encourages hosts to reach the so-called superhost status, an upgrade that, in some cases, comes with corporate recognition displayed on the Airbnb website. According to the same source, requirements to receive a superhost badge stipulate hosting 10 trips per year, maintaining at least a 90% response rate, hitting an 80% share of five-star ratings, and committing to honor reservations. Though technically anyone qualifies for a superhost badge, only about 7% of users make up this elite group.⁴⁴ Benefits include a higher degree of visibility in search results, invites to exclusive Airbnb events, and overall increased credibility as a host. Not surprisingly, there are plenty of how-to guides available online for attaining this distinction. Helpful among other strategies, according to one guide, are bots that

⁴² Sarah Perez, "Airbnb revamps its app with new tools for hosts, improved messaging," *TechCrunch*, September 27, 2016, <https://techcrunch.com/2016/09/27/airbnb-revamps-its-app-with-new-tools-for-hosts-improved-messaging/>.

⁴³ Ibid.

⁴⁴ Brian X. Chen, "The Guide to Being an Airbnb Superhost," *The New York Times*, January 11, 2017, <https://www.nytimes.com/2017/01/11/technology/personaltech/the-guide-to-being-an-airbnb-superhost.html>.

respond to guest inquiries at night, boosting the host's overall availability level. Even a generic response at night, with a potential day-time follow-up, might slightly improve another user's experience, thus bettering market relations. Simply part of the trust economy, some might say, but the ruthless commodification of time inherent in these reward-based systems might as well be the new norm. Their effects simply can't be ignored by other users who may opt to employ more conventional means to get ahead but eventually underlie the same economic imperatives. Concretely, the injunction for "24/7" responsiveness on the part of hosts, as media theorist Jonathan Crary observes, "is shaped around individual goals of competitiveness, advancement, acquisitiveness, personal security, and comfort at the expense of others."⁴⁵

The rendering productive of sleep via machinic assemblage is part and parcel of an Airbnb milieu that constantly expands the modes of extraction and optimization for profits. Meanwhile, what Airbnb heralds as innovation is, in fact, better theorized as a rebranding of systematic impositions into individual virtues to be unleashed. Fortunately for Airbnb, third parties contribute welcome support in further popularizing such incentive-driven programs. Indeed, the calls to aspire to superhost status merely scratch the surface, as a myriad of content has emerged to advise readers on how to make it in the gig economy.⁴⁶ According to these self-made-do-it-yourself-prophets, there are numerous ways to improve guests' experiences far beyond the standard Airbnb's community expectations. Whereas conscientious Uber drivers offer passengers phone chargers, water, or gum, a high-flying Airbnb host might include toiletries, snacks, nightlife recommendations, or multimedia access in their rental. Though these upgrades remain voluntary, the cultural economy evolving around the gig economy contains an undeniable force in which the incessant economization of minutiae translates to tangible differences in ratings and, thus, affects real earnings. The ambiguity inherent in the irresistible, yet discretionary impulse to perk up one's home for guests is ultimately drowned out by the resulting gratification mediated by positive reviews and higher earnings.

⁴⁵ Jonathan Crary, *24/7: Terminal Capitalism and the Ends of Sleep* (London: Verso, 2014), 41.

⁴⁶ See, for example, Jasper Ribbers and Huzefa Kapadia, *Get Paid for Your Pad: How to Maximize Profit From Your Airbnb Listing* (San Francisco: Lifestyle Entrepreneurs Press, 2016); Diane Mulcahy, *The Gig Economy: The Complete Guide to Getting Better Work, Taking More Time Off, and Financing the Life You Want* (New York: American Managers Association, 2017).

Frédéric Lordon asks in *Willing Slaves of Capital*, “Why, and how do workers return to work?”⁴⁷ In the Airbnb economy the question is instead, “why and how do they turn their home into work?” A thoughtful response, it has been suggested, must delineate a desiring subjectivity “in an era in which motivation, self-motivation, and the entrepreneurial spirit have become at least the cultural norm, if not the material reality, of contemporary capitalism.”⁴⁸ One might also think about describing the Airbnb milieu in the words of Byung-Chul Han who writes, “In this society of compulsion, everyone carries a work camp inside. [...] One is simultaneously prisoner and guard, victim and perpetrator.”⁴⁹ Given the internalization of productivity, not even today’s masters can consider themselves free from the constraints wrought by their own systems. It would, however, be imprudent to proclaim the age of an evenly distributed voluntary servitude, as not everyone living by the dogma of today’s motivational watchwords are equally enslaved. Rather, in the milieu the imperatives to maximize one’s own (im)material assemblage are disproportionately coded and, in many cases automated, consistent with a set of parameters of wealth, power, and visibility.

The Airbnb economy assumes the role of a quasi-indiscernible power differential in which interfaces adhere to similar, if not identical design among different users, while actually treating users distinctly according to sociopolitical, socioeconomic, demographic, or geographic qualifiers. Thus, the corporate arbiters of gigs and sharing capitalize on several levels. Culturally, they seamlessly appropriate and further advance techno-optimistic narratives of innovation and empowerment, selling their services as quasi-DIY formulas to the masses. Airbnb, in this regard, stresses the innovative agency of its hosts, presenting itself merely as a subtle purveyor, while elevating select home sharers as illustrations in how to let creative energy spill over into home decor. Respectively, an Airbnb blog suggests hosts help prospective guests envision their stay by spelling it out for them: “Open a cookbook on the counter or put a

⁴⁷ Frédéric Lordon, *Willing Slaves of Capital: Spinoza and Marx on Desire* (London: Verso, 2014).

⁴⁸ Jason Read, “Of Labor and Human Bondage: Spinoza, Marx, and the “Willing Slaves” of Capitalism,” *LA Review of Books*, December 9, 2014, <https://lareviewofbooks.org/article/labor-human-bondage-spinoza-marx-willing-slaves-capitalism/#!>.

⁴⁹ Byung-Chul Han, *The Burnout Society* (Stanford: Stanford University Press, 2015), 19.

carafe of water and a novel by the bed.”⁵⁰ Likewise, Airbnb eagerly directs attention to its strong ties to the arts, aiding, for instance, Toronto’s creative scene by “provid[ing] artists with a flexible way to support their craft and contribute to their communities.”⁵¹ Meanwhile, in economic terms, Airbnb is not only susceptible but quite accepting of larger entities exploiting the collaborative veneer for massive and undisclosed capital gains. In short, while it may be the case that Airbnb provides the means for many people to deal with personal hardships, their operations are as fluid as capital itself. Diligently working toward undoing any detrimental regulation, Airbnb is committed to support people’s economic status, only if that demographic base yields financial gains.

Against the background of these observations, some questions arise in the same vein as Uber’s relationship to its workforce and the prospects of further automating drivers by introducing self-driving fleets. With respect to Airbnb, one might ask, to what extent does Airbnb rely on people actually owning their houses compared to other types of arrangements? Stated differently, how far can campaigns featuring simultaneously empowered and dispossessed home sharers go? What would be the implications of a more regulated Airbnb economy in terms of the cultural imperatives to self-enterprise around the clock? Though I offer broader future outlooks regarding the future of work in chapter five, tentatively, I suggest that these concerns must be extrapolated from within the gig economy modes of accumulation. The next section, then, attempts to make apparent the ways in which the Airbnb economy serves as an asymmetric nexus of power in which unfavorable (pre)conditions lead to an intensified involvement in increasingly precarious activities.

4. The Nexus of Property, Algorithms, and Visibility

As the previous sections indicate, Airbnb’s practices are likely to adversely impact the urban areas in which it operates. For instance, the firm’s metrics of evaluating properties according to individual ratings and returns might put increasing pressures on other people in

⁵⁰ Meredith Baer, “Attract more Guests: 10 Simple Tips From Home Staging Expert Meredith Baer,” *Airbnb*, April 17, 2014, <https://blog.airbnb.com/attract-guests-10-simple-tips-home-staging-expert-meridith-baer/>.

⁵¹ “Creative hosts on Airbnb Toronto,” *Airbnb*, September 11, 2017, <https://www.airbnbcitizen.com/creative-hosts-on-airbnb-toronto/>.

the same neighborhood by relative devaluation or driving up rents. The previous discussion, however, also demonstrates the extent of Airbnb's concerns about its own image as a positive force for global communities. Even though these presentations are evidently strategic, it is plausible that Airbnb will continue to work with lawmakers to work out basic, if ultimately more advantageous tax codes, zoning laws, and other rent specific regulations.⁵² At the same time, the partial willingness of gig economy firms to observe existing regulations should not lead to complacency on the part of critical observers. Instead, like the Uber business model, the Airbnb counterpart is here to stay either alongside or in constant friction with regulatory institutions. As it stands, a grounded account on Airbnb must acknowledge the firm's opting to maintain, if not exacerbate, asymmetrical power relations through their impenetrable information politics, though it will probably have to make some concessions along the way.

Recalling the case of Uber, research demonstrates how the company masks computations organizing the distribution of drivers and the dynamics of pricing during surges,⁵³ frequently leaving drivers in a position of blind trust concerning the feasibility of the next few rides. Similarly, the gamified graphics indicating an almost reached goal or upcoming fares in specific areas have more affinities to gambling than precise, information-based consulting. Not surprisingly, Airbnb employs comparable strategies regarding the targeting of prospective users and the manipulation of supply and demand of temporary housing. Thus, Airbnb shares with Uber the aim of projecting near complete coverage for its network, which means that it aims to meet user demand of finding convenient lodging in any given area of destination. Within that area, Airbnb further provides the user with options in terms of pricing, relative position, number of available rooms, and so on. From this distributive angle, the backstory of any given home sharer in the target area is incidental. That is, to Airbnb's technical functioning it hardly matters, if a temporary home is creatively designed or generically made to look that way. Likewise, whether a host's livelihood is on the line by renting a given asset, has little impact on

⁵² Marcus Wohlsen, "Airbnb Tries to Grow Up, Finally Agrees to Collect Taxes in Two Cities," *Wired*, April 1, 2014, <https://www.wired.com/2014/04/instead-of-fighting-cities-airbnb-tries-to-grow-up/>.

⁵³ Alex Rosenblat and Luke Stark, "Algorithmic Labor and Information Asymmetries: A Case Study of Uber's Drivers," *International Journal of Communication* 10, (2015), 3758-3784.

how Airbnb appropriates each available listing as an available potentiality to project into the demand side of the marketplace.

Though from a purely economic standpoint Airbnb has no reason to discriminate against hosts listing more than one property, the firm is careful enough to discourage these practices in accordance with local laws, such as in New York City or San Francisco. In New York, for instance, long-term rentals of entire apartments are prohibited but Airbnb encourages hosts to exploit a loophole in which individual rooms within an apartment may be listed. If Uber fares may entail the occasional awkward silence, in the context of Airbnb it is quite possible to receive a hosts' warning about overly nosy neighbors who despair at the sight of frequent tourists. If feasible, Airbnb challenges these regulations, as seen in Berlin and New Orleans. In key locations where legislation might be controversial or ambiguous, the firm is careful to emphasize the amount of single listing hosts to sway public opinion. In that sense, Airbnb understands the need to project a certain image. Specifically, Airbnb crafts a picture in which individual hosts make up the majority of listings, corroborating the significance of framing numbers in a favorable fashion.⁵⁴ The tendencies in Airbnb's presentation are evident: a strong emphasis on community serves a tangible purpose, namely that each additional ordinary host allows the firm to portray statistics, to further obscure its main revenue sources. Selectively publicized recognition showcases individuals who excel in the Airbnb economy or, in some cases, file lawsuits against city governments. A specific example of this approach, which might be considered as Airbnb's community shield, is evident in the firm's interpretation of data for its New York City market. Accordingly, statistics from November 2014 to November 2015 reveal that 1.4% of hosts who offered three or more listings, accounted for 24% of revenue.⁵⁵ Airbnb favors a perspective on these numbers that better communicates agreeable community relations and widely distributed opportunities for supplemental incomes. Consequently, the firm projects that in 2016 "hosts with one or two listings will be earning 93% of revenue."⁵⁶ More interesting than

⁵⁴ Allison Griswold, "Airbnb has a really convoluted process for being 'transparent' with New York City," *Quartz*, December 15, 2015, <https://qz.com/571165/airbnb-is-sharing-more-data-but-in-a-really-convoluted-way/>.

⁵⁵ Ibid.

⁵⁶ Ibid.

fact-checking these numbers, however, is to highlight the suspiciously broad metrics Airbnb employs in presenting its data dumps.

Specifically, it appears that the more Airbnb invokes means and median values, the more indicting statistical aberrations tend to be. Though regulating agencies such as ShareBetter critically scrutinize the firm's extenuating assessment of its own data sets,⁵⁷ odds are that in the long term Airbnb's obfuscating practices will normalize. Consequently, the firm's public appearance must be conceptualized as an integral part of its primary application design, for even though each additional low or middle-class host only marginally adds to the firm's financial returns, the effect on Airbnb's public relations, meanwhile, is considerably more lucrative. In this view, such algorithmic work is not at all confined to search and pricing mechanisms but, importantly, manifests in Airbnb's marketing efforts and its overall approach toward urban communities, city officials, and regulating bodies. To bring home the claim that Airbnb's community shield is inextricably tied to its computation and design strategies, it is instructive to juxtapose the \$8 million Airbnb spent in lobbying efforts against San Francisco's Proposition F, a piece of legislation aimed to limit Airbnb's operations,⁵⁸ and the firm's extensive publicity campaigns to simultaneously construe its user base as a movement. After all, according to the feel-good rhetoric of the *Airbnbcitizen* Blog, "Airbnb hosts and guests are not just a community, they represent a people-to-people movement that is, getting stronger as the days grow longer."⁵⁹

In this context, a peculiar combine of visibility and invisibility materializes in that wealth tends toward invisibility and (relative) poverty coincides with increased visibility. For most workers in the gig economy an invasive visibility is part and parcel of their material reality. Meanwhile, as the previous discussion shows, wealth begets more wealth not only by fabricated common sense and camouflaged statistics but by profitable computational tools, whose primary application is the automation of passive capital gains. Airbnb casts a wide net to attract more users into its network while methodically obscuring its main sources of revenue. In

⁵⁷ Rebecca McCray, "Airbnb Releases Host Data, but Activists Say It Doesn't Add Up," *TakePart*, December 3, 2015, <http://www.takepart.com/article/2015/12/03/airbnb/>.

⁵⁸ *Ibid.*

⁵⁹ "Organizing in Cities: The Airbnb Host Movement," *Airbnbcitizen*, November 5, 2015, <https://www.airbnbcitizen.com/organizing-in-100-cities-the-airbnb-host-movement/>.

this context, Airbnb and other gig economy firms utilize online tracking and surveilling tools so that any visitor to the corporate website receives a free of charge financial estimate for joining the network. Concretely, simply hovering over the “become a host” field creates a pop-up, which reads, “You could earn \$ [value] sharing your home in [location] in a week. Become a host.” The estimate is generated based on IP location and the average host revenues for that area, though other means of client triangulation are conceivable. Likewise, the social media application Instagram features Airbnb adverts based on specific search results on the marketplace. For instance, if users search Airbnb for a specific area without booking, Instagram follows up with available lodging opportunities in that same area. In either case, Airbnb specifically resorts to surveillance technologies that have become common online practice in recent years.⁶⁰ In the ecosystem of asymmetrical online networks and gig economy algorithms the dynamics of visibility and exposure are intimately intertwined with the sociotechnological reproduction of inequality.

Precisely such business models of pervasive tracking and insidious advertising add an extra layer of concern to the discussion. Though many online services promise to better disclose (or limit) their surveillance and data-mining techniques, given the existing economic and political frameworks, the systems of attention capture known from social media, are likely to continue infiltrate the gig economic networks. Thus, the question, “what happens to labor?” remains crucial, even if stricter regulation is passed. If, for instance, YouTube or Facebook algorithms work toward keeping users involved in certain online environments, insidious computing in the gig economy would increasingly entangle workers in informalized labor circuits. To some degree, these dynamics can already be observed in the hybrids of autocatalytic computer systems and institutional inequality of today’s welfare state. According to Virginia Eubank, for instance, disadvantaged individuals registering for social services such as food stamps or Medicaid get caught in prefigured mechanisms in which their highly precarious economic status intensifies.⁶¹ Lower income populations already encounter increased

⁶⁰ See, for example, Byung-Chul Han and Eric Butler, *The Transparency Society* (Stanford: Stanford University Press, 2015).

⁶¹ See Virginia Eubanks, *Automating Inequality: How high-tech tools profile, police, and punish the poor* (New York: St. Martin's Press, 2017).

socioeconomic discrimination relative extent with which they enroll in government programs. As Eubank observes, “In the past, during times of economic hardship, America’s elite threw the poor under the bus. Today, they are handing the keys to alleviating poverty over to a robotic driver.”⁶² In the gig economy, these implications may manifest subtly or forthrightly. On the one hand the continuous proliferation of surveillance apparatuses might simply lead to a certain set of search results, advertisements, and partial suggestions to earn additional income, based on users’ online and offline activity. More overtly, extended engagement in the gig economy might increasingly push gig workers into spheres of lower income populations who already encounter algorithmic discrimination. Such distributive dynamics that have been unevenly automated for decades might well intensify in the context of a normalized gig economy.

The other side of the same coin, meanwhile, is that wealth corresponds to opportunities to participate in the same markets at better conditions, as seen in the blossoming concierge services thriving on Airbnb’s practices of virtual and material gentrification. Under the veil of empowerment for the working class, high-end properties in affluent neighborhoods passively generate substantial revenues, thus enabling their proprietors to liberally allocate time and resources elsewhere. Here, the gig economy seems to function according to its optimistic script, only that the generous profits are simply a result of combining existing wealth with highly deregulated markets and hi-tech tools. Meanwhile, the poor happen upon waves of incentives to participate in the regimes of endlessly economizing their already scarce time and limited possessions. In these regimes, visibility accompanies traceability in that increased activity in the gig economy, informalized labor, and aid programs amount to damning data packages that precede their owners. Even if the gig economy provides temporary relief for lower income classes, the more visible people become in these networks, the less likely they might be to overcome systemic obstacles. As informalized economies expand, their stakeholders continue to disestablish institutional accountability and instead implicate the individual as the bearer of reliability. Even if firms and regulators were to improve their cooperation with the public, at the current rate anyways, one may anticipate future work conditions in which corporate interfaces

⁶² Ibid., 193.

entirely cache the actual wellsprings of their economic growth while appealing to precarity-stricken managers of their Me Incorporated.

5. Conclusion

To conclude, the present chapter presents a discussion on Airbnb, one of the most popular marketplaces in the gig economy, against the larger context of drastically increasing wealth gaps. On one side the owners and investors of digital infrastructures—without whom any scalable services from mobility to labor itself have become unimaginable—solidify their dominance by cartelizing and monopolizing key logistics and marketplaces. By the same token, the misleading expression of free market capitalism predominantly applies to the fabricated markets in which individualized masses embrace the mandate of full-time entrepreneurship that has almost fully eroded anything resembling tangible institutions of public solidarity. Instead, recalling Crary’s critique of uninterrupted industriousness in which a goal-oriented, competitive subjectivity is devised, deregulation at the macro level is enmeshed with deregulation at the micro level. In other words, while Airbnb chips away at public institutions and becomes itself a powerful regulator, within the marketplace ambitious superhosts are generated in processes of “neoliberal perfectionism.”⁶³ Accordingly, “meritocracy—the idea that social and professional status are the direct outcomes of individual intelligence, virtue, and hard work—convinces isolated individuals that failure to ascend is a sign of inherent worthlessness.”⁶⁴

Airbnb hardly constitutes the only or even the most pressing context in this regard. At the same time, as the analyses of application interface and wider discourse illustrate, the firm nonetheless marks an instructional case with respect to how refined, captivating, and utterly opaque today’s gig economy milieus have become. Though other service providers might hold greater sway over individual (mis)fortunes, Airbnb exhibits important characteristics of a prototype that invests substantial financial resources into market expansion and into the

⁶³ Thomas Curran and Andrew P. Hill, “Perfectionism Is Increasing Over Time: A Meta-Analysis of Birth Cohort Differences From 1989 to 2016,” *Psychological Bulletin*, (2017).

⁶⁴ Meagan Day, “Under Neoliberalism, You Can Be Your Own Tyrannical Boss,” *Jacobin*, January 22, 2018, <https://www.jacobinmag.com/2018/01/under-neoliberalism-you-can-be-your-own-tyrannical-boss>.

fabrication of a community of creative, cultured, and open-minded home-sharers. The advantage here is twofold, as Airbnb systematically plays down the fact that its users are effectively competing for ratings, visits, and often the value of listings and real estate. Meanwhile, the firm uses its community shield to wage legal battles, particularly in cities with pesky housing and hospitality regulation. Airbnb is, therefore, accountable for creating yet another sphere in which precariousness is transformed into predictable resourcefulness. The startup actively generates milieus that accentuate individual choice, while larger contexts are purposefully clouded. From a critical perspective, the carefully crafted discourses around trendy notions of communities and movements register not only as elaborate advertisement but as integral tools to create a certain social environment, a culture in which a subjective relationship to the Airbnb marketplace takes precedent over how that marketplace actually sustains its operations.

The lessons from the discussion extend beyond the Airbnb gig economy. Concretely, the notion that Airbnb amounts to a kind of prism to overlook structural inequality implicates the firm as part and parcel of a larger capitalist erosion of a meaningful public sphere. Consider, for instance, a recent survey suggesting that Silicon Valley residents earning up to \$400,000 in a year self-identify as middle-class.⁶⁵ The high costs of living and the demographic make-up, which is heavily tilted toward tech programmers and other high-paying jobs, create a socioeconomic bubble in which actual middle-class incomes, much less the erosion of middle class as a salient category, are rendered inconsequential. Airbnb, I suggest, automates and multiplies such effects by employing interfaces that consist of more than software and devices. In the gig economy of Airbnb, groups and individuals at the lower ends of inequality statistics become increasingly trapped in pseudo-entrepreneurial environments that attract users with appeals to flexibility and self-reliance. The other side of visibility plays out within the Airbnb milieu as matters of traceability and susceptibility in that activity in precarious contexts predicate future terms of accumulation. Whether simply by being strapped for time, receiving

⁶⁵ Abby Jackson, "Silicon Valley is so expensive, people who make \$400,000 think they're middle class – here's what middle class actually is in the 25 largest US cities," *Business Insider*, February 21, 2018, <https://www.businessinsider.in/Silicon-Valley-is-so-expensive-people-who-make-400000-think-theyre-middle-class-heres-what-middle-class-actually-is-in-the-25-largest-US-cities/articleshow/63020115.cms>.

targeted advertisement, or risking bad credit reports by enrolling in certain programs, the comforts of consumer automation hardly trickle down evenly. In fact, the cold calculus behind polished transaction interfaces and the extended media outlets for corporate and technologist mediations raise another urgent stake, namely that of the social and cultural role of economic activity. Thus, reminiscent of the ideal types in the Uber economy, the quiet Uber driver, and the complacent Airbnb host, whose creativity is concentrated on furnishing the optimal Airbnb experience, one must increasingly wonder, what types of activity might register as work in the future?

Chapter Four

Amazon Mechanical Turk: In the Twilight of Automation

1. Introduction

The aim of the present chapter is to continue the previous discussion by juxtaposing various types of automation in the context of digital economies. Specifically, I compare how automation plays out for the corporate movers versus those who are moved. Integrating an overview of Amazon's vast corporate network with experiential accounts from its data marketplace Amazon Mechanical Turk (AMT), I demonstrate the ways in which automation constitutes something of a twilight zone where workers are never completely replaced by robots or artificial intelligence but are rather made to act to a greater extent according to machine logics. On this note, familiar dynamics from the previous examples in the gig economy also occur in the context of AMT, a service that crowdsources relatively small tasks at the behalf of remote employers. Like the logic of frictionless service in Uber and Airbnb, AMT is largely based on automated mechanisms generating ontic spaces of constant availability, thus exposing workers to the heightened demands of corporate capital gains. In light of these imperatives, the case of AMT illustrates how Amazon's fastidious business rationale in many ways turns into scrupulous working conditions. After all, in the eyes of Amazon's relentless growth machine, whether a certain task is handled by a robot or a human, makes little difference since Jeff Bezos' empire seems much less beholden to public opinion than relatively smaller gig economy startups. As in previous gig economies, AMT's programmed hierarchies and asymmetries pose serious challenges to an increasingly precarious class of workers. Indeed, AMT's connectedness to a worldwide precarious class, exposes the hyper-competitiveness and intense informalization as a global phenomenon. Nevertheless, to the extent that AMT's tasking crowd resides largely in the United States, the familiar tropes of self-reliance and autonomy apply. That is, the processes of highly informalized digital labor unfold ambivalently, in that modes of exacerbated precarization coincide with discourses of agency and flexibility on the part of workers.

The effects of these uncertain developments, not least the declining quality of jobs, underscore the need to elevate the social and cultural trajectories of work relative to purely technological and (macro)economic concerns. Employing social and cultural perspectives, I suspect that at the current rate, the proliferation of taskified online labor and industrial automation will result in more leisure time and autonomy only for a moneyed minority. For the majority of workers, meanwhile, a semi-automated future portends to produce more low-quality, low-pay, and low-security employment. At the same time, even in the context of Amazon's rather straightforward business model, which continues to bring to light numerous accounts of worker mistreatment, moments of ambiguity remain. Specifically, AMT is at least in part perceived as a space that grants some economic freedoms and for many people offers valuable alternatives of earning income, whether as primary or supplementary source. Concretely, I show in this chapter how AMT attracts a relatively diverse crowd, which not only accepts the terms of service but, in many cases, defends its quasi-machinic participation in the big-data circuits of today's information society. Importantly, AMT is hardly made up of a bunch of apathetic crowd workers. Instead, the marketplace has spawned deep networks of engaged micro workers and digital activists who together compose AMT's equivalent to the motility manifest in various online user forums. The discussion shows that the motivations for AMT workers (insiders use the term "Turkers" whereas Amazon speaks of "Taskers") to mobilize are, in many ways, comparable to those in other active gig economy milieus.

As the previous chapters indicate, Uber drivers and Airbnb hosts navigate, each in their own ways, technological and discursive environments that by design conceal and distort crucial information. The Uber application, for instance, might suggest that a surge (a more lucrative earning period) lies directly ahead in a certain geographic location, while in reality the firm seeks to redirect drivers in such a way as to provide a ubiquitous coverage to ride-hailers. In the same vein, Airbnb's latest design changes mimic the tendency toward instantaneity in the form of, for instance, increased availability of hosts by way of more accessible messaging functions. Likewise, both Uber and Airbnb have track records of concealing relevant information not only from their visible application interfaces but from surrounding discourses and regulating bodies. These trends are evident in Uber's ghosting tactics aimed at obstructing officials and Airbnb's

elaborate marketing campaigns that methodically obscure the firm's detrimental effects on urban housing markets. Furthermore, the discursive campaigns of gig economy firms are not easily separable from the devices on which they are projected. Thus, it is critical to theorize the interface as a political and cultural object beyond the scope of a smart phone or a laptop screen. As Galloway observes, "The interface is ultimately something beyond the screen. It has only a superficial relationship to the surfaces of digital devices, those skins that beg to be touched. Rather, the interface is a general technique of mediation evident at all levels."¹ In this vein, I contend that delineating AMT's microlabor as a twilight of automation constitutes yet another intervention into the undiscerning paeans of technology and innovation. This critique seems particularly necessary in the context of AMT, which coincides with techno-utopian narratives due to its key characteristics of efficiently distributing information and undermining conventional corporate structures. Then again, the intensified crowdsourcing of AMT must be situated in a broader continuum of flexibilization, financialization, as well as the rise of shareholder value and deregulatory measures.

In theoretical terms, construing the interface as an analog to ideology rather than fetishizing its supposed neutrality, marks a crucial step in addressing the hypocrisy inherent in the pervasive talks of enhanced opportunities for workers to connect and multiply their chances to extra income. In one view, the pretension of the interface may be considered akin to the obvious astroturfing of Airbnb's community-centered discourse. Though there is clearly something insincere about the notion of an authentic Airbnb community, there is also a sense in which Airbnb challenges the romanticism inherent in the idea of an authentic pre-Airbnb community. The base economic impulse to rent for profit clearly precedes the Airbnb economy. The computational interface displays a similar characteristic in that it inevitably denies a certain veritableness. In other words, computers perform functions in which the very output of some information necessarily coincides with the omission of other information. As Wendy Chun keenly puts the matter, "What is software, if not the very effort of making something explicit, or making something intangible visible, while at the same time rendering the visible (such as

¹ Galloway, *The Interface Effect*, 54.

the machine) invisible?"² This is neither to conflate the interface with ideology nor to overemphasize the visual aspects over all other components involved in computing, algorithms, networks, codes, protocols and the devices through which today's digitized and taskified work is mediated. Rather, it is to invoke historical and social dimensions of the interface by emphasizing that information arriving at end users is necessarily limited, though the extent of that limitation lies beyond technical determination. Indeed, the ideological character of seamless design and the facilitation of intuitive operability through applications are chief concerns in the gig economy.

In this vein, Galloway argues that "any mediating technology is obliged to erase itself to the highest degree possible in the name of unfettered communication, but in doing so it proves its own virtuosic presence as technology thereby undoing the original erasure."³ Virtuosity in this context refers to the mediation of technology manifesting its proliferation through its own quasi-erasure. In many ways, this is how the applications of Uber, Airbnb, and AMT strategically engineer their peer-to-peer allure, the veil of an open market in users can freely trade their resources. Thus, the extent to which an application erases itself, or renders itself indiscernible, directly speaks to its ideological context. In a culture in which it makes sense to consider other users as free and self-interested individuals, programming an application surface to optimize personal outcomes (in the form of higher earnings, fewer expenses, faster service, and so on) constitutes not only a reasonable practice but, importantly, a neutral one. These considerations also extend to the projects of Amazon's freelancer platform AMT. There is, however, a somewhat unique dimension to the present chapter in that it deals primarily with labor relating to data processing as a final product. While Uber and Airbnb also heavily rely on digital interfaces and online infrastructures, both markets play out in physical space, specifically in the materiality of cars and houses liquidated as services. The case of AMT also demonstrates the need to conceptualize virtual mobility as an increasingly significant feature in navigating the contemporary gig economy. Amazon is both directly and indirectly involved in the provision of goods, services, and information so that focusing merely on one of Amazon's many ventures hardly provides a representative account of the entire company. Nevertheless, the following

² Wendy Hui Kyong Chun, "On Software, or the Persistence of Visual Knowledge," *Grey Room* 18 (2004), 44.

³ Galloway, *The Interface Effect*, 62.

discussion aims to reveal important commonalities and differences between online and offline logistics against the background of a changing face of labor. Providing context to Amazon's corporate network serves to anticipate the reasoning behind Amazon's approach to logistics and, thus, situate the subsequent discussion on AMT.

2. Work in Amazon's Corporate Network

There are ample reasons to consider Amazon as a relevant case in the context of the gig economy. For one, Amazon CEO Bezos is not only substantially invested into several gig economy firms (\$37 million in Uber, \$112 million in Airbnb⁴) but also oversees numerous firms and platforms in the context of a vast corporate network, the singular name of which utterly belies its scope.⁵ The many acquisitions and investments include brands such as Whole Foods, Twitch, Kiva Systems (now Amazon Robotics), and Living Social, not to mention Amazon's bread and butter online store, its media streaming services (Amazon Prime Music, Amazon Fire, Twitch TV), and its key position in Internet server infrastructure through Amazon Web Services (AWS).⁶ The breadth of Amazon's ventures underscores the fact that Bezos' vision is not confined to a selection of especially profitable services, but rather aims at the all-around provision of on-demand modern life. Given Amazon's unequivocal success in terms of corporate growth in recent years, commentators frequently admire Bezos' "ambidexterity" in managing "incremental innovations that streamline and optimize the business's core capabilities" while also "exploring new business concepts and markets."⁷ Such praise echoes a widespread sentiment of Amazon as a purveyor of modernity, a view that aligns with the disruption narrative put forth by neoclassical economists such as Arun Sundararajan. These perspectives tend to prioritize improvements on the consumer end, while largely ignoring the role and quality of the work produced in the same context.

⁴ Jeff Desjardins, "One Chart Explains Jeff Bezos' Sprawling Empire," *Business Insider*, June 21, 2017, <http://www.businessinsider.com/jeff-bezos-sprawling-empire-in-one-chart-2017-6>.

⁵ Technically, Amazon comprises the following three segments: North America, International, and Amazon Web Services.

⁶ Nick Wingfield, "As Amazon Pushes Forward With Robots, Workers Find New Roles," *The New York Times*, September 10, 2017, <https://www.nytimes.com/2017/09/10/technology/amazon-robots-workers.html>.

⁷ Charles A. O'Reilly III and Michael L. Tushman, "The Amazon Model," *Stanford University Press*, April 7, 2016, <http://stanfordpress.typepad.com/blog/2016/04/the-amazon-model.html>.

Aside from admiration, however, Amazon's strategies of cornering key markets and predatory pricing has incurred ample scrutiny and criticism. One of the loudest critics, President Trump recently slammed Amazon for not paying enough taxes and threatening small businesses.⁸ Of course, it may well be the case that the President simply does not care much for Bezos, whose *Washington Post* frequently takes jabs at Trump's presidency. At any rate, less partisan observers also take issue with Bezos' \$740 billion behemoth "operat[ing] in nine of the 10 biggest industrial sectors in the US [and] control[ing] around 45% of the world's cloud-computing capacity."⁹ Moreover, though Amazon has received generous subsidies to open additional fulfillment centers in US cities, research by the Economic Policy Institute (EPI) suggests that while "the centers lead to a 30% increase in warehouse and storage employment, [...] the analysis found no increase in overall employment in the county and, in some cases, the data suggested a reduction in overall employment."¹⁰ Hence, recent statistics indicating that Amazon employs over 500,000 workers¹¹—more than any other technology giant and second in the US only to Walmart—need to be considered in light of several caveats. As the EPI report indicates, though Amazon creates jobs in the short term, the implications for the surrounding area are often detrimental to overall employment. Moreover, 90,000 of these jobs are a direct result of the recent \$14 billion Whole Foods acquisition,¹² while another undisclosed number likely derives from the 2017 addition of Souq.com, a Middle East e-commerce platform that cost \$580 million.¹³ Though some of the remaining jobs include relatively stable office and

⁸ Michael D. Shear, Nick Wingfield, and Cecilia Kang, "Trump Attacks Amazon, Saying It Does Not Pay Enough Taxes," *The New York Times*, March 29, 2018, <https://www.nytimes.com/2018/03/29/us/politics/trump-amazon-taxes.html>.

⁹ Rupert Neate, "The age of Amazon: a closeup examination of Bezos's behemoth," *The Guardian*, April 24, 2018, <https://www.theguardian.com/technology/2018/apr/24/the-age-of-amazon-a-closeup-examination-of-bezoss-behemoth>.

¹⁰ Dominic Rushe, "Amazon fulfillment centers don't boost employment, analysis finds," *The Guardian*, February 1, 2018, <https://www.theguardian.com/technology/2018/feb/01/amazon-fulfillment-centers-dont-boost-employment-analysis-finds>.

¹¹ Julie Bort, "Amazon now employs a whopping 542,000 people and plans to hire thousands more," *Business Insider*, October 26, 2017, <http://www.businessinsider.com/amazon-now-employs-a-whopping-542000-people-and-counting-2017-10>.

¹² Danielle Paquette, "People are worried Amazon will replace Whole Foods workers with robots," *The Washington Post*, June 16, 2017, https://www.washingtonpost.com/news/wonk/wp/2017/06/16/people-are-worried-amazon-will-replace-whole-foods-workers-with-robots/?utm_term=.5df9352fea3d.

¹³ Jon Russel, "Amazon completes its acquisition of Middle Eastern e-commerce firm Souq," *TechCrunch*, July 3, 2017, <https://techcrunch.com/2017/07/03/amazon-souq-com-completed/>.

software positions, Amazon also disclosed that most of the recent employments will be seasonal, staffing warehouses and customer support centers. Along the same line, employment statistics without context conveniently gloss over the issue of job permanence, somewhat misleadingly casting Amazon as a large-scale employer. While mainstream media celebrate the popular narrative of job creation, little attention is given to the fact that most of these jobs are not only temporary and highly volatile but, importantly, extremely taxing on workers.

A *New York Times* exposé documents Amazon's strenuous working culture, which holds employees to strict standards and openly encourages cutthroat competition.¹⁴ The piece vividly describes the algorithmic precision whereby Bezos fosters an atmosphere in which employees oscillate between "cry[ing] at their desk" and "becom[ing] addicted to Amazon's way of working."¹⁵ The relentless working conditions, presumably less so the workplace addiction, extend into every corner of the Amazon empire, not least to the many fulfillment centers, where warehouse workers are reported to relieve themselves into bottles, fearing repercussions for "excessive" bathroom breaks.¹⁶ Similarly, Amazon intends to move forward with implementing an electronic wristband "to track where an employee's hands were in relation to inventory bins, and provide 'haptic feedback' to steer the worker toward the correct bin."¹⁷ This wristband, which sounds a lot like dystopian fiction, illustrates how rigorously Amazon implements automation not merely as a human replacement but as an auxiliary force requiring human behavior to adjust to "The Amazon Way."¹⁸ Warehouse workers increasingly find themselves assisting robot arms, as opposed to the other way around. As another article describes in its analysis of similar workplace reconfigurations, "[Nissa Scott's] new job at

¹⁴ Jodi Kantor and David Steinfeld, "Inside Amazon: Wrestling Big Ideas in a Bruising Workplace," *The New York Times*, August 15, 2015, <https://www.nytimes.com/2015/08/16/technology/inside-amazon-wrestling-big-ideas-in-a-bruising-workplace.html>.

¹⁵ Ibid.

¹⁶ Shona Ghosh, "Undercover author finds Amazon warehouse workers in UK 'peed in bottles' over fears of being punished for taking a break," *Business Insider*, April 16, 2018, <http://www.businessinsider.com/amazon-warehouse-workers-have-to-pee-into-bottles-2018-4>.

¹⁷ Ceylan Yeginsu, "If Workers Slack Off, the Wristband Will Know. (And Amazon Has a Patent for It.)," *The New York Times*, February 1, 2018, <https://www.nytimes.com/2018/02/01/technology/amazon-wristband-tracking-privacy.html>.

¹⁸ John Rossman, *The Amazon Way: 14 Leadership Principles Behind the World's Most Disruptive Company* (Clyde Hill: Clyde Hill Publishing, 2016).

Amazon is to babysit several robots at a time, troubleshooting them when necessary and making sure they have bins to load.”¹⁹

In short, the pattern underlying both Amazon’s white and blue-collar work manifests in the diligence toward streamlining services, whether this means working according to algorithmic reasoning to expand the firm’s commercial reach or laboring alongside robotics to maximize efficiency in fulfillment centers. Despite such common dynamics, Amazon’s office workers hardly face working conditions similar to their distribution center colleagues. Landing a corporate job in Bezos’ empire invariably coincides with a higher pay and more security than toiling in one of over 75 North American fulfillment centers, where jobs are often temporary and overall more precarious.²⁰ Though Amazon ranks as number two in nationwide employment, most of this work revolves around the firm’s retail and marketplace business, a job description that entails the constant presence of the specter of automation. Moreover, though Amazon’s retail business, including its package delivery, may be its most best-known segment, AWS corresponds the company’s most profitable division.²¹ In the context of AWS, the politics of automation nonetheless play out in familiar fashion in that fewer core employees handle the maintenance of a proprietary platform that allows for the proliferation and distribution of cloud services, crowd sourcing, and gig work.

In 2006, about eleven years after Amazon’s founding, Bezos launched AWS in order to accelerate the implementation of internal applications and services, a seemingly modest plan that would soon be outgrown by the high demand for cloud technology solutions. As technology ethnographer Ingrid Burrington details, AWS benefitted immensely from existing infrastructures in the Northern Virginia area Tysons Corner, where an agglomeration of office parks, defense contractors, government IT, tech companies, and data centers have become one

¹⁹ Nick Wingfield, “As Amazon Pushes Forward With Robots, Workers Find New Roles,” *The New York Times*, September 10, 2017, <https://www.nytimes.com/2017/09/10/technology/amazon-robots-workers.html>.

²⁰ Patrick Sisson, “9 facts about Amazon’s unprecedented warehouse empire,” *Curbed*, November 21, 2017, <https://www.curbed.com/2017/11/21/16686150/amazons-warehouse-fulfillment-black-friday>.

²¹ Sarah McBride, “Amazon profit crushes estimates as cloud-service revenues soars,” *Reuters*, April 28, 2016, <https://www.reuters.com/article/us-amazon-results/amazon-profit-crushes-estimates-as-cloud-service-revenue-soars-idUSKCN0XP2WD>.

of the major Internet backbones worldwide.²² Amazon acquired old data centers transforming existing web infrastructure into an affordable, on-demand, and scalable commodity. A useful historical analogue in this context comes from Bezos, who likens the widespread implementation of the electric grid to the current changes of infrastructure computing.²³ As Burrington notes,

In practice, this meant that pricing for services was entirely contingent on actual use, an approach that allowed developers to rapidly scale small startups into massive companies by paying for infrastructure support on an as-needed basis and scaffolding as needs grew. Thanks to AWS, the initial overhead for starting a service like Airbnb or Slack (both AWS customers) is so low that those companies can afford to expand quickly.²⁴

Amazon has, therefore, become deeply enmeshed in the proliferation of contingent work structures, not only directly across its own various work environments, from corporate offices to distribution centers and the logistics in between but also indirectly by helping create the infrastructures necessary for other capital ventures to pursue profit-oriented modes of decentralization and informalization. AMT marks an instructive case in point.

3. Crowdsourcing in Amazon Mechanical Turk

Though there are several automation services and developer tools within AWS, one particularly illustrative case concerning contemporary gig work is AMT (sometimes called MTurk), an online labor brokerage that taps into a remote contingent workforce. This online labor marketplace arbitrates corporate or academic jobs (or batches of jobs) that exceed machine intelligence, such as identifying objects in images, writing product descriptions, and reviewing advertisements. Before outlining AMT's specific functioning in more detail, however, some historical background helps delimit the *raison d'être* behind the project. Notably, the

²² Ingrid Burrington, "Why Amazon's Data Centers Are Hidden in Spy Country," *The Atlantic*, January 8, 2016, <https://www.theatlantic.com/technology/archive/2016/01/amazon-web-services-data-center/423147/>.

²³ Accordingly, factories were able to purchase electricity rather than building their own generators. See Brad Stone, *The Everything Store: Jeff Bezos and the Age of Amazon* (New York: Little Brown and Co, 2013). Bezos' comparison, however, neglects that Amazon's data centers require so much electricity that the firm has to occasionally build its own power substations.

²⁴ Burrington, "Why Amazon's Data Centers Are Hidden in Spy Country."

peculiar name Mechanical Turk is derived from a machine built in the late 1760s by Hungarian writer and inventor Wolfgang von Kempelen, whose invention proved capable of beating humans in chess. (Among the opponents were notable celebrities such as Benjamin Franklin and Napoleon Bonaparte.) On the outside, the apparatus featured a chessboard and the torso of a turbaned figure, hence the name “Turk” or “Chess Turk.” Fifty years passed, so the story goes, until the Turk automaton was revealed to conceal a human chess master—more precisely, several different players during its long tenure—manipulating the pieces with magnets from inside a small wooden cabinet, thus rendering the Turk a mechanical illusion or, in the words of former *Wired* editor Jeff Howe, “a fancy-looking piece of technology that was really powered by human intelligence.”²⁵

What this short origin story makes apparent is that Amazon is cleverly hiding an important truth about automation in plain sight, namely the fact that automation is a complex process involving humans, rather than only replacing them. As a particular form of automation, then, AMT constitutes a digital space, where human and nonhuman labor processes converge under corporate pressures of growth and efficiency. As a general trend of contemporary modes of automation, AMT reveals how technologies and their implementation are not distributed evenly, but rather unfold more intensely in certain contexts. As Amazon’s fortunate new white-collar employees encounter automation on a daily basis, the firm’s modes of gigification extend from fulfillment centers to crowdsourcing interfaces, such that both domains are highly exposed to corporate induced machine logics aimed at improving Amazon’s status as a multi-layered global logistics empire. Despite their affinities with warehouse workers guided by machine logics, AMT workers also share the motility seen in the milieus of Uber and Airbnb. Concretely, these subjectivities materialize in countless online communities, where workers transcend the confines of the virtual warehouse and, to some extent, disrupt the notion of closed feedback loops between platform providers and end users.

According to its website, “Amazon Mechanical Turk [...] operates a marketplace for work that requires human intelligence. The MTurk web service enables companies to

²⁵ Jeff Howe, “The Rise of Crowdsourcing,” *Wired*, June 1, 2006, <https://www.wired.com/2006/06/crowds/>; For a more detailed account see Tom Standage, *The Turk: The Life and Times of the Famous Eighteenth-Century Chess-Playing Machine* (New York: Berkley Books, 2003).

programmatically access this marketplace and a diverse, on-demand workforce. Developers can leverage this service to build human intelligence directly into their applications.”²⁶ Respective tasks in which humans still outperform computers include, but are not limited to, identifying objects in photos or videos, scanning data for duplicates, transcribing interviews, and digitizing receipts. For example, expense management businesses like Expensify utilize AMT to have users read and transcribe scans of customer receipts and while pretending to use “smartscan technology.”²⁷ In the context of other popular business applications, AMT users may rate certain designs, provide brief reviews, and engage in content management for video platforms and social media. Additionally, AMT has emerged as a popular tool in the social sciences, as it allows researchers to significantly decrease the time and costs of conducting academic surveys. Regardless of the specific job, however, AMT’s wager in all these cases is to make “human intelligence” tasks accessible, scalable, and cost-effective so that third parties may optimize their operations. Not dissimilar from Uber and Airbnb, for each transaction AMT charges a 20% fee, and an extra 20% fee is assessed for HITs that include at least 10 assignments. According to estimates, the marketplace lists about 500,000 tasks per day for workers to complete, though these figures vary significantly.²⁸ Importantly, Amazon uses the information on the initial page primarily to target prospective clients that stand to benefit from its services such as businesses, developers, and researchers.

Indeed, the website design and the navigation alone clearly identify the place that workers occupy in the Amazon system of cloud computing and networked automation. Though AMT proudly advertises its “access to thousands of high quality, global, on-demand Workers [sic],” it fails to initially address prospective earners, thus foreshadowing a twilight economy of automation and residual human employability. On the next page of the website, a bifurcation of “Requesters” and “Workers” occurs when visitors are asked to choose between the options of “creating tasks” and “making money.” Though the partitioning of labor processes into user-

²⁶ “Human intelligence through an API: Access a global, on-demand, 24x7 workforce,” *Amazon Mechanical Turk*, <https://www.mturk.com/>.

²⁷ Olivia Solon, “The rise of ‘pseudo-AI’: how tech firms quietly use humans to do bots’ work,” *The Guardian*, July 6, 2018, <https://www.theguardian.com/technology/2018/jul/06/artificial-intelligence-ai-humans-bots-tech-companies>.

²⁸ Miranda Katz, “Amazon’s Turker Crowd Has Had Enough.” *Wired*, August 23, 2017, <https://www.wired.com/story/amazons-turker-crowd-has-had-enough/>.

client and user-laborer does not necessarily constitute a particularly new phenomenon, AMT's design coincides with intensified effects of removal and alienation. As David Berry notes, "The interface reifies the social labour undertaken behind the surface, such that the machinery may be literally millions of humans 'computing' the needs to the software, all without the user being aware of it."²⁹ Berry's description here echoes Galloway's understanding of interfaces as simultaneously corporeal and incorporeal, material and ideological. Accordingly, the web design driving users toward divergent subject positions in AMT's market constitutes an extension of a historical configuration wherein the labor provided by workers is characteristic of the larger economic order, an order that simultaneously works to eradicate its own reliance on laborers. AMT represents a particularly interesting case of how capitalist processes both require and undo labor, a contradiction to some degree familiar from Uber and Airbnb. To illuminate more closely the social dimension of these dynamics, the following section reconstructs some of the media discourses surrounding AMT before developing critical concerns regarding the AMT milieu.

As indicated, there are some dissimilarities between AMT on one side and Uber, Airbnb, and other gig economies on the other. For one, despite the fact that it precedes other gig economies, AMT hardly enjoys the notoriety of Uber and Airbnb. There are several reasons for this difference in publicity. Unlike the other two networks, AMT caters to a more specialized market, which happens to be almost invisible compared to today's popular mobility and hospitality services. As its products are mainly comprised of surveys and other data-related tasks, AMT simply does not attract a diverse clientele. Moreover, even though AMT certainly pushes its workers, its legal meandering hardly ruffles the feathers of the public as much as Uber or Airbnb. While cab drivers and home sharers in the gig economy invariably receive public attention, the sparsely paid online gigs in AMT largely go unnoticed. As one critic observes,

Many of the labor activists and scholars I spoke to for this story had never heard of Amazon Mechanical Turk, nor had several of the tech employees I reached out to—even ones who work

²⁹ David M. Berry, *Critical Theory and the Digital* (New York: Bloomsbury, 2015), 75.

at companies that employ microtaskers by the hundreds of thousands. Like Google Books employees, microtaskers are, for the most part, invisible. And that makes them easy to ignore.³⁰

The lack of public awareness speaks to both the political economy of shareholder value and the pretension of the technology industry, in that the former entities stand to gain from the structural concealment of labor. Indeed, without the proliferation of support communities and the work of technology ethnographers and researchers, the AMT gig economy would be difficult to account for. As different a gig economy as AMT might be in some respects, a more detailed exploration reveals striking similarities not only regarding the representation of workers and their experiences, but also in terms of the systematic obfuscation of relevant information.

Conceived by computer engineer Venky Harinarayan and patented as a “hybrid machine/human computing arrangement,”³¹ AMT launched publicly in 2005 and was only later moved into the AWS division. During the first few months, Amazon primarily crowdsourced tasks to optimize internal processes, specifically the identification of duplicate websites for its retail shopping services.³² The data lab quickly gained traction, and coinciding with the expansion of AWS, AMT became scalable and, thus, a convenient solution for a greater variety of clients. In 2007, a reported 100,000 workers from 100 countries picked up what Amazon terms “Human Intelligence Tasks” (HITs) via the marketplace. According to studies, 90% of these HITs pay less than \$0.10 and though there may be average completion times, the exact parameters of HITs are precisely among the central points of contention in most user forums.³³ Despite the meager payments, Amazon claims the total number of participants to be as high as 500,000. During the day over 80% of workers hail from the United States, while at night the share of Indian workers tends to increase to about 50% of AMT’s total population.³⁴ In terms of gender, AMT is split into roughly 50% male and 50% female workers. Importantly, however, the

³⁰ Cushing, “Amazon Mechanical Turk: The Digital Sweatshop.”

³¹ Harinarayan et al., “Hybrid machine/human computing arrangement,” *United States Patent and Trademark Office*, March 27, 2007, <https://patents.google.com/patent/US7801756>.

³² Fiona Graham, “Crowdsourcing Work: Labour on Demand or Digital Sweatshop?” *BBC*, October 22, 2010, <http://www.bbc.com/news/business-11600902>.

³³ Panagiotis G. Ipeirotis, “Demographics of Mechanical Turk: Now Live,” *Behind the Enemy Lines*, January 29, 2018, <http://www.behind-the-enemy-lines.com/2015/04/demographics-of-mechanical-turk-now.html>.

³⁴ Panagiotis G. Ipeirotis, “Analyzing the Amazon Mechanical Turk Marketplace,” *ACM XRDS* 17, no. 2 (2010), 16-21.

total amount of workers remains unverified, as Amazon continues to reference the 500,000 workers rather than disclosing any updated figures.³⁵ Similarly, instead of conceding high turnover rates, Amazon appeals to its elastic and global workforce. By directing attention of interested parties toward the availability of workers at any given time, highlighting the on-demand capacity of its marketplace, AMT produces an effect similar to Uber's projected ubiquity of fares (via its "ghost cars" and "forward projection") and Airbnb's comprehensive hospitality coverage.

Though AMT's capacities to swiftly process social science surveys and corporate tasks suggest reliability, several studies indicate that the actual number of workers available to complete HITs at any given time ranges only anywhere between 6,000 to 43,000 workers,³⁶ depending on the type of HIT. Despite low average pay, some HITs stipulate basic qualifications, such as language skills, location, and a certain degree of trust within the marketplace. The limited on-demand sample size and the varying qualifications may pose no issues for corporate jobs but do affect the validity of social science research. By that token, it is worth mentioning that most studies in this context originate from the fields of industrial psychology and behavioral analysis and almost exclusively rely on quantitative methodologies. Accordingly, most samples are concerned with problems of incentivization, response biases, and overall claims of accuracy. Indeed, only few academic studies consider AMT as a context that warrants qualitative investigation, not to mention critical integration and intervention.

While the skepticism regarding the quality of work at AMT constitutes a valid concern, the more far-reaching issues have to do with the market itself, as it appeals significantly to corporate requester types often tied to capital investment, market research, and government intelligence. Some of the major players soliciting labor from AMT are companies such as Acxiom, Channel Intelligence, Defense Advanced Research Projects Agency (DARPA), Statera,

³⁵ See Utpal Dholokia, "Just How Many Amazon MTurk Survey-Takers Are There?" *Psychology Today*, January 30, 2017, <https://www.psychologytoday.com/blog/the-science-behind-behavior/201701/just-how-many-amazon-mturk-survey-takers-are-there>.

³⁶ See, for example, Karën Fort, Gilles Adda, and K. Bretonnel Cohen, "Amazon Mechanical Turk: Gold Mine Or Coal Mine?" *Computational Linguistics - Association for Computational Linguistics* 37, no. 2 (2011), 413-420; Neil Stewart, Christoph Ungemach, Adam J. L. Harris, Daniel M. Bartels, Ben R. Newell, "The Average Laboratory Samples a Population of 7,300 Amazon Mechanical Turk Workers," *Judgment and Decision Making* 10, no. 5 (2015), 479-491.

and an anonymous “Stealth Requester.” AMT discloses these partnerships as case studies, however, providing only selective details about their top-tier collaborators. While AMT also services other requesters, the concentration of entities engaged in various forms of data collection and intelligence is notable. What these parties have in common is a continued interest in amassing and organizing consumer data mainly for the purposes of advertisement and securitization. In a sense, AMT leverages a precarious labor force to optimize its very own data points in the hands of corporate and government entities and, thus, capitalizing on the same network dynamics of the previous chapter, where visibility and transparency correspond to precarity and opacity tends to coincide with power. In Nick Srnicek’s words,

Data have come to serve a number of key capitalist functions: they educate and give competitive advantage to algorithms; they enable the coordination and outsourcing of workers; they allow for the optimisation and flexibility of productive processes; they make possible the transformation of low margin-goods into high margin services; and data analysis is itself generative of data, in a virtuous cycle.³⁷

AMT presents two case studies in this context, presumably not so much to educate the public about its services, but rather to attract additional corporate clients.

The big-data broker Acxiom is a prominent part of the AMT network, which is perhaps better understood as an impenetrable data ecosystem. In the case study, AMT describes Acxiom as “a marketing and technology and services company [that] uses a sophisticated optical character recognition (OCR) system to scan data and update records.”³⁸ Given that system’s occasional limitations in verifying its own accuracy, Acxiom periodically outsources respective tasks on a demand basis. Essentially, these are the same tasks that have workers sort through difficult-to-read documents and to make them legible for digital systems. In technical terms, Acxiom integrates AMT’s API, such that requests appear as HITs for workers to complete, a process that allegedly saves Acxiom 50% of its transcription costs. Though in one sense such processes are simply textbook examples in outsourcing practices, Acxiom’s multi-layered

³⁷ Srnicek, *Platform Capitalism* (Malden: Polity Press, 2017), 41-2.

³⁸ “Acxiom Saves 50% on Transcription and Outsourcing Costs with Amazon Turk,” *Amazon Mechanical Turk*, https://requester.mturk.com/case_studies/cs/acxiom.

involvement in the surveillance apparatus makes this a noteworthy case study. As John Foster and Robert McChesney recall, “Acxiom has 23,000 computer servers processing in excess of 50 trillion data transactions annually. It keeps on average some 1,500 data points on more than 200 million Americans, in the form of ‘digital dossiers’ on each individual.”³⁹ It is, therefore, likely that the integration with AMT’s API has Turkers contribute to the optimization of these proprietary dossiers. Potential customers for the continuously rearranged data packets include banks, credit-card companies, insurance providers, and various government agencies. Oddly enough, in this economy it is conceivable that Turkers work first to improve Acxiom’s comprehensive data bases before taking a survey polling the public’s desire to know more about the same firm and the sensitive data it deals in.⁴⁰

The underlying dynamics of crowdsourcing in the context of the big-data economy become more evident in light of another case study documented on AMT’s website. In this case, however, the Requester opts to stay anonymous; its description only reads “Stealth Requester.” According to the short text, the anonymity serves to “protect the competitive advantage created by using Mechanical Turk.” On the one hand, this enigmatic portrayal of clients might simply serve AMT to attract more customers who would not only welcome the prospects of saving costs through crowdsourcing but also value the possibility of remaining anonymous. On the other hand, the case study reveals once again the politics of visibility as part and parcel of crowdsourcing and, by extension, the gig economy. Turkers aid in categorizing and processing information on merchants and consumers, thus enabling the Stealth Requester “to reallocate their internal team to other business-critical objectives while instituting a scalable, on-demand workforce solution for on-going categorization as demand for exciting, new deals continues to grow.” Ultimately, the informalized nature of the microtasking industry—while estimates value revenues around \$375 million in 2011,⁴¹ exact figures on the marketplace are unclear—invariably appeals to corporations, as AMT effectively leverages a disparate workforce as data software. Turkers, meanwhile, are caught in between the

³⁹ John B. Foster and Robert R. McChesney, “Surveillance Capitalism: Monopoly Finance Capital, the Military-Industrial Complex, and the Digital Age,” *Monthly Review: An Independent Socialist Magazine* 66, no. 3 (2014), 19.

⁴⁰ See Samuel Grogan and Aleecia M. McDonald, “Access Denied! Contrasting Data Access in the United States and Ireland,” *Proceedings on Privacy Enhancing Technologies*, no. 3 (2016).

⁴¹ Cushing, “Amazon Mechanical Turk: The Digital Sweatshop.”

optimization engines of today's big data brokers. At the same time, interpreting Turkers merely as software components in the midst of information capitalism would be to ignore the impressive activities forming around the AMT milieu. Rather, a closer analysis of respective support networks gestures toward the modes of motility proliferating in the online gig economy.

4. On Turker Motility and Master Workers

Signing up to become a Requester or Tasker is a relatively straightforward process. Amazon uses existing user information to fill out the application form and a verification period ensues. Once accounts are cleared, Amazon offers different dashboards to users depending on their role in the marketplace. Requesters have access to a dashboard that entails information about hourly processes, pay levels, active workers, and other metrics to manage transactions. Workers, meanwhile, rely on a less comprehensive interface, which complicates their abilities to ascertain the economic viability of one task over another. Utpal Dholakia, the same researcher documenting Uber's crafty surging tactics, switches from the Requester camp to the worker side in order to learn about the Tasker experience, afterwards making the following entry on his blog:

Over my one week as an MTurk worker, I estimate that I earned somewhere between \$3 and \$3.25 per hour of work [...] Even more bothersome was the fact the site did not provide me with my "per-hour" earning information anywhere so there was no way for me to know precisely how much I made per hour. As a researcher [...] the site provides me with an "effective Hourly Rate" value that I pay my workers. So why can't a worker have this information?⁴²

Dholakia's observation describes a common complaint among Turkers, namely that their information disadvantage translates directly to increasing Requester convenience.

⁴² Utpal Dholakia, "My Experience as an Amazon Mechanical Turk (MTurk) Worker," *Psychology Today*, July 21, 2015, <https://www.psychologytoday.com/blog/the-science-behind-behavior/201507/my-experience-amazon-mechanical-turk-mturk-worker>.

This insight anticipates a more salient criticism about the ways in which AMT gets around its responsibilities of adequately moderating and arbitrating disputes. As another expert and activist observes,

Many report that they Turk because it is the best paying work currently available to them, given constraints such as disability, lack of jobs in rural areas, discrimination, and family care obligations. So some of the stories offered by researchers and employers to justify low pay—for example, that most workers who rely on crowd work income live in “developing” countries with low costs of living; that most “developed”-country workers work on AMT mainly to pass time; that the work isn’t physically difficult; or that workers freely choose to participate in crowd work and can choose other work if they find the pay too low—are misleading myths.⁴³

The experience in the AMT milieu, therefore, corresponds to conditions in other platform economies, most notably regarding the information asymmetries undergirding Uber’s strategies. While Uber conceals data about demand relative to location to optimize its mobility coverage, the 24/7 leveraging of AMT’s labor force hinges on preventing Turkers from precisely ascertaining the parameters of HITs. To some extent, these relative disadvantages are built into the interface. However, what distinguishes AMT from Uber, aside from the obvious differences in service, is that AMT hosts an even more informalized exchange, devolving a substantial autonomy regarding task design and content onto its Requesters. Pricing, the number of tasks within a batch, estimated duration, and further requirements of trust, skills, and location are all at the Requesters’ discretion. Given such Requester license and AMT’s overall hands-off policy, malfeasance and scams are prevalent occurrences in the marketplace, an issue Amazon at least partially recognizes, as it cautions Turkers not to disclose any personal information to third parties and to only accept trustworthy HITs from reputable entities. The problem, however, seems to be that Amazon does little to equip workers with the necessary tools to prevent the misuse of their labor.

As a result of extremely informalized working conditions including poor task design, unethical behavior, and/or anonymity on the part of Requestors, Turker complaints about the uneven state of the marketplace are frequent. As Dholakia observes,

⁴³ Six Silberman, “Design notes for a future crowd work market,” *Medium*, February 13, 2015, <https://medium.com/@silberman/design-notes-for-a-future-crowd-work-market-2d7557105805>.

Many questionnaires took WAY [sic] longer to complete than the researcher had promised. For example, one survey informed me that it would take no more than five minutes and offered me \$.25, but then the researcher forced me to watch a video that went on for 11 minutes [...]. In one instance, my work was rejected because I did not answer one question the researcher had inserted somewhere within a 100+ question survey [...] There was nothing I could do about this. Answering one wrong question negated the dozens of right answers I had provided.⁴⁴

Consequently, the low standards required for enlisting Turkers in conjunction with hardly any means for workers to hold Requesters accountable, at least for this researcher, led to a “sustained sense of powerlessness.”⁴⁵ While this account probably speaks to the experiences of many Turkers, Dholakia focuses here primarily on AMT’s shortcomings to generate a fair market environment. Like other gig economies, however, AMT workers exchange experiences in various online forums so that a case can be made that AMT helps produce its own kind of motile subjectivities. Though these forums constitute tangible support communities, they nonetheless remain heterogeneous spaces, where Amazon’s incentives to competition continue to hold a certain sway. Even critical Turkers understand that one way to success in this marketplace consists in simply sticking to the grind or even attempting to become so-called Master Taskers, the AMT equivalent of an Airbnb Superhost.

There is a plethora of online communities where Turkers exchange all sorts of information concerning the marketplace, including Turker Nation, Mturkgrind, Mturk Forum, as well as several groups on Facebook and Reddit. Indeed, due to AMT’s relatively long lifespan as a representative in the gig economy, its networks run rather deep and, in some cases, have taken on lives on their own.⁴⁶ Among these communities, the subreddit “MTurk” ranks as a popular support system, currently counting over 30,000 active members. More than the other gig economies, AMT ties the worker to a computer screen for longer durations at a time. At the same time, turking affords relatively convenient navigation between various computer tasks, including emails and recreational surfing. In this view, it is not surprising that in the AMT milieu

⁴⁴ Dholakia, “My Experience as an Amazon Mechanical Turk (MTurk) Worker.”

⁴⁵ Ibid.

⁴⁶ Katz, “Amazon’s Turker Crowd Has Had Enough.”

a certain tech savviness coincides with a knack for casual web-based entertainment. At least in the Reddit/Mturk community both tendencies are evident.

The top submissions of all time almost exclusively feature satirical content consisting of meta-commentary, pop culture memes, and bizarre HITs community members have encountered. Indeed, the most popular content on Reddit/MTurk involves a self-deprecatory, if not ironic sense of humor regarding the dim prospects of serious financial gains on the platform. This type of content not only provides a sense of Turkers' self-image but also establishes that Turkers are well-aware that their efforts are, by and large, insufficiently remunerated. Despite the humorous tone in many posts, users also disclose a myriad of disconcerting experiences that speak to the informalized experience of freelance crowdsourcing. One consistently surfacing issue is Amazon's failure to appropriately moderate HITs, control survey content, and respond to Turker complaints. Aside from such moments of venting and comic relief, however, the forum also features guidance, such as tips for beginners and intermediary users, specific warnings about untrustworthy Requesters, and so on. Indeed, the proliferation of scams and misconducts has led to impressive volunteer efforts of cataloguing and monitoring dubious Requesters in an online registry, aptly titled "Turkopticon." Founded by researcher-activists Lilly Irani and Six Silberman in 2008, the project compiles lists, rankings, and reviews of Requesters in an ongoing database for members. In addition, a Turkopticon browser extension helps users filter through HITs in real time, thus significantly optimizing Turkers' experiences. In sum, Turkopticon has amassed over 200,000 reviews on over 35,000 requesters. Compared to other forums that provide a broader variety of content, the Turkopticon project constitutes a more functionally oriented community, while representing the most widely recommended tool for newcomers in the marketplace.

In that vein, a post on Reddit/MTurk titled "New to MTurk, Here's what you should know," provides a list of ten items for the uninitiated to consult.⁴⁷ The post advises novice Turkers to seek more low-paying tasks rather than a few higher-paying HITs. A higher amount of completed HITs will in turn qualify a Turker for a broader range of HITs, specifically HITs of

⁴⁷ "New to Mturk, Here's what you should know," *Reddit/mturk*, 2014, https://www.reddit.com/r/mturk/comments/1z4sma/new_to_mturk_heres_what_you_should_know/.

higher quality. Put simply, more HITs approved amount to a higher availability of better-paying HITs. Likewise, the same post encourages newcomers to include in their search parameters HITs for which they might not yet qualify. The reasoning here is that many of these HITs provide easy qualification tests, which may be of use for subsequent tasks. Aside from referring readers to another subreddit called “HITsWorthTurkingFor,” the remaining tips suggest developing tacit knowledge, that is, the kind of knowledge only experience provides. Accordingly, one user encourages fellow Turkers: “Don’t get discouraged. Keep with it! Eventually you’ll figure out the tricks and be making money a lot more quickly.”⁴⁸ Though some commenters take issue with the original poster’s suggestions, the community, by and large, seems to appreciate such advice.

These supportive moments, however, by no means exhaust the forum content. Another post, for instance, highlights the fact that turking is at its core a competitive activity. As one user reminds both dismayed and new members in the community: “You should not compare your earnings with the majority of people who post their weekly earnings” as these Turkers are more advanced in their HIT counts, thus enabling them to accept better jobs.⁴⁹ Moreover, the same user explains why most Turkers refuse to share vital information concerning requesters: “The reason people dont [sic] and will not share the requesters they work for is because that would take away their jobs and pay, Mturk is an insanely competitive environment where its [sic] a rat race to see who can click first.”⁵⁰ The competition has caused discontent mostly among new users, as several submissions suggest. One poster laments, “the site has turned into a lottery of who can click the button fastest [...]. How is that any way to make extra money if we have to sit at our PCs 24/7 just to instantly hit the button when something pops up.”⁵¹ Another commenter agrees: “I think too many people are using customised scraping scripts and other cheats. There’s probably a lot more turking than ever before as well. How some of these turkers pull in \$75–\$100 a day I’ll never know. 2 years ago I was making \$1000 a month easy. Now I do

⁴⁸ Ibid.

⁴⁹ “New turkers, please dont get mad if we make more money then you, Mturk is a competitive workplace,” *Reddit/mturk*, 2018, https://reddit.com/r/mturk/comments/7wed97/new_turkers_please_dont_get_mad_if_we_make_more/.

⁵⁰ Ibid.

⁵¹ “Mturk sucks now, its just a lottery and a game of speed,” *Reddit/mturk*, 2017, https://www.reddit.com/r/mturk/comments/77008j/mturk_sucks_now_its_just_a_lottery_and_a_game_of/

\$800 a month but I'm in front of the computer 12–16 hours.”⁵² Yet another user identifies a range of problems with the marketplace including the recent influx of workers, Amazon's increased transaction fees, the informal scripts such as Turkopticon and browser plug-ins that optimize searches, the global competition for even the lowest paying HITs, and the unclear allocation of so-called master privileges, which I outline below.

Though competition, pressure on wages, and software hacks might not be exclusive features of AMT, it should be stressed that Amazon takes definitive steps in facilitating the kind of marketplace culture described above. For one, the pressure on wages is partly a result of sourcing labor from a global crowd since specifically Indian workers are more inclined to accept low-paying tasks due to the relative value of HIT payments. Moreover, as Amazon opts not to disclose exact statistics about the number of AMT workers, the actual extent to which demand for labor drives wages down remains unknown. As the gig economy points to a convergence around informalized labor, AMT illustrates clearly the global scope of this trend. Though many HITs require workers to demonstrate a current US location, in the global village of AMT Turkers compete nonetheless on a worldwide scale. Meanwhile, Amazon manifestly intensifies competition by way of promoting a Master Worker qualification, which improves eligible workers' interface, specifically in terms of scanning Requesters. In its FAQ, Amazon praises these Master Workers as having “consistently demonstrated a high degree of success in performing a wide range of HITs across a large number of Requesters.” Data points for the Master Qualification entail consistently “high-quality results (as indicated by Requester approval rates and other related factors), marketplace tenure, and variety of work performed.” Amazon claims to award the distinction “automatically,” which is to say, “based on statistical models that analyze Worker performance.” The status depends on continuous activity and may be revoked or restored at any point.

While Amazon's respective description reads fairly straightforwardly, some users doubt the accuracy and coherence by which AMT awards the qualification. Though AMT announced a revision of its qualification requirements for Masters, many users remain skeptical with respect to the metrics. Indeed, various commenters allege that Master is rather randomly assigned and

⁵² Ibid.

ultimately benefits Amazon disproportionately. As Masters have access to more high-value HITs, the qualification ensures a certain level of user involvement and, aside from the traditional rating system, constitutes another affective tool in quality control. The Masters Qualifications, which are typically handed out in bulks at certain times, serve immediate financial purposes. As one disillusioned forum user suspects, “[Master Qualification] is a way for Amazon to sucker requesters into paying more for the same work. They tell requesters that by using workers with this qualification, they are getting the very best mTurk [sic] workers and will thus presumably get better results.”⁵³ Thus, user announcements about Master Qualification, either celebrate the original poster for attaining this exclusive membership or point out the arbitrariness of the award procedure.

Aside from the main online Turker hubs, the irregularities of the marketplace have also registered across online media, though concern for the experience of workers hardly transpire. In 2008, about three years after AMT went online, *Wired* plainly asserted that “Amazon’s Mechanical Turk Simplifies Automation.”⁵⁴ Even five years later, *Wired*’s Howe, who apparently coined the term crowdsourcing, closed an article on the topic with the line, “The crowd is hungry for work, and the disruption is only getting started.”⁵⁵ Notwithstanding such perfunctory contributions, more critical coverage has since emerged on the topic. Concretely, contributions have likened AMT to digital sweatshops capitalizing on legal loopholes or entirely uncharted territories, thereby exploiting online laborers, many of whom are attempting not merely to complement their income, but to fully replace waning employment.⁵⁶ While interventions in the asymmetrical practices of crowdsourcing microtasks are valid, an outright rejection of AMT’s business model nonetheless risks glossing over the fact that the fabrication of common sense among Turker communities plays a crucial role in further perpetuating the informalization of labor markets. Whereas the original AMT image of the hidden chess player aptly conveys the sense of human involvement inherent in automation, the analogy eventually

⁵³ “How to become a Master,” *Reddit/mturk*, 2016,

https://www.reddit.com/r/mturk/comments/4eanl1/how_to_become_a_master/.

⁵⁴ Adam Duvander, “Amazon’s Mechanical Turk Simplifies Automation,” *Wired*, July 30, 2008, <https://www.wired.com/2008/07/amazon-s-mechanical-turk-simplifies-automation/>.

⁵⁵ Jeff Howe, “Crowdsourcing—Now at a Store Near You,” *Wired*, April 16, 2013, <https://www.wired.com/2013/04/crowdsourcing/>.

⁵⁶ See Cushing, “Amazon Mechanical Turk: The Digital Sweatshop.”

falls short because it inevitably casts workers as a monolithic mass. Instead, Turkers are a relatively diverse crowd regarding income, gender, and their own perception of turking.

Consequently, though many Turkers echo the sweatshop criticisms, many others conversely espouse more benevolent views. In this vein, statements embodying a somewhat docile appreciation occur periodically, such as in the following comment:

I hear so many negative things on this forum about how MTurk sucks, and how we work for slave wages, but I was just feeling thankful right now. I was able to transfer \$35 from my Amazon Pay account the other day, and it just appeared in my bank account, which means that after work, I can go buy groceries for the rest of the month. [...] I work full time, but my spouse has been unable to work for a few months now, and we are feeling the unbearable crush. If it wasn't for MTurk and my other part time side gig, I don't know where we'd be.⁵⁷

As this commenter welcomes AMT as an opportunity for required income, the post nonetheless dispels with the libertarian notion that AMT simply presents opportunity provided by Amazon. That is, the fact that the poster is already deeply enmeshed in a precarious situation (three gigs—including AMT) challenges the notion of voluntary, entrepreneurial activity and casts a light of imposed flexibility on Amazon's crowdsourcing apparatus. The putative realism in one of the responses is similarly glaring: "Don't listen to all the naysayers," a forum member replies. "It might be 'low pay.' But, at the end of the day, I too take that cash transfer and am thankful to have it when I couldn't get a job. Freelance rocks!"⁵⁸ The celebration of freelance work and the independence from a traditional job market aligns with the common sense view that AMT simply equips users with the tools to be their own enterprisers. Invariably, then, questions concerning alternative modes of crowdsourcing arise.

5. Beyond Turking: Opportunities and Limits of Alternative Crowdsourcing

The AMT milieu marks a thought—provoking case not least due to the academic involvement on both the Requester and Turker side of the market. Researchers who frequent AMT, in some cases, switch sides to experience firsthand the Turker, perspective including

⁵⁷ "Thank You, MTurk," *Reddit/mturk*, 2018, https://www.reddit.com/r/mturk/comments/7zq7sq/thank_you_mturk/.

⁵⁸ *Ibid.*

information asymmetries, design constraints, and imposed freelance subjectivity.⁵⁹ To some extent, the heterogeneity on the worker side mirrors the variety of corporate and research-oriented requesters even though the acceleration in large-scale, corporate crowdsourcing generates a disproportionate momentum in the informalization of labor, thus affecting both the availability and quality of jobs. It is precisely in this space that alternatives to the large crowdsourcing platforms such as AMT emerge. Discontent with AMT's information and transparency policies, researchers from various institutions now construct their own crowdsourcing networks, pledging fairer working conditions, minimum pay, more transparency, and improved communication between users and providers. One venture along these lines, Daemo, hails from Stanford's Crowd Research Collective. Daemo sets tasks at a price of \$10 per hour, which is above minimum wage. More importantly, as cofounders Michael Bernstein and Mark Whitberg stress, the platform encourages increased communication among research requesters and workers to moderate, negotiate, and manage issues regarding quality control and fair working conditions.

Though Daemo appears to gain some traction, its scalability pales in comparison to the multimillion dollar industry that developing around AMT and similar marketplaces such as Upwork, RapidWorkers, MicroWorkers, CrowdSource, Cloudfactory, ClickWorker, ShortTask, PeoplePerHour, MobileWorks, and CrowdFlower. The larger the platform, the more difficult it is to uphold pledges for best practices regarding transparency, accountability, and fair wages. The founders' commitment to moderate the community may be appealing to ethically inclined researchers, but is likely to deter "lone wolf workers," that is, individuals "who aren't interested in a community-oriented approach and who choose crowd work specifically because of its asocial nature."⁶⁰ These workers prove difficult to recruit from AMT, a platform they either endorse in its current form or with only minor adjustments. Daemo, meanwhile, appears to be more interested in its own egalitarianism than the actual research conducted through its crowdsourcing. For instance, each posted job automatically launches a new discussion thread in which comments, questions, and flags can be discussed among the community. By the same

⁵⁹ Dholakia, "My Experience as an Amazon Mechanical Turk (MTurk) Worker."

⁶⁰ Katz, "Amazon's Turker Crowd Has Had Enough."

token, Daemo's own surveys suggest that higher pay leads to more reliable work performance.⁶¹

Overall, Daemo's findings indicate that workers from major online marketplaces would move to other, more transparent platforms, provided a guaranteed demand for work. Demand, in turn, is closely tied to scale and content, such that Daemo reveals an interesting truth about AMT, namely that there is a certain appeal in the relative casualness of the latter. As Daemo's Stanford University background implies, the platform caters significantly to an academic user base, which is not trivial. Daemo mainly seeks to disrupt AMT in that it promises researchers better conditions to develop and conduct their surveys. Critics, however, argue that "academic viewpoints were valued over worker input, and the workers found that the dreams and expectations of the academics at the top outweighed the input from workers at the bottom."⁶² Accordingly, Daemo's asked workers to "read complex and technical articles to distill them down to a summary, which then went through peer review (peers being educated academics), which left them with bad feedback and insulting responses to their work."⁶³ Since many tasks were firmly grounded in technical and academic research, many workers eventually turned their backs on the platform.

In response to Bernstein's call for researchers to join the Daemo project,⁶⁴ Rochelle LaPlante, co-moderator of the Reddit/MTurk community, and Six Silberman, researcher and co-maintainer of the Turkopticon, address some of the underlying problematics of contemporary crowdsource markets. They argue that "the design of AMT makes human labor available as if it were computation. [...] This makes it easy for requesters to forget they are managing people."⁶⁵ This is especially true for the AMT API, which "lets requesters post tasks and review work automatically with code. But this code is special; it is code that directly manages people.

⁶¹ Ibid.

⁶² Social Contract CR, "Daemo's Crowd Has Had Enough" *Medium*, August 28, 2017, <https://medium.com/@SocialContractCR/daemos-crowd-has-had-enough-5b62c1fceb30>.

⁶³ Ibid.

⁶⁴ Michael Bernstein, "Join Stanford researchers to form the largest crowdsourcing research project ever," *Medium*, February 3, 2015, <https://medium.com/@msbernst/join-stanfords-crowdsourced-crowdsourcing-research-team-e194f3c7c81d>.

⁶⁵ Silberman, "Design notes for a future crowd work market."

Requesters and platform operators are not just programmers; they are managers.”⁶⁶ La Plante’s and Silberman’s reservation, then, derives from Daemo’s limited access to decision-making regarding platform design for workers, whose tacit “knowledge, earned over years of participating in the grueling daily grind of crowd work, is unique and offers a perspective not directly available to people who are not themselves experienced workers.”⁶⁷ While the stakes at Daemo are significantly different compared to those at AMT—Amazon and other Forbes 500 corporations stand to gain millions in revenues via crowdsourcing data processing—even in an academic context, centrally-controlled crowdsourcing will, in Silberman’s words, “probably end with the requesters getting the big rewards.”⁶⁸

6. Conclusion

Bezos refers to AMT as “artificial artificial intelligence,” that is, humans behaving like machines behaving like humans. Thus, Amazon openly corroborates the illusion already contained in the etymology of Mechanical Turk, i.e., automation occurs not in some isolated realm of technology, but rather alongside and in conjunction with socioeconomic activity. Amazon takes centerstage in a variety of automation arenas, most notably in its retail division that relies on computerized efficiency and increasingly on human-aided integration of robotic fulfillment center technology. Some might call this job creation, but already a quantitative perspective on the economic benefits of fulfillment centers contradicts this narrative.⁶⁹ Moreover, a qualitative investigation into these jobs challenges the widespread accounts that simply liken automation to more convenience. Consider, for example, the following description of fulfillment center jobs:

Many people who start out at Amazon warehouses begin as ‘pickers.’ These are the people who walk through the vast aisles in the Amazon warehouses where goods are stored, and, reading information from a handheld scanner, put items that have been ordered online into yellow bins, called totes. The scanner gives pickers an amount of time to ‘pick’ an item based on where it is

⁶⁶ Ibid.

⁶⁷ Ibid.

⁶⁸ Ibid.

⁶⁹ See Zach Schiller, “More Ohio Amazon workers relying on food aid,” *Policy Matters Ohio*, January 5, 2018, <https://www.policymattersohio.org/press-room/2018/01/05/more-ohio-amazon-workers-relying-on-food-aid>.

stored, and blue bars on the scanner count down the amount of time they have left to complete the task. Slightly more desirable than picking is stowing. ‘Stowers’ take bins of items that have been shipped to Amazon and store them on the shelves for the pickers to grab when ordered. Other employees work as ‘packers.’ They take items from yellow totes, scan them, grab a box and packing tape, the size of which is recommended by a computer, and pack individual customers’ orders, putting the finished boxes on a fast-moving conveyor belt.⁷⁰

The taskification of warehouse logistics is concomitant with the meticulous adjustment of human labor to meet the increasing, but still limited, capacities of machinic labor. As a result, human workers are subjected to strict regimes of numerical efficiency that renders the job quality in fulfillment centers scanty at best. As an Indiana worker attests, “You constantly feel like, ‘I’m not doing enough, I need to do a little more,’ and that’s their business model. [...] The constant trying to chase your rate, trying to stay ahead of being written up—it affects you psychologically.”⁷¹ With Amazon’s acquisition, implementation, and steady improvement of KIVA warehouse robots as well as other hardware and software updates, workers are caught in strange places of machine intelligence. Prevailing in these dehuman conditions appears to be the only way low-skill labor can participate in growing logistics markets. In these markets, Amazon’s warehouse jobs are about as uncertain as the gigs Uber affords drivers as both rank high on the automatability chart.

Between the offline fulfillment centers and the online marketplace of AMT, there are striking parallels in terms of computational distribution of jobs and the seemingly infinite drive for relentless optimization of every imaginable process between customer and provider. In this view, Amazon’s management of warehouse workers versus AMT’s treatment of Turkers varies only in that workers can be held to higher standards because of different levels of informalization. In other words, for Amazon both groups simply aid in processing the ground work in a logistics business that expands into online and offline folds. Undoubtedly, given fewer legal constraints Amazon would further informalize its labor conditions in other areas. In many cases, fulfillment centers already hire on a temporary basis and suspend the provision of benefits to long-term workers. If the utterly casual economy of AMT is any indication, a broader

⁷⁰ Alana Semuels, “What Amazon Does to Poor Cities,” *The Atlantic*, February 1, 2018, <https://www.theatlantic.com/business/archive/2018/02/amazon-warehouses-poor-cities/552020/>.

⁷¹ Ibid.

trend of informalization across Amazon logistics is probable. Despite its somewhat niche product, then, AMT's logic is economically relevant as the dynamics of online gig work play out in other areas. The vast extent of informalization in the context of AMT renders human activity as mere nodes in the big-data economy. In this vein, Silberman offers a pithy description of Amazon's online labor market, namely that "the design of AMT makes human labor available as if it were computation."⁷² Similarly, Irani problematizes the ostensible magic emanating from Amazon's data processors that in fact rely on human labor: "With workers hidden in the technology, programmers can treat workers like bits of code and continue to think of themselves as builders, not managers."⁷³ Indeed, from the perspective of the Amazon management, the desubjectivation of workers—even as there is, of course, an active and ongoing subjectification regarding new demands placed on the workers—permits the commodity they offer, which is literally their labor time, to appear as a relationship between algorithmic "things" rather than as a social relationship between humans. These observations, I suggest, apply to the broader social and economic contexts in which the present and future of work unfolds.

The implications of the AMT gig economy are important as not only Amazon's own data labor clearinghouse thrives, but also other online labor markets proliferate widely. As various automations, conventional modes of outsourcing, and other challenges to employment occur across industries, AMT and its remote counterparts CrowdSource, Upwork, and several other low-skill, low-pay labor markets, form a genre that increasingly appeals to investors and millions of precarious workers. At stake in AMT's artificial intelligence is a conception of technology that in its current form occludes the modes of transmitting a continuously changing culture into artificial intelligence while normalizing increasingly taskified labor as a viable subsistence option for a marginalized workforce. To be sure, the discourse of an autonomous, empowered freelancer, as evident in the Uber and Airbnb economies, only partially applies to AMT, which maintains a somewhat half-hearted Twitter account. However, this hardly constitutes a break in the trajectory of that subjectivity. Rather, Amazon's interest in concealing the labor in human-computer interfaces simply exceeds its need to culturally justify

⁷² Silberman, "Design notes for a future crowd work market."

⁷³ Lilly Irani, "The Hidden Faces of Automation," *XRDS* 23, no. 2 (2016), 36.

this kind of activity, though this may change in the future as Turkers receive incrementally more attention.⁷⁴

Finally, the case of AMT highlights, once again, the need to assess the dynamics in the gig economy in a broader light, that is, broader than discussions about fair wages, worker rights, and regrettable informational asymmetries would allow. For one, the tendency to displace human workers through technological means—be it in the form of warehouse robotics or displays representing computer-based efficiency—constitutes a logical continuation of an economic system that conceptualizes both humans and nonhumans primarily as assets in service of uneven growth. This is, however, not to be taken as a crude affirmation of an economic base but rather to emphasize that AMT and other gig economy representatives are not reducible to the misdeeds of a few covetous innovators. Instead, AMT resembles a model of distributing work in a way that makes sense given the current state of neoliberal capitalism. To deny that would also be to miss the many ways in which gig work providers tap into (and presumably reorganize) cultural shifts that might not be entirely captured in a purely economic analysis. Consider in this context the modes of transaction that seem to enjoy broader acceptance among those startups attempting to transcend the limitations of their corporate forebearers—such as Daemo for AMT or RideAustin for Uber. The partial convergence in functionality between these emergent collectives and the big players in the game indicates certain tenets of gig work warrant further scrutiny. Specifically, there is a sense in which a discussion about the declining quality of work must be assessed in conjunction with the notion that the domain of work is subject to continuous cultural mediation. That is, what is considered acceptable work is always mediated both by respective milieus and by interfaces that communicate an ethos of continuing productive activity.

⁷⁴ See, for instance, Emily Dreyfuss, “A Bot Panic Hits Amazon’s Mechanical Turk,” *Wired*, August 17, 2018, <https://www.wired.com/story/amazon-mechanical-turk-bot-panic/>.

Chapter Five

Conclusion: An Endless Present of Continuous Economic Engagement

1. Introduction

Though the discussion on online labor markets and gig economies showcases a range of workers' experiences, corporate strategies of organizing these markets as simultaneously collaborative and highly competitive environments are widespread. Research also suggests that malpractice, worker manipulation, gentrification, and information asymmetries, as the case may be, are to some degree built-in to these platforms, which prioritize the provision of on-demand services. Thus, issues pertaining to adequate signification and, perhaps more tangibly, appropriate jurisdiction arise but hardly cover the problematic in its entirety. Rather, I suggest that many critical ethnographies ignore that for many people the corporate gig markets of exchanging services, time, and property seem to work out to their benefit. This is especially the case for groups and individuals that use gig, sharing, and platform economies for added income, though it must be conceded that this particular portion is on the decline, as more and more people turn to the gig economy as a substitute for waning employment opportunities. A critical intervention that simply scandalizes the exploits of Uber, Airbnb, and AMT may be falling for the appeal of newness, not much unlike the rhapsodies of technologists and various economists. The present discussion is, therefore, prefaced by a robust introduction to the economic, sociotechnical, and cultural precursors to the gig economy. A historical perspective also makes sense of the fact that even startups that specifically vie to improve on the shortcomings of gig economy giants, implement many familiar features in their applications. The gig economy, in all its facets, is part and parcel of far-reaching changes in socioeconomic, cultural, and environmental contexts.

In this view, the gig economy is indicative of the spatialities, temporalities, and itineraries many more are likely to be subjected to in the global circuits of future mobility, logistics, and energy economies. A common denominator among all three gig economy sites is the injunction to efficiently utilize extant resources. To the extent that this paradigm manifests distinctly in the futures of postcapitalism, it is worth noting that the drive toward energy and

resource effectiveness goes back at least to the 1960s, when R. Buckminster Fuller formulated his concept of “ephemeralization,” which describes “the doing of ever more with ever less, per given resource units of pounds, time, and living in ever-increasing numbers.”¹ The connection to a future without work is in fact quite explicit, as Douglas Murphy observes, “Fuller believed that developments in technology were on their way to eliminating labour, claiming that ‘within a century the word *worker* will have no current meaning.’”² However, the trajectory to “enable high standards of material life to persist and prosper by also discovering how to design everyday material culture to reduce, remove, or reduce” is not merely appealing to a narrative of resource conservation but also works well in conjunction with capitalist projects of economic growth. Indeed, as Timothy Luke notes, “Whether capitalist or communist, liberal or authoritarian, these greater and greater ephemeralization outcomes all have come to pass regardless of ideology, government, or religion.”³ The ideas of efficiency in the sense of ephemeralization, then, not only extend to today’s gig economy but, as I shall show, resonate with writers in the econofiction genre.

What adds a special spin to the gig economy is that in the contexts of Uber, Airbnb, and AMT economic activity registers as a peculiar hybrid of work and play, two increasingly inseparable domains.⁴ The prominence of gaming features in gig economy interfaces complicates a clear disambiguation between a working and a playing subjectivity. On this note, the present and final chapter suggests that two interrelated aspects of continuity, broadly construed, emerge from the previous discussion and may now be critically transposed into future imaginaries of economic organization, otherwise known as “econofictions,” a genre that by its very nature shares features of economic literature and science fiction. First, there is a sense in which gig-economy interfaces provide increased traction to an existing sense of continuity that might be considered along the lines of an endless temporality, a technologically mediated sense in which the future amounts only to more of the past and present. David Berry, for instance, theorizes a corresponding trajectory in terms of “real-time streaming technologies

¹ R. Buckminster Fuller, *Utopia or Oblivion: The Prospects for Humanity* (Baden: Lars Müller, 2008), 26.

² Douglas Murphy, *Last Futures: Nature, Technology and the End of Architecture* (London: Verso, 2016) 27.

³ Timothy W. Luke, “Ephemeralization as Environmentalism: Rereading R. Buckminster Fuller’s *Operating Manual for Spaceship Earth*,” *Organization & Environment* 23, no. 3 (2010), 359.

⁴ Galloway, *The Interface Effect*, 27-30.

and the data flows, processual stream-based engines and the computational interfaces that embody them.”⁵ In a sense, this is akin to Alexander Galloway’s claim that the interface is never entirely contained in electronic devices, but assumes a historical dimension.⁶ This dimension is in turn characterized in Gilles Deleuze’s “states of perpetual metastability that operate through challenges, contests” and the general sense that one “is never finished with anything.”⁷ These trajectories apply not only to the gig economy and its variants but also inform a broader culture that functions to assemble gig economy interfaces into a coherent representation of economic activity.

The second meaning of continuity refers particularly to the milieu-related activities of interpreting, negotiating, criticizing, and improving the conditions of gig work as discussed in the previous chapters. Rather than simply construing these activities as reactions to economic imperatives, I suggest that the sense-making among workers in the gig economy complicates reductive imaginaries of so-called postcapitalist futures, which overlook the social dynamics of the very markets from which they project. Some contributors, for instance, miss the fact that precarity is itself a fluid notion that easily assumes more positive signifiers such as nimbleness, resourcefulness, or entrepreneurship. The practice of rendering precarious subjectivity as autonomy is not new. Indeed, it is already present in Foucault’s later lectures, in Deleuze’s work, and has been sociologically depicted in Luc Boltanski’s and Eve Chiapello’s case studies of managerial cadres. In varying degrees, this tradition of political thought emphasizes the shifting qualifiers relating to work and connects them to corresponding modes of social control. In this vein, the present project revisits and extends a respective methodology to the emerging gig economy, exploring how and to what effect its enterprises facilitate and mediate contemporary modes of work. A critical reflection on the materializations of continuity, in this context, not only challenges a postcapitalist conception of work, but also gestures toward more complex and critical engagements with future economic activity.

⁵ Berry, *Critical Theory and the Digital*, 1.

⁶ In this view, it is also no coincidence that the concepts of continuity and indefiniteness are ubiquities in contemporary culture. Be it Disney’s Marvel or Star Wars cinematic universes or computer games that, rather than ending graciously, are continuously updated, patched, and expanded.

⁷ Deleuze, “Postscript,” 4-5.

Exploring the entanglements of technology, culture, and work is vital, given the myriad of recent publications under the umbrella of postcapitalism. Many participants in this discourse forego a detailed analysis of reconfigured microlabor processes and corresponding social relations. Jettisoning a robust understanding of diverse social relations within online labor marketplaces, observers undertheorize the effect of cultural support originating from expansive corporate discourses and user forums, which often include relatively benign, even openly supportive, views. This is not to suggest that the gig economies of Uber, Airbnb, and AMT are beyond reproach but rather to identify these markets as layered and, for better or worse, functional. What is more, users' collaborative engagements with the codes and protocols that organize these markets realize, to some extent, the kind of innovative and entrepreneurial subjectivities, originally promised by the platform providers. Delineating the modes in which gig economy providers manipulate temporality in order to optimize their services and, at the same time, highlighting the ways in which workers continuously negotiate the meaning and viability of productive activities serves to critique extenuating accounts of postcapitalist futures.

Specifically, I discuss three fairly recent postcapitalist projects that in one way or another conjure up frictionless communisms running on near fully automated economies. In this context, it is not trivial to note that the majority of contributions also endorse versions of a universal basic income (UBI) as a response to the sweeping rate of labor replacement. While a thorough discussion on a UBI is certainly worthwhile, the premises on which its implementation rests are ultimately consistent with the superficial readings of technology that inspire the present criticism. Denying these projects their liberatory potentials, however, is here not so much at issue as critically engaging with economies, which futurists often identify as prospective sites of positive freedoms. In this view, there is a need to integrate previous findings with respect to political economy and gig work subjectivities so as to delimit work as an activity unfolding in constantly changing contexts inculcating workers in social and technological practices of rationalization, contestation, and renegotiation. To this end, I preface a short, integrative recapitulation of the previous chapters, extrapolating insights that complicate uncritical and overly sterile treatments on the future of work, which I specify in the subsequent section. Finally, I turn to a few examples in the econofiction genre to investigate

futures more closely aligned with the spirit of the previous discussion. Concretely, I explore ways in which fictional accounts grapple with features of continuity, both in terms of real-time data streams and ongoing employability of people and their resources. To offer a critical reading, I juxtapose the mediation of residual employability as progressive, innovative, and entrepreneurial with the coinciding mechanisms of “the dehumanization of people through a computation layer.”⁸ The present chapter thus intervenes in a discourse that tends toward a problematic complacency regarding automation technologies, which are all too often displayed in a static and asocial manner.

2. Integrative Lessons from Uber, Airbnb, and AMT

Uber, Airbnb, and AMT are neither congeneric nor representative of the entire contemporary gig economy. Nonetheless, as I reemphasize in this section, all three cases illustrate notable similarities on several levels. Each marketplace fabricates, in varying degrees, a certain discourse within and around its platform. Platform providers invest substantial resources into the discursive production of entrepreneurial subjectivities. The freelance rhetoric is somewhat less developed in the case of AMT, which likely benefits from Amazon’s formidable position as the world’s second-most valuable company and is, thus, less dependent on enticing prospective micro workers.⁹ Nonetheless, AMT entertains a Twitter presence as a way of connecting Taskers and Requesters in a seemingly harmonious setting. Meanwhile, many other microlabor providers more aggressively sell their users on an entrepreneurial identity.¹⁰ Eventually, all microlabor providers capitalize systematically on preexisting conditions of widespread precarity, reduced standards of living, globalized markets, proliferating digital technologies, and a culture that increasingly celebrates characteristics of flexibility, mobility, and communicability. In these environments, drivers, home sharers, and Turkers, as the case may be, encounter a contemporary blend of competitive structures,

⁸ Berry, *Critical Theory and the Digital*, 75.

⁹ Ari Levy, “Amazon just passed Alphabet to become the world’s second most valuable company,” *CNBC*, March 20, 2018, <https://www.cnbc.com/2018/03/20/amazon-just-passed-alphabet-to-become-the-worlds-second-most-valuable-company.html>.

¹⁰ Scott Kirsner, “My life as a micro-laborer: Exploring Mechanical Turk, Skyword, TaskRabbit, GrabCAD and more,” *Boston Globe*, April 1, 2012, http://archive.boston.com/business/technology/innoeco/2012/04/my_life_as_a_micro-laborer_exp.html.

collaborative ethos, low transparency regarding the distribution of crucial information, and gamified incentives.

These less than ideal conditions, however, hardly negate the possibilities for users to realize respectable, if contingent, economic gains across all these and similar marketplaces. In other words, the gig economy thrives because for many participants it simply works, if only against the background of deteriorating conventional modes of employment. Indeed, the main reason for the success of the gig economy is a self-perpetuating engine of exacerbating precarity, which in turn generates a heightened demand for people to cast wider nets for economic revenues. Coinciding with this precarity machine in full tilt, additional factors promote the proliferation of micro work across the board. Here, another glance at the concept of the interface is advisable. Accordingly, the interface represents not only a technical means to navigate a particular gig economy but also constitutes a certain kind of cultural programming. Concretely, the interface manifests as a pervasive economization of social relations. If the sphere of the social were aptly represented in terms of a network, then more and more nodes are interfaced by potentially profitable connections. Moreover, while most users are well aware that their economic activities are rather scantily compensated, each platform generates its own support networks, thus mitigating some of the workers' frustrations. In some cases, these networks are conspicuously contiguous to the actual platform companies such as the Airbnb or Uber community blogs, while in other instances it might be more accurate to speak of true (amateur) communities such as the Turkopticon. Indeed, the present account of the gig economy ecology is rather eclectic in that from each economy emerge material discourses where users show solidarity and devise means of hacking the systems, but where they also rationalize their adverse positions in these competitive networks, advising others to do the same.

Despite these subversive moments, the gig economy unequivocally represents an intensification of existing neoliberal preconditions and trends. That is, the gig economy marks an escalation of preceding social, economic, and cultural practices that have sedimented over the last few decades. Qualifying the gig economy as an intensified continuation also constraints the unrelenting push for newness as a materialization of a neoliberal era, where a pervasive

progress-oriented culture obviates historicizing practices. Rather than conceiving of the gig economy firms as innovative disruptors, as mainstream economists and expert technologists seem to think, a more contextualized view delivers an important challenge to techno-utopian narratives, which reduce interfaces and applications to technological black boxes revolutionizing late capitalist modes of production, consumption, and distribution. From a broader socio-historical vantage point, the appearance of ever-improving gadgetry is lifted, and what remains is an exposure of highly deregulated markets that encourage participants to continuously update the values they associate with labor, property, and time. But in this fabricated common sense of empowering technologies lies an uncomfortable truth that is belied by unilateral interpretations of capitalist exploitation: to undertheorize the production of autonomous subjects is to ignore the trajectory of rendering continued economic activity as means to self-actualization. A robust conceptualization of power in the context of the gig economy must reconcile active subjects thriving in their debatable, but not dismissible, roles as freelancers with subjects hurled via machine logics into the temporalities of online marketplaces on a global scale.

Importantly, characterizing the gig economy as inherently ambivalent in this regard is not to concede that nothing critical can be said. Indeed, the critique becomes only fully apparent when the forms of self-actualization synchronize with moments in which subjects are projected into the temporalities and spatialities of future labor demands. Increasingly, flexible freelancing in the gig economy demands a proactive divesting of oneself to the automated mechanisms of distributive systems. These systems, in turn, institute various adaptations concerning identity, behavior, and subjectivity, depending on the required economic protocol. Thus, taking seriously the exigencies in the context of a specific gig economy is imperative to an analysis of present and future work. As documented in the previous chapters, the impositions in the gig economy comprise mainly two related features. First, on a macro level, the gig economy demands a seamless integration of labor potential into the accelerated flows of urban mobility, housing, and on-demand labor. In this view, gig workers are orchestrated to meet the needs of corporate providers to communicate the uninterrupted availability of their service to clients and stakeholders. Consider, for instance, the Uber driver who decides to clock out to

deal with a personal matter. Uber's response to this problem is to steer the driver closer to the eventual destination to add more trips to the schedule. If incidental to the driver (who might be annoyed with, grateful for, or unaffected by this manipulation), once scaled, these techniques allow Uber to substantially improve the scope, density, and flow of its mobility system. This rigorous choreographing is, in the last analysis, in the interest of the company and, in many cities, apparently contributes to (rather than alleviating) urban congestion.

Second, on a micro level, the incorporation of workers into the itineraries and virtual projections of the gig economy significantly influences subjective psychology and behavior. Uber's community guidelines visibly affect drivers' demeanors, not least based on the indisputable efficacy of the reward system in the marketplace. Uber not only manipulates drivers to stay on the road through reminders about projected earnings and non-monetary rewards but also bears considerably on the physical space between drivers and passengers in that anything other than a respectful and agreeable atmosphere is likely to result in potentially damaging ratings. Indeed, indications of a precarious subjectivity that has been trained to adjust its mannerisms and immediate surroundings according to customer demands are widespread. For one, there is the fact that a majority of Uber fares are silent, perhaps prefaced by a brief interaction. Moreover, many drivers invest in headrest display cards to solicit optimal ratings and provide passengers with amenities such as water, gum, or USB cables to charge smart phones. To be sure, neither smooth Uber rides nor in-transit phone chargers sound particularly dreadful, but both nonetheless represent relatively recent cultural transitions toward provisionally implicating personal possessions and spaces in the frictionless mechanisms of semi-automated logistics. The larger cultural acceptance of rideshare platforms and the behavioral codes therein, it should be stressed, are not entirely imposed by service providers but are cogenerated and normalized over time in habits, casual interactions, online forums, and blogs. In other words, what happens to work, at least in the context of Uber, is also significantly a function of social contingency. Despite the undeniable formation of subjectivities through strategic corporate incentivization, accounting for the ways in which drivers continuously make sense of their mutable workplaces reveals the confluence of a flexible yet meticulously organized logistic system and an agential driver subjectivity.

Similarly, the Airbnb economy plays out across two dimensions, where one concerns casting an image of ubiquitous on-demand service of temporary housing, whereas the other regards the production of super hosts, both in a figurative and a literal sense. As in the Uber economy, the two layers are intertwined, since Airbnb's community-oriented discourses perform the cultural work necessary for both the firm to engage its legal disputes and for users to experience the ostensible authenticity of reorganized neighborhoods. Due to Airbnb's relatively agreeable public image, reporting on the firm's involvement in urban gentrification processes is only slowly gaining traction.¹¹ Moreover, Airbnb's discursive fabrication of an image championing cultural diversity, social movements, and timely entrepreneurialism serve not only to reproduce but also to exacerbate existing relations of property, wealth, and class. The tricky thing with Airbnb, however, is that for many people it provides a feasible means to deal with economic uncertainties. Nevertheless, Airbnb's unmitigated appeals to support a struggling working-class ring rather hollow against the background of unchecked cartelization and the preferential treatment of affluent clients, while the latter crucially hinges on startups serving as extensions to Airbnb such as MetroButler or Happy Host. Though it might be too soon at this point to predict long-term implications of home-sharing, it is abundantly clear that Airbnb's practices favor the wealthy, whose sitting fortunes and expanding real estate are readily turned into shadow hotel chains, have produced a secondary wave of a semi-automated gig economy that thrives on precarious labor.

To highlight the broader cultural shift that involves a greater number of people adapting to temporarily renting out their personal spaces, however, a theoretical inquiry must also look beyond the disconcerting practices Airbnb engages in, be it the obfuscation of user data, the systematic evasion of relevant tax laws, or exacerbation of urban gentrification. If regulators found a way to impose fair taxes on Airbnb while leaving somewhat intact its financial profitability, the pressures to engage in this type of economic activity would nonetheless unfold unevenly across different classes. Airbnb has already achieved a kind of prismatic effect in that its diverse user base holds quite diverging views on the platform. To members of affluent groups, Airbnb offers a practically invisible gateway to maximize existing wealth, seamlessly

¹¹ Zoe Rosenberg, "Airbnb Leads to Median Rent Increase, Promotes Gentrification: Study," *Curbed*, January 30, 2018, <https://ny.curbed.com/2018/1/30/16950424/airbnb-gentrification-nyc-median-rent-study>.

enabling the conservation of economic status and, presumably, affording the kind of freelance lifestyle that gig economy firms are frequently alluding to. In other words, at a certain level of wealth Airbnb certainly delivers on its promise to allow people to actualize themselves in other areas, specifically when passive income coincide with freed-up time. Meanwhile, to members of lower economic classes, Airbnb serves as a much-needed opportunity to earn (additional) income and/or realize increased mobility that would otherwise be unattainable if simply because the amount of time required to engage in Airbnb, even in lower-class brackets, hardly compares to that of most other job descriptions. Thus, Airbnb's opaque practices of enabling quasi-cartels complicit in new waves of gentrification, hardly negate its role as a marketplace of social and economic opportunity. Nevertheless, one of the key features of this marketplace is its participation in shifting the meaning of precarity from a sense of uncertainty toward a sense of potentiality.

The discussion on AMT yields a similarly layered picture. If early coverage on Amazon's "artificial artificial intelligence" lab might have been caught up in crowdsourcing romanticism, subsequent accounts have gained significantly in critical traction. Accordingly, some critics denounce AMT as a digital sweatshop that entraps workers in opaque, disadvantageous, and ultimately exploitative labor environments while failing to provide communicative recourse to either Requesters or Amazon as an adjudicating authority. From researchers engaging in participant observations to first-hand accounts from Turkers frequenting online communities, these contentious moments have been documented in detail. In many instances, however, support networks don't merely register scathing criticisms but also facilitate savvy communities and effective technological tools optimizing turker experiences and, thus, leading to an increased turker motility, which translates to actual material gains. Nevertheless, these encouraging moments largely remain in a DIY sphere, which must be conceptualized against a broader context of powerful corporate networks that envision workers as quasi-machinic components in increasingly automated logistic circuits. The problem with rigorous criticisms of AMT is, then, not so much that they are misguided or misplaced but rather that these readings omit the ways in which AMT works out for many individuals, sometimes even in full-time

settings. Despite the many occupational exigencies of turking, the designs of Amazon's crowdsourcing market are consistent with a culture of perpetual economic tasks.

Focusing on the programming of economic injustices and the one-sided working conditions, though politically indispensable, offers only partial insight into the underlying mechanisms driving AMT. Specifically, these approaches tend to neglect the many users who have no tangible interests in designing the market in a more transparent or democratic manner. Rather, as critics of the Daemo initiative observe, many Turkers are perfectly comfortable in an asocial digital setting, which seems to be a side-effect of a scalable labor marketplace. Those endorsing AMT commonly consider its offer as representative of contemporary working conditions such as the widespread establishing of flexible hours, remunerative use of daily screen time, and generally keeping an open mind about emerging types of potentially profitable activity. In this regard, AMT's design closely resembles video game user interfaces in that it displays completed tasks, approval rates, meta achievements (such as master's badges), and transferable earnings. Indeed, there is a case to be made that while AMT's design mainly corresponds to managerial or macro aspects of computer games, Uber's incentives more closely mirror in-game graphics, though there are certainly overlaps in each case. At any rate, the question arises as to what might be expected from a more equitable version of AMT, one that actually scales better than, say, Daemo and doesn't divide its user base between academic and corporate research markets. It is likely that the major premises of profit-oriented and taskified work in the service of informational capitalism would still apply, if worker demands were better recognized and sufficiently addressed. In other words, the main trajectory of people running piecemeal digital errands for large data brokers would not be fundamentally affected by more regulations. Consequently, more attention must be paid to the modes in which gig economies secure users' attention and prolonged engagement.

After all, the cultural production in all of the examined online labor (and resource) markets is integral to their functioning, though the ways in which users interpret and negotiate economic activity in these contexts certainly vary. Uber and Airbnb, for instance, rely heavily on equipping users on their respective supply sides with the symbolic and semiotic tools of shining an entrepreneurial light on their efforts, while AMT directs more representational resources

toward prospective clients, especially firms dealing in large scale data mining, intelligence, and advertising. Nevertheless, many Turkers consider themselves part and parcel of a freelance workforce, conveniently turning screen time into a profitable hustle, thus undercutting the grind of more conventional forms of employment. I suggest therefore that at least some of the criticisms in the context of the gig economy undertheorizes the affective, agential, and relatively autonomous subjectivities that are produced in these economies. That intervention, however, is less aimed at critiquing ethnographic and experiential research per se than at extrapolating from these insights in order to foster a broader conversation on the future of work as the gig economy constitutes fruitful sites for studying the social, political, and cultural implications of automation. Concretely, theoretical and ethnographic accounts of Uber, Airbnb, and AMT highlight some of the lacunae in recent writings on the future of work, particularly in postcapitalist projects. Thus, the aim of the next section is to revisit some of these projects and to delineate how the previous discussion might elevate the quality of discourse.

3. On Determinist Futures in Postcapitalist Discourse

Today's left seems replete with coherent visions of the future, more specifically the future of work and resource distribution. This dearth of equalitarian prospects is largely consistent with a jettisoning of serious utopian engagements in recent modernity and the socioeconomic and cultural impacts of neoliberal reform. While Margaret Thatcher's now infamous dictum that "there is no alternative" epitomizes this sentiment from an institutional and policy perspective, Fredric Jameson's oft-cited claim that "it has become easier to imagine the end of the world than the end of capitalism" stands in for the cultural decline in alternative futures.¹² In the same vein, Fisher's writings capture poignantly the pervasiveness of a capitalist ethos and, importantly, its inescapable demands of deleterious self-optimization. In the wake of the cataclysmic financial crisis in 2008 and amidst far-flung predictions about automation technologies replacing large parts of the workforce, however, several so-called postcapitalist projects have emerged, sketching roadmaps out of the contemporary malaise.

¹² Fredric Jameson, "Future City," *New Left Review* 21, (2003), 76.

Postcapitalism mainly addresses problems of inequality and precarity as well as other concerns related to political, economic, and social organization. Importantly, most authors of postcapitalist projects decidedly endorse modern technological innovations, which they attempt to incorporate into their future schematics. Beyond the commendable feat of reintroducing more radical visions into contemporary social and political thought, however, postcapitalist projects warrant critical reflection, not least considering the insights on gig economies ascertained in the previous chapters. Concretely, I argue that postcapitalism suffers from a sociotechnological naïveté in that many authors in this field severely undertheorize the ways in which emerging technologies actually play out as concrete applications. The tendencies to overestimate the liberatory potential of modern technologies become particularly apparent at the intersections of information capitalism and logistics industries. Challenges to this faith crystalize in the modes through which gig economy providers program workers into their platforms, thus building infrastructures that project workers on-demand. Moreover, workers' continuous efforts to interpret and improve their conditions signal the need to conceptualize the gig economy not merely as a subsistence function, but also as an entanglement of economic activity, play, and the (attempted) actualization of a freelance subjectivity. Integrating the latest versions of economic imperatives with a serious notion of mimetic entrepreneurialism, I offer a more critical perspective on various postcapitalist demands, as outlined in the examples below.

The first postcapitalist contribution to be reviewed is Nick Srnicek's and Alex Williams' *Inventing the Future: Postcapitalism and a World Without Work*, a recent book that received an unusual amount of attention from academic and journalistic outlets. Primarily, the authors call upon a fragmented left to reorganize around a common, equalitarian vision of the future. Bound in a catchy and manifesto-like apparel, *Inventing the Future* sounds a neo-Promethean clarion call to not only unite the left but to do so explicitly by appropriating emerging technologies and deploying them in the service of eliminating drudgery. Srnicek and Williams insist on realizing four demands, namely "building a post-work society on the basis of fully automating the economy, reducing the working week, implementing a universal basic income, and achieving a cultural shift in the understanding of work."¹³ Leading up to this ambitious list,

¹³ Srnicek and Williams, *Inventing the Future*, 108.

the authors provide a provocative analysis of the left's recent failures to translate heterogeneous grievances into a coherent political platform. This presumed inability prompts Srnicek and Williams to coin the somewhat derogatory expression of "folk politics," calling into question the political efficacy of horizontalist tactics and emphases on localism as evinced, for instance, in the Occupy Movement. To juxtapose the ineffectiveness of an almost chronically scattered opposition, *Inventing the Future* dedicates an entire chapter to the success of the neoliberal project, whose long-term vision and political tenacity it somehow seeks to emulate the tendency to think according to a long-term strategic vision.

Perhaps more problematic than the questionable division of politics into transient tactics on one side and globally organized—presumably neo-Leninist or neo-Gramscian—vanguards on the other is the authors' conjecture of how technology relates to the future of work. *Inventing the Future* claims that its project is far less idealistic than skeptical readers might think as some of the necessary components of this future are already implementable today, though the authors concede that other features, such as the ubiquitous culture of (Protestant) work ethic, would be more difficult to address. Despite such glimpses of pragmatism, however, Srnicek's and Williams' fully automated future exhibits a distinct lack of attention to the power relations of currently existing processes of automation. Precisely this deficit, I suggest, provides an opportunity to bring utopian futures in conversation with more detailed accounts of the ways in which automation unfolds in today's gig economy. As Galloway puts it succinctly, "One thing this book does not provide is an examination of the technology of *modern* capitalism. [...] Thus *Inventing the Future* has a sort of Wizard of Oz problem at its core. In other words, Srnicek and Williams fall into a trap of conceptualizing the advance of technological processes apart from the social world, taking at face value the technologists' plugs of automation as a frictionless replacement for labor.

Despite a laudable openness toward science and technology there are, according to Galloway, two main criticisms regarding Srnicek and Williams' casual assertions about automation technologies. First, *Inventing the Future* provides little in the way of an account of the political economy of automation, that is, a critical articulation of the corporate providers and stakeholders, such as Google, Amazon, and the various gig economy firms that actually

make automation happen. For starters, Srnicek and Williams' adoption of a technology-centered futurism misses that the very labels of "automation," "artificial intelligence," and "on-demand networks" are part and parcel of a capitalist and proprietary economy that exerts a massive influence on how these invocations materialize as practices and techniques.¹⁴ As the previous analysis suggests, what is eventually called automation is significantly a function of capital valuation and does not necessarily correspond to a technically adequate meaning of automation per se. In this context, it is worth mentioning that Amazon is not the only tech giant capitalizing on the glossy rhetoric of automation and AI. Google, for instance, not only launched its own AMT counterpart in Google Surveys, but has also recently announced the rebranding of its entire research division into Google AI,¹⁵ thus further contributing to the mystification of crowdsourcing as quasi-machinic intelligence. Furthermore, there is no indication that companies with proven track records in capitalizing on a precarious class would suddenly become allies in a presumably global quest of liberating humans from the need to liquidate their labor and resources.¹⁶ In short, thinking about technologies, be it in domains of information (code, protocols, and "smart" algorithms), logistics (rideshare networks and "smart" cars), or material production (3-D printers), as removed from capitalist flows is of limited usefulness.

In a similar vein, Galloway's second criticism concerns the ways in which automation relates to spatialities, temporalities, and actual labor processes. Rather than heralding automation as a potentially liberating force, it is imperative to ascertain how automation acts concretely on the times and spaces of production as well as on the workers, whose toil it is supposed to alleviate. In this regard, Galloway clarifies that automation predominantly "*transforms the organic composition* of labor through deskilling and proletarianization, the offshoring of menial labor, and the introduction of technical and specialist labor required to

¹⁴ Srnicek's *Platform Capitalism* addresses some of these shortcomings.

¹⁵ Ingrid Lunden, "Google goes all-in on artificial intelligence, renames research division Google AI," *TechCrunch*, May 8, 2018, <https://techcrunch.com/2018/05/08/google-goes-all-in-on-artificial-intelligence-renames-research-division-google-ai/>.

¹⁶ Elsewhere, Srnicek tackles this problematic more forthrightly, advocating for a nationalization of today's technology giants. See Nick Srnicek, "We Need to Nationalise Google, Facebook and Amazon. Here's Why," *The Guardian*, August 30, 2017, <https://www.theguardian.com/commentisfree/2017/aug/30/nationalise-google-facebook-amazon-data-monopoly-platform-public-interest>.

design, build, operate, and repair those seemingly “automagical” machines.”¹⁷ Galloway’s account of automation, then, recalls Irani’s disambiguation between the fiction of automation as fully replacing workers on the one hand and the evidence of automation primarily displacing workers on the other. Consider, for instance, the deskilling of Uber drivers, whose GPS navigation and centrally monitored scheduling systems compete with former cab drivers’ tacit knowledges of urban geographies. The informalizing of logistics, here, coincide with trends of deskilling and a displacing in that that workers are forced to closely adhere to processual optimizations disseminated to them via Uber’s interface. These dynamics, of course, play out similarly in any Amazon fulfillment center, where handheld tablet aids, or so-called “pic-mods” enforce specific time frames in which workers must complete packaging or stowing tasks. The practices of black boxing and the myth of “automagical” machines belie the ways in which automating applications actually manage taskification and informalization on the back of workers. Vague references to automation, then, ultimately serve to perpetuate a sterile image of technology and reify a public at once preoccupied with convenience and ill-equipped to comprehend the technological intricacies that fuel the corporate incursion into all areas of modern life.

Taken together, these criticisms illustrate how perspectives undiscerning of structural and experiential insights ultimately serve the owners and investors of these machines and, by extension, reinforce narratives that deem automating technologies as unequivocally desirable outcomes. The demands for more and faster automation, whether in the form of computational code or machinic equipment, ring quite hollow in the face of actually existing economic disparities. As Ian Lowrie notes, “The past decade has seen a wealth of social-theoretical research into contemporary forms of algorithmic rationality and control, which has rather convincingly demonstrated the inescapable partiality of such systems and their tendency to be employed as decidedly undemocratic forms of technocratic management.”¹⁸ Overly optimistic progress narratives gloss over the concrete ways in which transformations of productive processes take place. Such glossing in turn obscures power relations between

¹⁷ Galloway, “Brometheanism,” (original italics).

¹⁸ Ian Lowry, “On Algorithmic Communism,” *Los Angeles Review of Books*, January 8, 2016, <https://lareviewofbooks.org/article/on-algorithmic-communism/#!>.

service users and service providers, rendering postcapitalism a distant dream and, perhaps, an unwitting embrace of capitalist structures.¹⁹ In short, there is no evidence that simply perpetuating either industrial processes like robotic warehouse extensions, mobility networks of Uber and Airbnb, or informational labor systems like AMT will mitigate further informalization, deskilling, and precarization of workers.

Another contribution to the discourse of postcapitalism is presented in Paul Mason's *Postcapitalism: A Guide to Our Future*, which couples a Marxian long-wave analysis with an upbeat discussion on the liberating effects of network technologies. In a somewhat lengthy first part of the book, Mason argues that economies generally go through 50-year long cycles in which 25 years of economic growth precede 25 years of decline. Following Nikolai Kondratieff's theory, phases of decline are generally accompanied by depressions before igniting the pursuit of new technologies, business models, markets, and moneys. At a very basic level, Kondratieff highlights the integral role of crisis for a Marxian economic analysis. Specifically, in Mason's view, his theory might have been used to predict the depression of the 1930s and the subsequent economic upswing toward the end of the 1940s.²⁰ Though the long wave theory that Schumpeter also subscribed, might have some purchase for mid-century macroeconomic developments, according to its logic a crisis was due toward the end of the 1990s. Rather than ending in crisis, however, the 1990s witnessed the rise of what Mason calls "the basic elements of the fifth long cycle: [...] network technology, mobile communications [and] a truly global marketplace and information goods."²¹ Somewhat confusingly, Mason also states that "the fourth long cycle was prolonged, distorted and ultimately broken,"²² ostensibly by the same factors. Indeed, Mason goes to considerable lengths to reconstruct the virtues of long-wave theory, only to declare it disrupted around the turn of the millennium, paving the way for a new, postcapitalist economic order based on the inherent properties of communication technology. Replacing an economic determinism with a technological determinism, Mason spends the second half of the book exploring how the internal processes of modern information

¹⁹ Given such confusion Galloway notes "Brometheanism" that "it becomes difficult to untangle accelerationism from the most visionary dreams of the business elite."

²⁰ Mason, *Postcapitalism*, 32-37.

²¹ *Ibid.*, 48.

²² *Ibid.*, 78.

and communication technology are “corroding market mechanisms, eroding property rights and destroying the old relationship between wages, work and profit.”²³

In this vein, Mason repeatedly argues that “info goods change everything,” meaning that the ways in which information can be copied and distributed radically undermine previous forms of value creation.²⁴ The respective economic formula is allegedly simple: “Once you can copy and paste something, it can be reproduced for free. It has, in economic-speak, a ‘zero-marginal cost.’”²⁵ If Mason offers some scattered criticisms to mainstream economic concepts, his presentation of the tensions posed by emergent information technologies nonetheless remains rudimentary and in many ways linear. He assumes, for instance, that intellectual property rights ultimately run counter to the telos of value creation as conceived in conventional supply and demand models. As Christian Fuchs observes, however,

Although the copying time of information is very small, there are ways of how capital tries to institute new forms of labour-time, value creation and exploitation in the information economy. [...] Commercial software and other information goods are not just produced once and then copied, but there are often new versions, constant updates, and forms of support labour.²⁶

Mason’s analysis on Google’s partial engagement in Open Source Software (OSS) illustrates not only his inability to apply a robust framework of political economy to the problem but also his lack of theorizing technologies as social milieus. Accordingly, Mason writes that “Google is a hard-assed capitalist firm, but in the pursuit of its own interests it is forced to fight for some standards to be open and some software to be free. Google is not postcapitalist—but as long as it keeps Android Open Source it is being forced to act in a way that prefigures non-capitalist forms of ownership and exchange.”²⁷ There are several things to note here regarding Mason’s compounding of the two distinct concepts of “open” with “non-capitalist.” First, the extent to which technology firms engage in OSS projects is not simply a function of technical necessity. This assumption derives from Mason’s misguided view of

²³ Ibid., 112.

²⁴ Ibid., 116.

²⁵ Ibid., 117.

²⁶ Christian Fuchs, “Henryk Grossmann 2.0: A Critique of Paul Mason’s Book ‘PostCapitalism: A Guide to the Future’,” *tripleC: Communication, Capitalism & Critique* 14, no. 1 (2016), 236.

²⁷ Mason, *Postcapitalism*, 123.

Google as primarily a communication firm with a popular search function. Fuchs rightly criticizes this narrow and idealized account, suggesting instead that the ways in which user attention contributes to accumulation processes in the context of online advertisement add a crucial component to Mason's simplistic model, which puts a premium on the labor of coders, programmers, and other professionals. In the Uber economy, for instance, drivers generate value not only by performing cheap logistic services but also by reacting to advertisement in the form of psychological stimuli, not dissimilar from the ways in which various online social media firms vie for user attention. Thus, Uber offering services with limited revenue prospects, as is the case for the UberNIGHT pilot in Tel Aviv,²⁸ hardly constitutes a postcapitalist moment in the mobility industry.

Mason's faith in the determinist features of technologies speaks to an underlying problem of contemporaneously theorizing openness and control. While the sheer empirical scope of commercial outsourcing, crowdsourcing, and distributing microlabor already renders Mason's projection as overly confident, there is an additional case to be made that his postcapitalism severely misconstrues the power relations at work in OSS. A Mason-inspired analysis on Microsoft's recent acquisition of the code repository GitHub, for instance, would constitute yet another presumed technology giant's turn toward postcapitalism.²⁹ After all, not dissimilar to Google's ventures regarding OSS development, GitHub's services considerably pervade amateur circles, all sorts of small businesses, and software solutions for larger corporations. According to Mason's perspective, Microsoft's integration of GitHub might, then, indicate a reversal of the proprietary ethos spelled out in Bill Gate's infamous 1976 "Open Letter to Hobbyists," which anticipated the monopolization of operating system and programming language. Against this legacy, Mason recalls the persistence of OSS, citing figures showing that "maybe 10 per cent of all corporate computers are running Linux."³⁰ The overly antagonistic juxtaposition of Gates' proprietary software capitalism versus Richard Stallman's *GNU Manifesto*, a milestone in the open source movement and the subsequent Linux

²⁸ Megan Rose Dickey, "Uber is partially banned in Tel Aviv," *TechCrunch*, November 27, 2017, <https://techcrunch.com/2017/11/27/uber-is-partially-banned-in-tel-aviv/>.

²⁹ Klint Finley, "Microsoft's GitHub Deal is its Latest Shift From Windows," *Wired*, June 4, 2018, <https://www.wired.com/story/microsofts-github-deal-is-its-latest-shift-from-windows/>.

³⁰ Mason, *Postcapitalism*, 122.

development, however, belies the complex and nonlinear entwinements of technology and culture. Specifically, Mason's uncritical championing of OSS prematurely extrapolates essential features of a narrow technological application to a broader social context.

Indeed, since Gates' open letter and Microsoft's subsequent rise to record market capitalization in 1999,³¹ the firm has undertaken several steps toward embracing OSS projects. Concretely, Microsoft has made its .Net Core (a general-purpose development platform) available to applications on Linux and OS X,³² made Git (a tool to manage source code) more compatible with the Windows operating system,³³ and integrated Linux into its cloud platform Azure.³⁴ These definitive moves, however, hardly indicate Microsoft's turn toward a non-capitalist future. Rather, these integrative moments mark strategies in the face of competition with the expansive networks of AWS, Google's AI division, and Facebook's recent endeavors in the same vein. The subtle absorption of technical openness into the flows of digital capitalism can be gleaned from the responses to the Microsoft-GitHub deal. As one analyst puts it, "I think it will be good for the open source community. I don't think Microsoft has the mentality of the early 2000s where it thought 'if you want to work with our technologies, you need to work in our ecosystem.'"³⁵ In this view, Mason's insistence on a postcapitalist trajectory intrinsic to contemporary technologies—such as the collaborative collecting of information on Wikipedia, the undeniable utility of open coding platforms, and, ostensibly the sharing of labor and property in the gig economy—fails to reconcile technological features of openness with core tenets of present and future capitalism.

The underlying problem in Mason's project could be remedied by once again recalling Deleuze's notion that "machines are [...] social before they are technical," that is, the context in which machines perform their functions take precedent over their narrowly defined technical

³¹ Dan Seifert, "Apple beats Microsoft's 1999 market cap record," *The Verge*, August 20, 2012, <https://www.theverge.com/2012/8/20/3255593/apple-now-most-valuable-company-ever-overtaking-1990s-microsoft>.

³² Klint Finley, "Microsoft Says It's in Love with Linux. Now It's Finally Proving It," *Wired*, June 27, 2016, <https://www.wired.com/2016/06/microsofts-open-source-love-affair-reaches-new-heights/>.

³³ Klint Finley, "Microsoft Cradles Linus Torvalds' (Other) Baby," *Wired*, January 30, 2012, <https://www.wired.com/2013/01/microsoft-announces-support-for-linus-other-baby/>.

³⁴ Klint Finley, "Now You Can Use Linux Just Like Microsoft Does," *Wired*, March 10, 2016, <https://www.wired.com/2016/03/now-can-use-linux-just-like-microsoft/>.

³⁵ Chris Stokel-Walker, "Microsoft is buying GitHub, but will the open source world follow?" *Wired*, June 5, 2018, <http://www.wired.co.uk/article/microsoft-github-deal-open-source>.

processes. Deleuze makes another critical point in “Postscript,” where he advances a reading of how the rise of networks begets a kind of synchronicity of openness and control, specifically “ultrapid forms of free-floating control.”³⁶ These two seemingly disparate ideas are synthesized aptly in Galloway’s and Thacker’s *The Exploit*. Thus, “network control is unbothered by individuated subjects (subjected subjects). In fact, individuated subjects are the very producers and facilitators of networked control. Express yourself! Output some data! It is how distributed control functions best.”³⁷ According to the coincidence of openness and distribution on one side and control, particularly a control geared toward production on the other a tentative prediction of GitHub’s future seems feasible. Though Mason’s postcapitalist prophecies are implausible, it is equally unlikely that Microsoft will turn GitHub into a closed system where it would increasingly advance its own languages and developer tools. Not only would a move toward a closed system be nearly technically impossible, but it would also undermine the very reasons Microsoft might have had for purchasing GitHub to begin with. Instead, Microsoft could opt to influence the social parameters of the code repository. Given Microsoft’s recent purchase of LinkedIn, for instance, it would seem reasonable that some features known from other social networks might also be introduced to GitHub, that is, something in the way of a soft commercialization of virtually all processes on the code platform. To be sure, already before the acquisition, GitHub featured a value system in which code collections were visible for other users, while tech businesses commonly visit GitHub profiles of prospective programmers. Like Uber or AMT, GitHub exhibits crucial features of social networks and gig economy milieus, though incentivization and publicization of achievements entail a higher degree of decentralization and weaker elements of corporatization.

Considering the ways in which GitHub already displays typical social network features is, thus, key in making sound predictions about the future of open-source programming. For a while now, GitHub users have been able to follow other users, stay informed about commits (the GitHub equivalent of a code gig) and discussions, and star other users’ projects to indicate

³⁶ Deleuze, “Postscript,” 4.

³⁷ Alexander R. Galloway and Eugene Thacker, *The Exploit: A Theory of Networks* (Minneapolis: University of Minnesota Press, 2007), 41.

interest and appreciation. The following feature in turn resulted in a “rockstars” label designating popular and active users. Indeed, a study exploring the ways in which the added social structure influences GitHub’s social network seems to “indicate that a new type of leadership may be emerging through follower relationship.”³⁸ The same study also argues that mere activity does not have the same impact, not least because activity is simply not publicized to the extent of popularity. Microsoft might further advance such strategies of social engineering, especially regarding real-time coding and, importantly, the continuous publicization of these processes. In this view, GitHub would further move toward the dynamics of social networks, which not only meticulously register the activity of its user base but also endlessly stream that activity. As a result, it would become impossible to distinguish between the value of code, that is, its technical quality, and the value of GitHub metrics referring to that same code. The social structure, then, increasingly becomes built into coding development as more and more seemingly unrelated activities are integrated into the GitHub experience. Meanwhile, in external GitHub user forums, the premonitions about the repository’s future materialize in quite humorous ways. On Reddit/github, for instance, a popular submission depicts an image of a projected GitHub interface. The design suggests that a thoroughly updated version of the repository might look similar to a Facebook or Twitter profile, which allows for pop-ups displaying achievement updates.³⁹ Rendering GitHub both a more expressive and competitive network, without formally jeopardizing its decentral components, would surely be in Microsoft’s interest, not least because such an approach would also leave open the possibility of eventually turning GitHub into some kind of informalized labor market, another gig economy.

4. The Continuous Production of Meaning in the Future of Work

The above critique of postcapitalist futures, particularly the ways in which these futures rely on economic or technological determinisms, as outlined in the brief discussion of

³⁸ Kelly Blincoe, Sheoran Jyoti, Sean Goggins, Eva Petakovic, and Daniela Damian, “Understanding the popular users: Following, affiliation influence and leadership on GitHub,” *Information and Software Technology* 70 (2016), 38.

³⁹ “This is how github will looks like a year from now [REPOST],” *Reddit/Github*, 2018, https://www.reddit.com/r/github/comments/8ooatk/this_is_how_github_will_looks_like_a_year_from/.

Microsoft's GitHub purchase, warrants a broadening of the search results to include futures demonstrating a nuanced sensibility for the social dynamics of capital accumulation. Thus, identifying respective projects in the econofiction genre is more conducive in accounting for the sociotechnical processes identified in the context of the gig economy. Moreover, a turn toward narrative accounts will benefit a subsequent extrapolation of possible trajectories of the future of work. Whereas many gig economy dynamics are context dependent, fictional displays of social life might fruitfully invite concerns about the future of work from a broader audience. Peter Frase's *Four Futures: Life After Capitalism*, the third contribution to the postcapitalist discourse to be discussed, is something of a hybrid in this regard in that it puts forth a relatively static framework of Weberian ideal types in which more refined scenarios play out. *Four Futures* describes four thought experiments construed along an x-axis delimiting material scarcity versus abundance and a y-axis delimiting egalitarianism or authoritarianism.⁴⁰ Consequently, Frase arrives at four quadrants, each representing a possible future after capitalism. It should be noted that compared to the two previous postcapitalist texts, Frase takes more seriously the prospect of a future in which the material gains of automation are stymied by the consequences of global climate change. Thus, Frase's futurizing is, to some extent, cognizant of many tendencies playing out in the gig economy, particularly the imperatives of Uber and Airbnb to do more with less.

In familiar postcapitalist fashion, Frase's first scenario takes him down the optimistic path toward future prosperity courtesy of miraculous automation, more or less as presented in *Inventing the Future*. The second case, meanwhile, projects current anthropogenic anxieties about a cataclysmically changing climate, leading to a future of scarcity. For either case, Frase adds caveats of political organization such that resources are distributed in either centralized or decentralized modes. Though *Four Futures* at least formally considers the fate of humanity as contingent, there is an underlying sense of utopianism in Frase's work, particularly regarding emergent production capacities. While Frase guards, via the authoritarian caveat, against anticipating a universal end of work, he nonetheless suggests, "human societies will

⁴⁰ Frase, *Four Futures*.

increasingly face the *possibility* of freeing people from involuntary labor.”⁴¹ Like other contemporary commentators on the left, Frase indulges an obsession with 3-D printing and increasingly decentral production methods. Thus, he undertheorizes the extent to which differential forces of taskification, crowdsourcing, and proprietary tendencies in the context of the gig economy continuously restructure the interfaces of work and the social meaning of productive activities. *Technology* in *Four Futures* remains an abstract concept, largely unaffected by the social parameters and perimeters that would guide its application in any one of the future scenarios.

Though Frase concedes that a material utopia where capital no longer determines the access to vital and recreational resources might still contain effectual hierarchies such as sign-value and popularity, one has to wonder if the current trend toward precisely these modes of stratification might pose the greatest challenge for a postcapitalist project. Inflating this concern to a damning criticism, however, would be slightly disingenuous since Frase dedicates an entire future to the possibility of a post-scarcity rentism, which addresses some of the themes discussed in earlier chapters. As Frase correctly observes,

A characteristic of most mainstream economic discussions is their presumption that if human labor in production becomes technically unnecessary, then it will inevitably disappear. However, the system of capital accumulation and wage labor is both a technical device for efficient production and a system of power.⁴²

To conceptualize the complex ways in which systems of power unfold in the present-day gig economy, I have suggested a critical framework that describes not only the changing infrastructures facilitated by corporate providers but also the social market activities that produce competitive freelance subjectivities. Despite their competitive set-up, these market environments produce value beyond strictly monetary currency, including surveillance data, social recognition, and flexible arrangements. Though the political economy perspective in each chapter shows the significance of monopoly capitalism, large investments, and systemic informalization, the attraction of the gig economy, by and large, is its veneer of entrepreneurial

⁴¹ Peter Frase, “Four Futures,” *Jacobin*, December 13, 2011, <https://www.jacobinmag.com/2011/12/four-futures>.

⁴² Frase, *Four Futures*, 70.

promise. Especially, the effective material discourses supporting these platforms, while clouding their vast power, complicate a sustained critique, thus leaving plenty of room to doubt the feasibility of any postcapitalist dreams.

To an extent, Frase acknowledges the nonlinear social components in theorizing the future of work, though his emphasis on societal archetypes prevents a more detailed exploration. To exemplify a postcapitalist economy, Frase cites science fiction writer Cory Doctorow's novel *Down and Out in the Magic Kingdom*,⁴³ where people are amassing so-called "whuffie," a currency representing approval presumably inspired by the efficacy of rating systems, badges, and points. What Frase seems to miss, however, is that Doctorow's point goes beyond a mere premonition of a reputation-based capitalism. Rather, Doctorow's underlying critique suggests that a seamless transmutation of all activity into quantifiable values is already unfolding in the present. Thus, Doctorow's insight is rather disquieting as the combination of corporate rent extraction with practices of establishing competitive, but largely voluntary environments already constitutes the building blocks of any gig economy. The roles of corporate providers in this context become discretely normalized and appear increasingly compatible with a politics of decentralization and wider access. A crucial weakness of postcapitalism might be that it takes for granted an end of capitalism and a broad introduction of new modes of accumulation into social systems. Doctorow, however, offers an eerie narrative version of the Deleuzian paradigm wherein control continues to exist in the forms of movement and possibility. In this vein, speculating when and how a postcapitalist future might arrive seems less productive than theorizing the ways in which technical interfaces and changeable subjectivities coincide to convey only the appearance of such a future. In this view, movement as the imperative to tangible mobility shifts towards an injunction of communicability.

Accordingly, the richest and most illuminating futures for current purposes are the kind where social and cultural dynamics of the gig economy are sensibly extrapolated into new environments. Productive activity, broadly construed, in these econofictions remains a central fulcrum between society and technology. Doctorow imagines several futures that curiously

⁴³ Cory Doctorow, *Down and Out in the Magic Kingdom* (New York: Tor, 2003).

complicate the teloi of supposedly clear-cut technologies and fixed political systems by way of introducing ambivalent social dynamics, idiosyncratic cultural conventions, and heterogeneous protagonists. While the social status currency of the whuffie in *Down and Out* marks such a moment, Doctorow's latest novel, *Walkaway*, delimits the matter more succinctly.⁴⁴ Indeed, it is useful to pay attention to the narrative premises that characterize the kind of worldbuilding taking place in the econofiction genre. Compared to Srnicek and Williams' "fully automated future," Mason's "zero-marginal-cost-techno-utopia," and even Frase's somewhat static ideal typography of future imaginaries, Doctorow decidedly refuses to adopt the classic categories of utopian and dystopian fiction writing. In the words of a reviewer,

It's the story of a utopia in progress, as messy as every new thing ever is, told in the form of people talking to each other, arguing with each other and working together to solve problems. It's all about the deep, disturbing, recognizable weirdness of the future that must come from the present we have already made for ourselves, trying to figure out what went wrong and what comes next.⁴⁵

Given this degree of verisimilitude in Doctorow's work, reviewers label *Walkaway* a "disturbingly plausible"⁴⁶ future and "the ultimate dystopian version of the 'gig' economy."⁴⁷ The claim to authenticity, however, is not reducible to the perceived likelihood of Doctorow's futurizing, that is, its ostensible accuracy. Instead, *Walkaway* makes for a compelling read because it takes seriously the notion that technologies are continuously subject to application and interpretation. Given its emphasis on social interaction and contingency, then, it is not clear whether *Walkaway* takes place in a utopian or dystopian setting, a tension that produces a simple but effective narrative effect of contracting a comfortable distance that science fiction often offers, replacing it with a lower suspension of disbelief. At any rate, the consequences of

⁴⁴ Cory Doctorow, *Walkaway* (New York: Tor, 2017).

⁴⁵ Jason Sheelan, "In 'Walkway,' A Blueprint For A New, Weird (But Better) World," *NPR*, April 27, 2017, <https://www.npr.org/2017/04/27/523587179/in-walkaway-a-blueprint-for-a-new-weird-but-better-world>.

⁴⁶ James Bradley, "Walkway Review: Cory Doctorow's Science Fiction Crammed with Ideas," *The Sydney Morning Herald*, May 26, 2017, <https://www.smh.com.au/entertainment/books/walkaway-review-cory-doctorows-science-fiction-crammed-with-ideas-20170522-gwae09.html>.

⁴⁷ Sean Gallagher, "Cory Doctorow's *Walkaway*: Hardware Hackers Face the Climate Apocalypse," *Ars Technica*, April 25, 2017, <https://arstechnica.com/gaming/2017/04/cory-doctorows-walkaway-hardware-hackers-face-the-climate-apocalypse/>.

climate change and surveillance society seem almost inescapable in *Walkaway*. Discussing the influences for the novel, which might be considered a prequel to *Down and Out*, Doctorow notes, “the most perfect society will exist in an imperfect universe, one where the second law of thermodynamics means that everything needs constant winding up and fixing and adjusting.”⁴⁸ The emphasis on an imperfect world where constant updates are required challenges the sterile futures of postcapitalism, which present its technologies not only as asocial but also, in a sense, as ending the social. As the insights into the gig economy suggest, however, such visions are derived from rudimentary understandings of economies as merely accruing capital value and technologies as simply performing their desired functions. Instead, the gig economy deals in power and subjectivity. Thus, platforms might be rigged to mainly benefit the providers, but they also reproduce an ethos of hustling for more than money.

There is one *Walkway* character who conveys this point most strikingly, Limpopo, a manager at the “Belt and Brace,” a bed and breakfast type place in the badlands of an uninviting civilization. “Walkaways” walk away from civilization due to excessive control by a wealthy elite and the dread of “non-work,” a post-scarcity phenomenon that does not coincide with resources and access for all. Limpopo helped create the bed and breakfast from scavenged waste and advanced coding/printing software that amounts to something of a GitHub and Airbnb synthesis. The distance to civilization, interestingly, does not cancel the blurry lines between work and play so familiar from the gig economy, even though the “Belt and Brace” is clearly modeled after a futuristic communist enclave. Limpopo is introduced as feeling ambiguous about her stellar commits record, which charts actions taken by users to repair and improve the building and its technical infrastructure:

In a gift economy, you gave without keeping score, because keeping score implied an expectation of reward. If you’re doing something for reward, it’s an investment, not a gift. [...] It was so easy to keep score, the leaderboard was so satisfying that she couldn’t help herself. She wasn’t proud of this. Mostly.⁴⁹

⁴⁸ Doctorow, “Disasters Don’t Have to End in Dystopias.”

⁴⁹ Doctorow, *Walkway*, 44.

In a sense, the passage shows the organic social interactions at the intersection of work and play that would likely remain, even in a postcapitalist future. In another sense, the passage illustrates the ease through which gig economy providers could incorporate and manipulate such social relations through marketplace dynamics, thus affecting the production of freelance subjectivities that are constantly involved in economic activity. Programming interfaces to integrate seamlessly with everyday activity constitutes an efficient means for guaranteeing users' prolonged engagement with gigs, commits, HITs, shares, and so on. Influencing the respective discourses, meanwhile, proves to be an inexpensive, but emphatic device in letting gig work appear as current. Neither the increased programming of user behavior nor the modes of interpretation and action by users, however, is adequately captured by the sampled discourse of postcapitalism. To expand the literature in this field, a critical analysis of corporate infrastructure might be reasonably extended to include ethnographic insights and even narrative components.

5. Conclusion

Despite the criticism in this chapter, developing the discourse on postcapitalism is crucial since few other genres currently attempt to elevate work-related issues in a politically organized fashion. As an important caveat to this claim, however, contributors to postcapitalism are well advised to interrogate their preoccupation with a technology-induced future of fully automated production systems and highly distributed services. Rather, postcapitalism must be informed by present-day accounts on labor dynamics ranging from fulfillment centers to online crowdsourcing platforms. The gig economy provides an instructive study in this regard, particularly due to its reliance on the algorithmic management of labor that is portrayed as automation. Whereas the general sense that work is undergoing drastic changes might be uncontroversial, the previous analysis indicates that automation processes and the networked distribution of services are part and parcel of highly stratified and asymmetrical enterprises. The concrete emphases on milieus—construed as at once creative and dependent communities—help illustrate both the diversity and the substantial similarities between gig economy platforms. Such networks and their interfaces create environments that

subtly undermine the liberatory hopes expressed in postcapitalist literature, not least by involving workers in perpetual market activity but also by couching the proliferation of predictive and manipulative features as entrepreneurialism and forms of play, as the case may be. Though the modes through which firms achieve these effects vary, they generally comprise techniques not reducible to narrow technical applications but include cultural initiatives such as the fabrication and reproduction of discourses aimed at affirming respective subjectivities.

In particular, the effects that seem to elide the registers of postcapitalist advocates are the simultaneous production of vertical power relations in favoring logistics providers on one side and freelance and/or ludic but increasingly disenfranchised gig worker subjectivities on the other. In mainstream discourses, more than in postcapitalism, such informalization processes are almost entirely detached from concerns about labor, couched in a technologist language of automation and artificial intelligence. According to ethnographic and more critical research, however, these flashy signifiers merely conceal the integration of precarious, distributed, and projected labor. These occlusions materialize, for instance, in the Uber and Airbnb economies as projected coverage or, in the case of AMT, as “artificial artificial intelligence,” readily employable by large corporate clients. The concealment of actual labor experiences constitutes a built-in component of a scalable gig economy, thus necessitating an integrative critique of political economy and experiential accounts as the main building blocks of a research program for the future of work. In this view, the current discussion also aims at transposing digital ethnographies into a realm of political economy and, importantly, theory, which is tasked with providing broader narratives to current phenomena.

The perspective developed here suggests not only that late capitalism is hardly a dated mode of accumulation, as commentators like Mason seem to think, but also that the ways in which users are captured in ostensibly collaborative economies and decentralized technologies exceed a common sense understanding of exploitation. This mode of capture highlighted in these pages, gestures toward a more open and subjective control paradigm, specifically one in which working conditions register increasingly as freelance opportunities, potentialities, and modes of liquidation. According to this paradigm, economic imperatives and autonomy are mediated by interfaces that seamlessly fuse categories of work and play, raising important

questions about what counts as meaningful economic activity. Thus, among further tasks, it is crucial further conceptualize how categories of openness, sharing, and self-expression, become integrated into the cultural logics of potential labor and predictable market dynamics as well as how technological infrastructures will accommodate such economic activity. Likewise, it is up to further study to concretely outline the ways in which a gig economy subjectivity is not merely entangled in semi-automated spaces but also projected forward as a potentiality of future work. In this view, an analysis paying attention to the conjunction of individual flexibility and external prefiguration constitutes a useful platform for a further investigation into the means of algorithmic prediction that will doubtless become tools in organizing future work.

To reiterate the intervention of the project, postcapitalism tends to neglect the contingencies that accompany certain technologies, specifically the primarily profit-oriented applications characterizing the gig economy. Existing smartphone applications might be useful in organizing the scalable exchange of personal means of transportation and lodging, but in a competitive culture of relentless self-optimization, such services mostly serve to exacerbate social conditions rather than mitigating them. Mainstream and neoclassical economics as well as Silicon Valley apologists will continue to deem such observations as perfectly normal, if not desirable, consistent with the dogma that higher competition results in more innovation and that inequality is but a fact of life. A political project traditionally rooted in a concern for labor, however, cannot simply succumb to a naïve trust that technology has finally reached a singular point in history at which the sheer technical capacities of machines eclipse the social relations from which they have emerged. Though useful in their capacities of raising interest and initiating conversations, many postcapitalist projects fail to address the shadowy spaces of automation. In precarious work environments (of which the colloquial gig economy is but one manifestation of rampant informalization), automation mostly yields the displacement of labor, manifest in adjusted tasks that integrate users more closely into the machinic circuits of platform providers. Meanwhile, qualitative research also shows that the euphemisms of freelancers and entrepreneurs are not entirely reducible to a hollow Californian Ideology, ostensibly resulting in closed feedback loops between wealthy firms and constrained workers.

Instead, the active character of the gig economy is part and parcel of its interfaces, allowing workers to attain a relative motility by communicative and, in some cases, technical means. Beyond these moments of gaining advantages over the systems imposed by providers, the conditions of gig work are not perceived homogeneously but are subject to interpretation and, thus, implicate a culture that is, always in flux. The adverse effects of taskification and the declining quality of work are not historical facts but are enmeshed with rationalization processes and complex dynamics in the production of social meaning. Stressing the agency of Uber driver networks or AMT tools such as the Turkopticon, for instance, is not to condone these platforms or even to underrate the concomitant forms of control but rather to theorize the context of work as one in which meaning is constantly produced, a common sense not entirely determined by machinic enslavement or corporate logic. Whether that common sense echoes enthusiastic industry paeans of platform providers or surrenders to compliance and docile gratitude, the milieus in question remain potentially vibrant spaces in which the complex forms of economic activity may be appraised.

Lastly, connecting the work on gig economy milieus with the econofiction genre serves several purposes. From a methodological point of view, an imaginative element as evident in Doctorow's writing, for instance, has the potential to capture the social dimension of the gig economy and the dynamic spaces of rationalizing, navigating, and challenging the logics of labor. This emphasis not only broadens a narrow grasp of market technologies but may also inform theoretical projects grappling with algorithmic mediation of work. Socially inflected econofictions may further help to universalize qualitative concerns by appealing to more imaginative sensibilities rather than relying on purely technical or quantitative accounts. Regarding the selection of online labor markets, namely Uber, Airbnb, and AMT, fictional accounts enable a productive synthesizing of such services to arrive at more nuanced projections of future work. It could be argued that the different contemporary platforms might fuse into more integrative systems, given different sociopolitical conditions. That is, to a considerable extent, the epistemic separateness of their provisions—mobility, housing, and data services—is maintained by corporate structures and proprietary networks. The gig economy's on-demand logic prescribes the ceaseless computerization of humans and their

immediate surroundings as building blocks for ever-changing environments. Thus, the future of work is eclipsed by an endless present of continuous enterprising distributed across an increasing number of accounts.

Bibliography

Airbnb in New Orleans *Airbnb Citizen*, October 17, 2016. Accessed January 2, 2018.

<https://www.youtube.com/watch?v=1FnHkOfH-w4>.

New home-sharing rules proposed by Berlin Government *Airbnb*, December 13, 2017. Accessed January 14, 2018. <https://www.airbnbcitizen.com/new-home-sharing-rules-proposed-by-berlin-government>.

Airbnb's Positive Impact in France *Airbnb*, November 12, 2015. Accessed December 10, 2017. <https://blog.atairbnb.com/airbnb-economic-impact-france/>.

Aarian Marshall. "The Never-Ending Self-Driving Car Project." *Wired*, April 8, 2018. Accessed May 12, 2018. <https://www.wired.com/story/when-will-self-driving-cars-ready>.

Aarian Marshall. "Ford Paves a Path from Big Automaker to Big Operating System." *Wired*, January 26, 2018. Accessed April 20, 2018. <https://www.wired.com/story/ford-future-operating-system>.

Aarian Marshall. "Toyota Joins with Uber and Amazon to Find its Self-Driving Future." *Wired*, January 8, 2018. Accessed March 17, 2018. <https://www.wired.com/story/toyota-self-driving-epalette-uber-amazon-pizza-hut>.

Abby Jackson. "Silicon Valley is so expensive, people who make \$400,000 think they're middle class – here's what middle class actually is in the 25 largest US cities." *Business Insider*, February 21, 2018. <https://www.businessinsider.in/Silicon-Valley-is-so-expensive-people-who-make-400000-think-theyre-middle-class-heres-what-middle-class-actually-is-in-the-25-largest-US-cities/articleshow/63020115.cms>.

Amazon Mechanical Turk. "Acxiom Saves 50% on Transcription and Outsourcing Costs with Amazon Turk." Accessed May 21, 2018.

https://requester.mturk.com/case_studies/cs/acxiom.

Adam Duvander. "Amazon's Mechanical Turk Simplifies Automation." *Wired*, July 30, 2008. Accessed May 26, 2018. <https://www.wired.com/2008/07/amazon-s-mechanical-turk-simplifies-automation>.

Adam Lang. "Why is it Called Airbnb?" *Rewind&Capture*, December 23, 2014. Accessed December 4, 2017. <http://www.rewindandcapture.com/why-is-it-called-airbnb/>.

Airbnb vs. Berlin: What the Data Tells Us. "FH Potsdam." Accessed January 18, 2018.
<http://www.airbnbsberlin.com/#otherCities>.

Airbnb. "Airbnb: A New Resource for Middle Class Families." 2015. Accessed January 30, 2018.
<http://www.airbnbaction.com/wp-content/uploads/2015/10/Middle-Class-Economic-Report-FINAL.pdf>.

Alana Semuels. "What Amazon Does to Poor Cities." *The Atlantic*, February 1, 2018. Accessed May 29, 2018. <https://www.theatlantic.com/business/archive/2018/02/amazon-warehouses-poor-cities/552020>.

Alex Rosenblat. "The Network Uber Drivers Built." *Fast Company*, January 9, 2018. Accessed March 26, 2018. <https://www.fastcompany.com/40501439/the-network-uber-drivers-built>.

Alexander R. Galloway. "Brometheanism." *Cultureandcommunication*, June 16, 2017. Accessed July 28, 2018. <http://cultureandcommunication.org/galloway/brometheanism>.

Alexander R. Galloway. "Ending the World as We Know It: Alexander R. Galloway in Conversation with Andrew Culp." *boundary2*, June 29, 2016. Accessed July 2, 2018. <https://www.boundary2.org/2016/06/ending-the-world-as-we-know-it-an-interview-with-andrew-culp/>.

Alexander R. Galloway. "A Questionnaire on Materialism." *Cultureandcommunication*, March 7, 2016. Accessed May 3, 2018. <http://cultureandcommunication.org/galloway/a-questionnaire-on-materialisms>.

Alison Griswold. "Uber has terminated its self-driving car operators in Pittsburgh." *Quartz*, July 11, 2018. Accessed July 20, 2018. <https://qz.com/1326155/uber-has-terminated-its-self-driving-car-operators-in-pittsburgh/>.

Alison Griswold. "Airbnb is Thriving. Hotels Are Thriving." *Slate*, July 6, 2015. Accessed December 3, 2017.
http://www.slate.com/articles/business/moneybox/2015/07/airbnb_disrupting_hotels_it_hasn_t_happened_yet_and_both_are_thriving_what.html.

Allison Griswold. "Airbnb has a really convoluted process for being 'transparent' with New York City." *Quartz*, December 15, 2015. Accessed January 4, 2018. <https://qz.com/571165/airbnb-is-sharing-more-data-but-in-a-really-convoluted-way>.

- Andrew Griffin. "Is Uber still working in London? Appeal delays decision as taxi app's fate hangs in the balance." *Independent*, October 13, 2017. Accessed January 3, 2018.
<http://www.independent.co.uk/news/business/news/uber-still-working-in-london-is-ban-uk-england-legal-transport-not-down-night-bus-a7998436.html>.
- Andrew J. Hawkins. "Coming soon to the Uber app: bikes, rental cars, and public transportation." *The Verge*, April 11, 2018. Accessed April 26, 2018.
<https://www.theverge.com/2018/4/11/17220408/uber-jump-getaround-masabi-cities-data>.
- Anna Rhodes. "Uber: Which Countries Have Banned the Controversial Taxi App." *Independent*, September 22, 2017. Accessed March 27, 2018.
<http://www.independent.co.uk/travel/news-and-advice/uber-ban-countries-where-world-taxi-app-europe-taxi-us-states-china-asia-legal-a7707436.html>.
- Anthony Kalamar. "Sharewashing is the New Greenwashing." *OpEdNews*, May 13, 2013. Accessed April 28, 2018. https://www.opednews.com/populum/printer_friendly.php.
- Ari Levy. "Amazon just passed Alphabet to become the world's second most valuable company." *CNBC*, March 20, 2018. Accessed June 23, 2018.
<https://www.cnbc.com/2018/03/20/amazon-just-passed-alphabet-to-become-the-worlds-second-most-valuable-company.html>.
- Arun Sundararajan. "Why the Government Doesn't Need to Regulate the Sharing Economy." *Wired*, October 22, 2017. Accessed March 10, 2018. <https://www.wired.com/2012/10/from-airbnb-to-coursera-why-the-government-shouldnt-regulate-the-sharing-economy/>.
- Barad, Karen Michelle. *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning* / Karen Barad. Durham, N.C.: Duke University Press; Chesham Combined Academic [distributor], 2007.
- Barbrook, Richard. *Imaginary futures: From thinking machines to the global village* / Richard Barbrook. London: Pluto, 2007.
- Barbrook, Richard, and Andy Cameron. "The Californian ideology." *Science as Culture* 6, no. 1 (1996): 44–72. doi:10.1080/09505439609526455.
- Bauman, Zygmunt. *Liquid modernity*. Cambridge: Polity Press, 2000.

- Ben Kinnard. "The difference between Uber and Airbnb: Sharing your time vs. your assets." *Medium*, March 4, 2017. Accessed February 3, 2018. <https://medium.com/@CaptainKinnard/the-difference-between-uber-and-airbnb-sharing-your-time-vs-your-assets-a796b65bc6af6>.
- Benjamin Edelman. "Uber Can't Be Fixed—It's Time for Regulators to Shut It Down." *Harvard Business Review*, June 21, 2017. Accessed May 4, 2018. <https://hbr.org/2017/06/uber-cant-be-fixed-its-time-for-regulators-to-shut-it-down#comment-section>.
- Bennett, Jane. *Vibrant matter: A political ecology of things* / Jane Bennett. Durham, N.C.: Duke University Press, 2010.
- Berry, David M. *Critical theory and the digital*. Critical theory and contemporary society 2015: 1. New York, N.Y.: Bloomsbury Academic, 2015.
- Blincoe, Kelly, Jyoti Sheoran, Sean Goggins, Eva Petakovic, and Daniela Damian. "Understanding the popular users: Following, affiliation influence and leadership on GitHub." *Information and Software Technology* 70 (2016): 30–39. doi:10.1016/j.infsof.2015.10.002.
- Boltanski, Luc, and Eve Chiapello. *The new spirit of capitalism*. London: Verso, 2007.
- Bowen, Frances, and J. Alberto Aragon-Correa. "Greenwashing in Corporate Environmentalism Research and Practice." *Organization & Environment* 27, no. 2 (2014): 107–12. doi:10.1177/1086026614537078.
- Brian Chesky. "7 Rejections." *Medium*, July 12, 2015. Accessed October 22, 2017. <https://medium.com/@bchesky/7-rejections-7d894cbaa084>.
- Brian Massumi. "The Thinking-Feeling of What Happens: A Semblance of a Conversation." *Inflexions* 1, no. 1 (2008): 1–40. Accessed June 11, 2018. http://inflexions.org/n1_massumihtml.html.
- Brian X. Chen. "The Guide to Being an Airbnb Superhost." *The New York Times*, January 11, 2017. Accessed December 14, 2017. <https://www.nytimes.com/2017/01/11/technology/personaltech/the-guide-to-being-an-airbnb-superhost.html>.

- Brynjolfsson, Erik, and Andrew McAfee. *The second machine age: Work, progress, and prosperity in the time of brilliant technologies*. 1st pbk. ed. New York, London: W. W. Norton, 2016, cop. 2014.
- Calo, Ryan, and Alex Rosenblat. "The Taking Economy: Uber, Information, and Power." *SSRN Electronic Journal*, 2017. doi:10.2139/ssrn.2929643.
- Ceylan Yeginsu. "If Workers Slack Off, the Wristband Will Know. (And Amazon Has a Patent for It.)" *The New York Times*, February 1, 2018. Accessed May 20, 2018. <https://www.nytimes.com/2018/02/01/technology/amazon-wristband-tracking-privacy.html>.
- Charles A. O'Reilly III, and Michael L. Tushman. "The Amazon Model." *Stanford University Press*, April 7, 2016. Accessed May 10, 2018. <http://stanfordpress.typepad.com/blog/2016/04/the-amazon-model.html>.
- Charles Maldonado. "New Orleans City Council to consider limited rollback on Airbnb licenses." *The Lens*, March 8, 2018. Accessed April 3, 2018. <https://thelensnola.org/2018/03/08/new-orleans-city-council-to-consider-limited-rollback-on-a-certain-type-of-airbnb-license/>.
- Charlie Rose. "The Sharing Economy." July 5, 2016. Accessed May 7, 2018. <https://charlierose.com/videos/28419>.
- Chris Stokel-Walker. "Microsoft is buying GitHub, but will the open source world follow?" *Wired*, June 5, 2018. Accessed August 10, 2018. <http://www.wired.co.uk/article/microsoft-github-deal-open-source>.
- Christian Fuchs. "Henryk Grossmann 2.0: A Critique of Paul Mason's Book "PostCapitalism: A Guide to Our Future"" *tripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society* 14, no. 1 (2015). doi:10.31269/triplec.v14i1.757.
- Chun, Wendy Hui Kyong. "On Software, or the Persistence of Visual Knowledge." *Grey Room* 18, no. 4 (2005): 26–51. doi:10.1162/1526381043320741.
- Coole, Diana H., and Samantha Frost. *New materialisms: Ontology, agency, and politics / edited by Diana Coole and Samantha Frost*. Durham, N.C.: Duke University Press, 2010.
- Crary, Jonathan. *24: Late capitalism and the ends of sleep / Jonathan Crary*. London: Verso, 2014.

Airbnb. "Creative hosts on Airbnb Toronto." September 11, 2017. Accessed March 26, 2018.
<https://www.airbnbcitizen.com/creative-hosts-on-airbnb-toronto/>.

Csikszentmihalyi, Mihaly. *Flow: The psychology of optimal experience*. [Nachdr.]. Harper Perennial Modern Classics. New York: Harper [and] Row, 2009.

Culp, Andrew. *Dark Deleuze*. Forerunners ideas first. Minneapolis (Minn.): University of Minnesota Press, 2016.

Curran, Thomas, and Andrew P. Hill. "Perfectionism Is Increasing Over Time: A Meta-Analysis of Birth Cohort Differences From 1989 to 2016." *Psychological Bulletin*, 2017.
doi:10.1037/bul0000138.

Daisuke Wakabayashi. "Self-Driving Uber Car Kills Pedestrian in Arizona, Where Robots Roam." *The New York Times*, March 19, 2018. Accessed April 21, 2018.
<https://www.nytimes.com/2018/03/19/technology/uber-driverless-fatality.html>.

Dan Blystone. "The Story of Uber." *Investopedia*, March 19, 2018. Accessed April 1, 2018.
<https://www.investopedia.com/articles/personal-finance/111015/story-uber.asp>.

Dan Seifert. "Apple beats Microsoft's 1999 market cap record." *The Verge*, August 20, 2012. Accessed August 9, 2018. <https://www.theverge.com/2012/8/20/3255593/apple-now-most-valuable-company-ever-overtaking-1990s-microsoft>.

Dan Solomon. "Hailing a Different Ride in Austin." *MIT Technology Review*, March 7, 2017. Accessed April 4, 2018. <https://www.technologyreview.com/s/603792/hailing-a-different-ride-in-austin>.

Danielle Paquette. "People are worried Amazon will replace Whole Foods workers with robots." *The Washington Post*, June 16, 2017. Accessed May 8, 2018.
https://www.washingtonpost.com/news/wonk/wp/2017/06/16/people-are-worried-amazon-will-replace-whole-foods-workers-with-robots/?utm_term=.5df9352fea3d.

Danny Vinik. "The Real Future of Work." *Politico*, January/February 2018. Accessed August 31, 2018. <https://www.politico.com/magazine/story/2018/01/04/future-work-independent-contractors-alternative-work-arrangements-216212>.

Darrel Etherington. "Uber CEO says 2019 is the target for IPO." *TechCrunch*, November 9, 2017. Accessed January 14, 2018. <https://techcrunch.com/2017/11/09/uber-ceo-says-2019-is-the-target-for-ipo>.

David A. Morse. "Promise and Peril of Automation." *The New York Times*, June 9, 1957. Accessed June 26, 2018.

Medium. "Decentralization and the Future of Ridesharing." August 2, 2016. Accessed May 5, 2018. <https://blog.arcade.city/decentralization-and-the-future-of-ridesharing-29d8f84a4ea7>.

Deleuze, Gilles, and Félix Guattari. *A thousand plateaus: Capitalism and schizophrenia / Gilles Deleuze, Félix Guattari; translation and foreword by Brian Massumi*. Minneapolis: University of Minnesota Press, 1987.

Deleuze, Gilles, and Seán Hand. *Foucault*. Minneapolis: University of Minnesota Press, 1988.

Doctorow, Cory. *Down and out in the Magic Kingdom*. 1st pbk. ed. New York: Tor, 2003.

Doctorow, Cory. *Walkaway*. First edition. New York: Tor, 2017.

Dominic Rushe. "Amazon fulfillment centers don't boost employment, analysis finds." *The Guardian*, February 1, 2018. Accessed May 9, 2018. <https://www.theguardian.com/technology/2018/feb/01/amazon-fulfillment-centers-dont-boost-employment-analysis-finds>.

Ellen Cushing. "Amazon Mechanical Turk: The Digital Sweatshop." *UTNE Reader*, January 2013. Accessed March 12, 2018. <https://www.utne.com/science-and-technology/amazon-mechanical-turk-zm0z13jfzlin>.

Ellen Sheng. "Silicon Valley's dirty secret: Using a shadow workforce of contract employees to drive profits." *CNBC*, October 22, 2018. Accessed October 26, 2018, <https://www.cnbc.com/2018/10/22/silicon-valley-using-contract-employees-to-drive-profits.html>.

Emily Dreyfuss. "A Bot Panic Hits Amazon's Mechanical Turk." *Wired*, August 17, 2018. Accessed August 27, 2018. <https://www.wired.com/story/amazon-mechanical-turk-bot-panic>.

Eric Sherman. "Sure, Unemployment Went Down – Because More People Left The Workforce." *Forbes*, May 5, 2018. Accessed October 26, 2018,

- <https://www.forbes.com/sites/eriksherman/2018/05/05/sure-unemployment-went-down-because-the-number-of-people-working-did/#2f83a192408b>.
- Ester Bloom. "Here's how much money American's are making from the gig economy." *CNBC*, June 20, 2017. Accessed April 23, 2018. <https://www.cnbc.com/2017/06/19/heres-how-much-money-americans-are-making-from-the-gig-economy.html>.
- Eubanks, Virginia. *Automating inequality: How high-tech tools profile, police, and punish the poor*. First Edition. New York NY: St. Martin's Press, 2017.
- Feargus O'Sullivan. "The City With the World's Toughest Anti-Airbnb Laws." *Citylab*, December 1, 2016. Accessed March 22, 2018. <https://www.citylab.com/equity/2016/12/berlin-has-the-worlds-toughest-anti-airbnb-laws-are-they-working/509024>.
- Fiona Graham. "Crowdsourcing Work: Labour on Demand or Digital Sweatshop?" *BBC*, October 22, 2010. Accessed May 17, 2018. <http://www.bbc.com/news/business-11600902>.
- Fisher, Mark. *Capitalist realism: Is there no alternative? / Mark Fisher*. Ropley: O Books, 2009.
- Ford, Martin R. *Rise of the robots: Technology and the threat of a jobless future*. New York: Basic Books, op. 2015.
- Fort, Karën, Gilles Adda, and K. Bretonnel Cohen. "Amazon Mechanical Turk: Gold Mine or Coal Mine?" *Computational Linguistics* 37, no. 2 (2011): 413–20. doi:10.1162/COLI_a_00057.
- Foster, John Bellamy, and Robert W. McChesney. "Surveillance Capitalism: Monopoly-Finance Capital, the Military-Industrial Complex, and the Digital Age." *Monthly Review* 66, no. 3 (2014): 1. doi:10.14452/MR-066-03-2014-07_1.
- Foucault, Michel, and Michel Senellart. *Security, territory, population: Lectures at the Collège de France, 1977-1978*. 1. Picador ed. Picador. New York: Palgrave Macmillan, 2010.
- Foucault, Michel, and Michel Senellart. *The birth of biopolitics: Lectures at the Collège de France, 1978-1979*. 1st Picador pbk ed. New York: Picador, 2010.
- Frase, Peter. *Four futures: Visions of the world after capitalism*. London: New York; Verso, 2016.
- Fredric Jameson. "Future City." *New Left Review* 21 (2003): 65–79. Accessed July 25, 2018. <https://newleftreview.org/II/21/fredric-jameson-future-city>.
- Fuchs, Christian. *Digital labour and Karl Marx*. New York, NY: Routledge, Taylor & Francis Group, 2014.

- Fuller, Richard Buckminster, and Jaime Snyder. *Utopia or oblivion: The prospects for humanity*. New ed. Baden, Switzerland: Lars Müller Publishers, 2008.
- Galloway, Alexander R. *The interface effect*. Cambridge: Polity, 2012.
- Galloway, Alexander R., and Eugene Thacker. *The exploit: A theory of networks / Alexander R. Galloway and Eugene Thacker*. Electronic mediations 21. Minneapolis, Minn., London: University of Minnesota Press, 2007.
- Genosko, Gary. *Félix Guattari: A critical introduction / Gary Genosko*. Modern European thinkers. London: Pluto, 2009.
- Gewos. "Airbnb and the Berlin housing market: The impact of Airbnb properties on the housing supply in Berlin." Accessed January 15, 2018. <https://www.airbnbaction.com/wp-content/uploads/2014/12/AirbnbandtheBerlinhousingmarket.pdf>.
- Gilles Deleuze. "Postscript on the Societies of Control." *October* 59 (1992): 3–7. Accessed June 12, 2018. <https://www.jstor.org/stable/778828>.
- Gillespie, Tarleton. *Custodians of the internet: Platforms, content moderation, and the hidden decisions that shape social media*. New Haven: Yale University Press, 2018.
- Gillespie, Tarleton. *Wired shut: Copyright and the shape of digital culture*. Cambridge, Mass., London: MIT Press, 2009.
- Grogan, Samuel, and Aleecia M. McDonald. "Access Denied! Contrasting Data Access in the United States and Ireland." *Proceedings on Privacy Enhancing Technologies* 2016, no. 3 (2016): 191–211. doi:10.1515/popets-2016-0023.
- Hacker, Jacob S. *The great risk shift: The new economic insecurity and the decline of the American dream / Jacob S. Hacker*. Rev. and expanded. ed. New York, Oxford: Oxford University Press, 2008.
- Han, Byung-Chul, and Erik Butler. *The burnout society*. Stanford California: Stanford Briefs an imprint of Stanford University Press, 2015.
- Han, Byung-Chul, and Erik Butler. *The transparency society*. Stanford California: Stanford Briefs an imprint of Stanford University Press, 2015.
- Harcourt, Bernard E. *Exposed: Desire and disobedience in the digital age / Bernard E. Harcourt*. Cambridge, Massachusetts: Harvard University Press, 2015.

Hardt, Michael, and Antonio Negri. *Multitude: War and democracy in the age of empire*. New York, NY: Penguin Books, 2005.

Harman, Graham. *Tool-being: Heidegger and the metaphysics of objects / Graham Harman*. Chicago: Open Court, 2002.

Harriet Taylor. "What happened in Austin after Uber and Lyft got up and left." *CNBC*, August 18, 2016. Accessed May 2, 2018. <https://www.cnbc.com/2016/08/18/what-happened-in-austin-after-uber-and-lyft-got-up-and-left.html>.

Harvey, David. *A brief history of neoliberalism*. Oxford: Oxford University Press, 2011.

Ho, Karen Zouwen. *Liquidated: An ethnography of Wall Street / Karen Ho*. Durham, N.C.: Duke University Press; Chesham Combined Academic [distributor], 2009.

Reddit/mturk. "How to become a Master?," 2016. Accessed May 23, 2018. https://www.reddit.com/r/mturk/comments/4eanl1/how_to_become_a_master.

Amazon Mechanical Turk. "Human intelligence through an API: Access a global, on-demand, 24x7 workforce." Accessed May 13, 2018. <https://www.mturk.com>.

Ian Lowry. "On Algorithmic Communism." *Los Angeles Review of Books*, January 8, 2016. Accessed August 5, 2018. <https://lareviewofbooks.org/article/on-algorithmic-communism/#!>

Ingrid Burrington. "Why Amazon's Data Centers Are Hidden in Spy Country." *The Atlantic*, January 8, 2016. Accessed May 10, 2018. <https://www.theatlantic.com/technology/archive/2016/01/amazon-web-services-data-center/423147>.

Ingrid Lunden. "Google goes all-in on artificial intelligence, renames research division Google AI." *TechCrunch*, May 8, 2018. Accessed July 25, 2019. <https://techcrunch.com/2018/05/08/google-goes-all-in-on-artificial-intelligence-renames-research-division-google-ai/>.

Ingrid Lunden. "Uber's Travis Kalanick on Regulators: You Have to Grit Your Teeth, Be a Warrior, or Do Something Less Disruptive." *TechCrunch*, September 12, 2012. Accessed May 11, 2018. <https://techcrunch.com/2012/09/12/ubers-travis-kalanick-on-regulators-you-have-to-grit-your-teeth-be-a-warrior-or-do-something-less-disruptive/>.

Ipeirotis, Panagiotis G. "Analyzing the Amazon Mechanical Turk marketplace." *XRDS: Crossroads, The ACM Magazine for Students* 17, no. 2 (2010): 16. doi:10.1145/1869086.1869094.

Irani, Lilly. "The hidden faces of automation." *XRDS: Crossroads, The ACM Magazine for Students* 23, no. 2 (2016): 34–37. doi:10.1145/3014390.

Ivan Chen-O'Neill. "Proof: Arcade City is a Scam." *Ivan Chen-O'Neill, "Proof: Arcade City is a Scam," Medium, September 8, 2016, <https://medium.com/@CTUAgentIvan/arcade-city-is-a-scam-98c22c557f18>*, September 8, 2016. Accessed February 1, 2018. <https://medium.com/@CTUAgentIvan/arcade-city-is-a-scam-98c22c557f18>.

Jaison R. Abel, Richard Deitz, and Yaqin Su. "Are Recent College Graduates Finding Good Jobs." *Current Issues in Economics and Finance* 20, no. 1 (2014): 1–8. Accessed June 20, 2018. https://www.newyorkfed.org/medialibrary/media/research/current_issues/ci20-1.pdf.

James Bradley. "Walkway Review: Cory Doctorow's Science Fiction Crammed with Ideas." *The Sydney Morning Herald*, May 26, 2017. Accessed August 3, 2018. <https://www.smh.com.au/entertainment/books/walkaway-review-cory-doctorows-science-fiction-crammed-with-ideas-20170522-gwae09.html>.

Jason Read. "Of Labor and Human Bondage: Spinoza, Marx, and the "Willing Slaves" of Capitalism." *LA Review of Books*, December 9, 2014. Accessed January 23, 2018. <https://lareviewofbooks.org/article/labor-human-bondage-spinoza-marx-willing-slaves-capitalism/#!>

Jason Sheelan. "In 'Walkway,' A Blueprint For A New, Weird (But Better) World." *NPR*, April 27, 2017. Accessed August 2, 2018. <https://www.npr.org/2017/04/27/523587179/in-walkaway-a-blueprint-for-a-new-weird-but-better-world>.

Jason Tanz. "How Airbnb and Lyft Finally Got Americans to Trust Each Other." *Wired*, April 23, 2014. Accessed May 2, 2018. <https://www.wired.com/2014/04/trust-in-the-share-economy>.

Jeff Desjardins. "One Chart Explains Jeff Bezos' Sprawling Empire." *Business Insider*, June 21, 2017. Accessed May 2, 2018. <http://www.businessinsider.com/jeff-bezos-sprawling-empire-in-one-chart-2017-6>.

Jeff Howe. "Crowdsourcing—Now at a Store Near You." *Wired*, April 16, 2013. Accessed May 26, 2018. <https://www.wired.com/2013/04/crowdsourcing>.

Jeff Howe. "The Rise of Crowdsourcing." *Wired*, June 1, 2006. Accessed May 5, 2018. <https://www.wired.com/2006/06/crowds>.

Jessica Leber. "The Secrets of Uber's Mysterious Surge Pricing Algorithm, Revealed." *Fast Company*, October 29, 2015. Accessed March 14, 2018. <https://www.fastcompany.com/3052703/the-secrets-of-ubers-mysterious-surge-pricing-algorithm-revealed>.

Jodi Kantor, and David Steinfeld. "Inside Amazon: Wrestling Big Ideas in a Bruising Workplace." *The New York Times*, August 15, 2015. <https://www.nytimes.com/2015/08/16/technology/inside-amazon-wrestling-big-ideas-in-a-bruising-workplace.html>.

Joel Rubin. "Lawsuit accuses Uber of ripping off drivers, paying them smaller fares than what passengers say." *Los Angeles Times*, April 28, 2017. Accessed February 23, 2018. <http://www.latimes.com/local/lanow/la-me-uber-drivers-lawsuit-20170429-story.html>.

Joel Valenzuela. "Arcade City a.k.a. 'Uber Killer' Hard Forks, Founder Claims Fraud." *The Cointelegraph*, January 9, 2017. Accessed March 3, 2018. <https://cointelegraph.com/news/arcade-city-aka-uber-killer-hard-forks-founder-claims-fraud>.

Johana Bhuiyan. "A New Video Shows Uber CEO Travis Kalanick Arguing with a Driver Over Fares." *Recode*, February 28, 2017. Accessed May 22, 2018. <https://www.recode.net/2017/2/28/14766964/video-uber-travis-kalanick-driver-argument>.

John Maynard Keynes. *Economic Possibilities for our Grandchildren*. Essays in Persuasion. 1931.

Jon Russel. "Amazon completes its acquisition of Middle Eastern e-commerce firm Souq." *TechCrunch*, July 3, 2017. Accessed May 7, 2018. <https://techcrunch.com/2017/07/03/amazon-souq-com-completed>.

Julie Bort. "Amazon now employs a whopping 542,000 people and plans to hire thousands more." *Business Insider*, October 26, 2017. Accessed May 15, 2018.

<http://www.businessinsider.com/amazon-now-employs-a-whopping-542000-people-and-counting-2017-10>.

Kate Conger. "Airbnb releases first transparency report on government requests for user data." *TechCrunch*, September 2, 2016. Accessed December 17, 2018.

<https://techcrunch.com/2016/09/02/airbnb-first-transparency-report>.

Katie Roof. "Uber could be profitable if it wats to, says CEO." *TechCrunch*, February 14, 2018.

Accessed March 24, 2018. <https://techcrunch.com/2018/02/14/uber-could-be-profitable-if-it-wants-to-says-ceo>.

Katz, Lawrence, and Alan Krueger. *The Rise and Nature of Alternative Work Arrangements in the United States, 1995-2015*. Cambridge, MA: National Bureau of Economic Research, 2016.

doi:10.3386/w22667.

KAUFMANN, VINCENT. *RE-THINKING MOBILITY*. [Place of publication not identified]: Routledge, 2016.

Kerry Flynn. "Uber isn't having an easy time in France." *Mashable*, November 10, 2017.

Accessed January 21, 2018. <https://www.theguardian.com/technology/2017/nov/10/uber-loses-appeal-employment-rights-workers>.

Kirsten Korosec. "Uber Is Setting New Limits to Help Prevent Accidents From Drowsy Driving."

Fortune, February 12, 2018. Accessed May 2, 2018. <http://fortune.com/2018/02/12/uber-app-limits-driver-shifts-drowsy-driving/>.

Klint Finley. "Microsoft Cradles Linus Torvalds' (Other) Baby." *Wired*, January 30, 2012.

Accessed August 8, 2018. <https://www.wired.com/2013/01/microsoft-announces-support-for-linus-other-baby>.

Klint Finley. "Microsoft Says It's in Love with Linux. Now It's Finally Proving It." *Wired*, June 27,

2016. Accessed August 9, 2018. <https://www.wired.com/2016/06/microsofts-open-source-love-affair-reaches-new-heights>.

Klint Finley. "Microsoft's GitHub Deal is its Latest Shift From Windows." *Wired*, June 4, 2018.

Accessed August 7, 2018. <https://www.wired.com/story/microsofts-github-deal-is-its-latest-shift-from-windows>.

- Klint Finley. "Now You Can Use Linux Just Like Microsoft Does." *Wired*, March 10, 2016. Accessed August 11, 2018. <https://www.wired.com/2016/03/now-can-use-linux-just-like-microsoft>.
- Kyle Vanhemert. "A Better App for Airbnb Hosts Aims to Make Every Stay Homier." *Wired*, November 12, 2013. Accessed December 11, 2018. <https://www.wired.com/2013/11/how-a-better-app-for-airbnb-hosts-will-make-everyones-stay-better>.
- Landa, Manuel de. *A thousand years of nonlinear history*. Swerve editions. New York: Zone Books; London MIT [distributor], 1997 (2000 [printing]).
- Lawrence Mishel. "Uber and the labor market: Uber drivers' compensation, wages, and the scale of Uber and the gig economy." *Economic Policy Institute*, May 15, 2018. Accessed October 10, 2018. <https://www.epi.org/files/pdf/145552.pdf>.
- Lazzarato, M., and Joshua David Jordan. *The making of the indebted man: An essay on the neoliberal condition / Maurizio Lazzarato; translated by Joshua David Jordan*. Semiotext(e) intervention series 13. Los Angeles, Ca.: Semiotext(e), 2012.
- Lazzarato, M., and Joshua David Jordan. *Signs and machines: Capitalism and the production of subjectivity / Maurizio Lazzarato; translated by Joshua David Jordan*. Semiotext(e) foreign agents series. Los Angeles, CA: Semiotext(e), 2014.
- Lemke, Thomas. "New Materialisms: Foucault and the 'Government of Things'." *Theory, Culture & Society* 32, no. 4 (2014): 3–25. doi:10.1177/0263276413519340.
- London, Daniel Hart. "Outside the World of Tomorrow." *Journal of Urban History* 40, no. 6 (2014): 1011–27. doi:10.1177/0096144214536867.
- Lordon, Frédéric, and Gabriel Ash. *Willing slaves of capital: Spinoza and Marx on desire / Frédéric Lordon; translated by Gabriel Ash*. London, New York: Verso, 2014.
- Luke, Timothy W. "Ephemeralization as Environmentalism: Rereading R. Buckminster Fuller's Operating Manual for Spaceship Earth." *Organization & Environment* 23, no. 3 (2010): 354–62. doi:10.1177/1086026610381582.
- Lulu Garcia-Navarro. "How Underemployment is Affecting the Job Market." *NPR*, July 15, 2018. Accessed July 22, 2018. <https://www.npr.org/2018/07/15/629212924/the-call-in-underemployment>.

Marcus Wohlsen. "Airbnb Tries to Grow Up, Finally Agrees to Collect Taxes in Two Cities." *Wired*, April 1, 2014. Accessed December 28, 2017. <https://www.wired.com/2014/04/instead-of-fighting-cities-airbnb-tries-to-grow-up/>.

Marcus Wohlsen. "What the Sharing Economy Needs is a Little Less Democracy." *Wired*, August 28, 2013. Accessed May 1, 2018. <https://www.wired.com/2013/08/sharing-economy-localmotion/>.

Marcus Wohlsen. "Uber is Back for NYC Cabs as Taxi App Wars Escalate." *Wired*, December 13, 2012. Accessed April 14, 2018. <https://www.wired.com/2012/12/uber-flywheel-taxi-app-wars/>.

Marcus Wohlsen. "What Uber Will Do With All That Money From Google." *Wired*, January 3, 2012. Accessed January 5, 2018. <https://www.wired.com/2014/01/uber-travis-kalanick/>.

Margaret Rhodes. "Airbnb's Redesigned Tools Make it Easier to Be a Good Host." *Wired*, November 12, 2015. Accessed January 3, 2018. <https://www.wired.com/2015/11/airbnbs-redesigned-tools-make-it-easier-to-be-a-good-host>.

Mark Wilson. "The Airbnb Tool That's Changing UI Design." *FastCompany*, August 23, 2017. Accessed March 2, 2018. <https://www.fastcodesign.com/90137495/the-airbnb-tool-thats-changing-ui-design>.

Marx, Karl, Friedrich Engels, and Robert C. Tucker. *The Marx-Engels reader*. 2nd ed. New York: W.W. Norton, 1978.

Mason, Paul. *Postcapitalism: A guide to our future*. First American paperback edition. New York: Farrar, Straus & Giroux, 2017.

Matt Rosoff. "Airbnb is now worth \$30 billion." *Tech Insider*, August 6, 2016. Accessed May 3, 2018. <http://www.businessinsider.com/airbnb-raises-850-million-at-30-billion-valuation-2016-8>.

Meagan Day. "Under Neoliberalism, You Can Be Your Own Tyrannical Boss." *Jacobin*, January 22, 2018. Accessed March 28, 2018. <https://www.jacobinmag.com/2018/01/under-neoliberalism-you-can-be-your-own-tyrannical-boss>.

Megan Rose Dickey. "Uber is partially banned in Tel Aviv." *TechCrunch*, November 27, 2017. Accessed August 6, 2018. <https://techcrunch.com/2017/11/27/uber-is-partially-banned-in-tel-aviv>.

Melanie Arntz, Terry Gregory, and Ulrich Zierahn. "The Risk of Automation for Jobs in OECD: A Comparative Analysis." *OECD Social, Employment and Migration Working Papers*, no. 189 (2016): 1–34. <https://doi.org/10.1787/5jlz9h56dvq7-en>.

Melissa Eddy. "An Uber Service is Banned in Germany Again." *The New York Times*, March 18, 2017. Accessed June 3, 2018. <https://www.nytimes.com/2015/03/19/technology/germany-frankfurt-uber-ruling-taxi.html>.

Meredith Baer. "Attract more Guests: 10 Simple Tips From Home Staging Expert Meridith Baer." *Airbnb*, April 17, 2014. Accessed March 3, 2018., <https://blog.atairbnb.com/attract-guests-10-simple-tips-home-staging-expert-meridith-baer>.

Michael Bernstein. "Join Stanford researchers to form the largest crowdsourcing research project ever." *Medium*, February 3, 2015. Accessed May 25, 2018. <https://medium.com/@msbernst/join-stanfords-crowdsourced-crowdsourcing-research-team-e194f3c7c81d>.

Michael D. Shear, Nick Wingfield, and Cecilia Kang. "Trump Attacks Amazon, Saying It Does Not Pay Enough Taxes." *The New York Times*, March 29, 2018. Accessed May 5, 2018. <https://www.nytimes.com/2018/03/29/us/politics/trump-amazon-taxes.html>.

Michael Grabell. "Taken for a Ride: Temp Agencies and 'Raiteros' in Immigrant Chicago." *ProPublica*, April 29, 2013. Accessed June 12, 2018. <https://www.propublica.org/article/taken-for-a-ride-temp-agencies-and-raiteros-in-immigrant-chicago>.

Michael J. Coren. "Is Facebook a monopoly? Mark Zuckerberg doesn't have an answer." *Quartz*, April 10, 2018. Accessed May 4, 2018. <https://qz.com/1249296/is-facebook-a-monopoly-facebook-ceo-zuckerberg-didnt-have-an-answer-in-congressional>.

Mike Isaac. "Amazon's Jeff Bezos Explains Why He Bought the Washington Post." *The New York Times*, December 2, 2014. Accessed November 23, 2017.

<https://bits.blogs.nytimes.com/2014/12/02/amazons-bezos-explains-why-he-bought-the-washington-post/>.

Mike Isaac. "Uber Founder Travis Kalanick Resigns as C.E.O." *The New York Times*, June 21, 2017. Accessed June 2, 2018. <https://www.nytimes.com/2017/06/21/technology/uber-ceo-travis-kalanick.html>.

Mike Isaac. "How Uber Deceives the Authorities Worldwide." *The New York Times*, March 3, 2017. Accessed March 20, 2018. <https://www.nytimes.com/2017/03/03/technology/uber-greyball-program-evade-authorities.html>.

Mills, C. Wright. *The sociological imagination*. New York: Oxford University Press, 1999.

Miranda Katz. "Amazon's Turker Crowd Has Had Enough." *Wired*, August 23, 2017. Accessed July 2, 2018. <https://www.wired.com/story/amazons-turker-crowd-has-had-enough>.

UberPeople. "More and more fake surges." April 3, 2018. Accessed May 9, 2018., <https://uberpeople.net/threads/more-and-more-fake-surges.251640/>.

Reddit/mturk. "Mturk sucks now, its just a lottery and a game of speed!," 2017. Accessed May 23, 2018. https://www.reddit.com/r/mturk/comments/77008j/mturk_sucks_now_its_just_a_lottery_and_a_game_of/.

Mulcahy, Diane. *The gig economy: The complete guide to getting better work, taking more time off, and financing the life you want* / Diane Mulcahy. New York, NY: AMACOM, 2017.

Murphy, Douglas. *Last futures: Nature, technology and the end of architecture* / Douglas Murphy. London: Verso, 2016.

Nathan Heller. "Is the Gig Economy Working?" *The New Yorker*, May 15, 2017. Accessed January 29, 2018. <https://www.newyorker.com/magazine/2017/05/15/is-the-gig-economy-working>.

Neil Stewart, Christoph Ungemach, Adam J. L. Harris, Daniel M. Bartels, Ben R. Newell, Gabriele Paolacci, and Jesse Chandler. "The average laboratory samples a population of 7,300 Amazon Mechanical Turk workers." *Judgment and Decision Making* 10, no. 5 (2015): 479–91. Accessed May 16, 2018. <http://journal.sjdm.org/14/14725/jdm14725.pdf>.

Nelson, Daniel. *Frederick W Taylor and the rise of scientific management*. Madison: Wisconsin UP, 1980.

Airbnb. "New Study Reveals A Greener Way to Travel: Airbnb Community Shows Environmental Benefits of Home-sharing." July 31, 2014. Accessed January 2, 2018.

<https://www.airbnb.com/press/news/new-study-reveals-a-greener-way-to-travel-airbnb-community-shows-environmental-benefits-of-home-sharing>.

Reddit/mturk. "New to Mturk, Here's what you should know." 2014. Accessed May 21, 2018.

https://www.reddit.com/r/mturk/comments/1z4sma/new_to_mturk_heres_what_you_should_know/.

Reddit/mturk. "New turkers, please dont get mad if we make more money then you, Mturk is a competitive workplace." 2018. Accessed May 22, 2018.

https://www.reddit.com/r/mturk/comments/7wed97/new_turkers_please_dont_get_mad_if_we_make_more/.

Nick Srnicek. "We Need to Nationalise Google, Facebook and Amazon. Here's Why." *The Guardian*, August 30, 2017. Accessed August 2, 2018.

<https://www.theguardian.com/commentisfree/2017/aug/30/nationalise-google-facebook-amazon-data-monopoly-platform-public-interest>.

Nick Wingfield. "As Amazon Pushes Forward With Robots, Workers Find New Roles." *The New York Times*, September 10, 2017. Accessed May 4, 2018.

<https://www.nytimes.com/2017/09/10/technology/amazon-robots-workers.html>.

Noam Cohen. "The Libertarian Logic of Peter Thiel." *Wired*, December 27, 2017. Accessed March 1, 2018. <https://www.wired.com/story/the-libertarian-logic-of-peter-thiel>.

Noam Scheiber. "How Uber Uses Psychological Tricks to Push Its Drivers' Buttons." *The New York Times*, April 2, 2017. Accessed June 3, 2018.

<https://www.nytimes.com/interactive/2017/04/02/technology/uber-drivers-psychological-tricks.html?mcubz=1>.

NBC News. "Not Uber, Not TaskRabbit: Inside the Real Gig Economy." August 30, 2017.

Accessed June 25, 2018. <https://www.nbcnews.com/video/not-uber-not-taskrabbit-inside-the-real-gig-economy-1035985475951>.

Nye, David E. *Electrifying America: Social meanings of a new technology, 1880-1940*. Cambridge, Mass.: The MIT Press, 1992-.

NYU Stern. "Professor Arun Sundararajan and Scott Galloway – Employment in the Sharing Economy." October 13, 2016. Accessed May 12, 2018. <https://www.youtube.com/watch?v=ciqugtorbQA>.

Olivia Solon. "The rise of 'pseudo-AI': how tech firms quietly use humans to do bots' work." *The Guardian*, July 6, 2018,. Accessed July 22, 2018. <https://www.theguardian.com/technology/2018/jul/06/artificial-intelligence-ai-humans-bots-tech-companies>.

UberPeople. "One way or another, it never works (talking)." February 16, 2018. Accessed March 26, 2018. <https://uberpeople.net/threads/one-way-or-another-it-never-works-talking.240979>.

Oren Dori. "Uber to Launch Ridesharing Service for Israeli Night-Owls." *Haaretz*, September 29, 2016. Accessed February 8, 2018. <https://www.haaretz.com/israel-news/business/.premium-1.744965>.

Airbnbcitizen. "Organizing in Cities: The Airbnb Host Movement." November 5, 2015. Accessed January 19, 2018. <https://www.airbnbcitizen.com/organizing-in-100-cities-the-airbnb-host-movement>.

Panagiotis G. Ipeirotis. "Demographics of Mechanical Turk: Now Live!" *Behind the Enemy Lines*, January 29, 2018. Accessed May 15, 2018. <http://www.behind-the-enemy-lines.com/>.

Patrick Sisson. "9 facts about Amazon's unprecedented warehouse empire." *Curbed*, November 21, 2017. Accessed May 6, 2018. <https://www.curbed.com/2017/11/21/16686150/amazons-warehouse-fulfillment-black-friday>.

Paul Solman. "How Uber drivers game the app and force surge pricing." *PBS*, August 4, 2017. Accessed March 26, 2018. <https://www.pbs.org/newshour/economy/uber-drivers-game-app-force-surge-pricing>.

Phil LeBeau. "General Motors plans to take on ridesharing services with self-driving cars by 2019." *CNBC*, November 30, 2017. Accessed December 3, 2017.

<https://www.cnn.com/2017/11/30/gm-to-take-on-ridesharing-services-with-self-driving-cars-by-2019.html>.

Philip Oltermann. "Berlin ban on Airbnb short-term rentals upheld by city court." *The Guardian*, June 8, 2016. Accessed January 11, 2018.

<https://www.theguardian.com/technology/2016/jun/08/berlin-ban-airbnb-short-term-rentals-upheld-city-court>.

Piketty, Thomas, and Arthur Goldhammer. *Capital in the twenty-first century*. Cambridge Massachusetts: The Belknap Press of Harvard University Press, 2014.

The New York Times. "President Deplores Fear of Automation." March 17, 1955. Accessed June 24, 2018.

Rabinbach, Anson. *The human motor: Energy, fatigue, and the rise of modernity / Anson Rabinbach*. New York: Basic Books, 1990.

Rebecca McCray. "Airbnb Releases Host Data, but Activists Say It Doesn't Add Up." *TakePart*, December 3, 2015. <http://www.takepart.com/article/2015/12/03/airbnb>.

Ribbers, Jasper, and Husefa Kapadia. *Get paid for your pad: How to maximize profit from your Airbnb listing*. Revised & expanded. San Francisco, California: Lifestyle Entrepreneurs Press, 2016.

Rick Wartzman. "The First Time America Freaked Out Over Automation." *Politico*, May 30, 2017. Accessed June 25, 2018. <https://www.politico.com/magazine/story/2017/05/30/rick-wartzman-book-excerpt-automation-donald-trump-215207>.

Rifkin, Jeremy. *The zero marginal cost society: The internet of things, the collaborative commons, and the eclipse of capitalism*. New York: Palgrave Macmillan, 2014.

Rob Davies. "Uber loses appeal in UK employment rights case." *The Guardian*, November 10, 2017. Accessed February 2, 2018.

<https://www.theguardian.com/technology/2017/nov/10/uber-loses-appeal-employment-rights-workers>.

Robert D. Atkinson and John Wu. "False Alarmism: Technological Disruption and the U.S. Labor Market, 1850–2015." *Information Technology & Innovation Foundation*, 2017.

<https://itif.org/publications/2017/05/08/false-alarmism-technological-disruption-and-us-labor-market-1850-2015>.

Romain Dillet. "BlaBlaCar Acquires its Biggest Competitor Carpooling.com To Dominate European Market." *TechCrunch*, April 15, 2015. Accessed June 4, 2018.

<https://techcrunch.com/2015/04/15/blablacar-acquires-its-biggest-competitor-carpooling-com-to-dominate-european-market/>.

Rosenblat, Alex, and Luke Stark. "Information Asymmetries and Control in Dynamic Work." *International Journal of Communication* 10 (2015): 3758–84. doi:10.2139/ssrn.2686227.

Rossman, John, Ryan Masters, Clifford Cancelosi, Randy Miller, Karl Weber, and Terry Jones. *The Amazon way: 14 leadership principles behind the world's most disruptive company*. Revised second edition. [Clyde Hill, Washington]: Clyde Hill Publishing, 2016.

Roy, Ananya. "Urban Informality: Toward an Epistemology of Planning." *Journal of the American Planning Association* 71, no. 2 (2005): 147–58. doi:10.1080/01944360508976689.

Rupert Neate. "The age of Amazon: a closeup examination of Bezos's behemoth." *The Guardian*, April 24, 2018. Accessed May 13, 2018.

<https://www.theguardian.com/technology/2018/apr/24/the-age-of-amazon-a-closeup-examination-of-bezoss-behemoth>.

Rydell, Robert W. *World of fairs: The century-of-progress expositions / Robert W. Rydell*. Chicago, Ill., London: University of Chicago Press, 1993.

Samuel A. Chambers. "The Washington Post 'fact checks' Sanders on Wealth Inequality: This is What Ideology Looks Like." *The Contemporary Condition*, December 21, 2017. Accessed January 12, 2018. <http://contemporarycondition.blogspot.com/2017/12/samuel-chambers-washington-post-fact.html>.

Sarah McBride. "Amazon profit crushes estimates as cloud-service revenues soars." *Reuters*, April 28, 2016. May 8, 2018.

Sarah Perez. "Airbnb revamps its app with new tools for hosts, improved messaging." *TechCrunch*, September 27, 2016. Accessed January 4, 2018.

<https://techcrunch.com/2016/09/27/airbnb-revamps-its-app-with-new-tools-for-hosts-improved-messaging/>.

- Schor, Juliet B. "Does the sharing economy increase inequality within the eighty percent? Findings from a qualitative study of platform providers." *Cambridge Journal of Regions, Economy and Society* 10, no. 2 (2017): 263–79. doi:10.1093/cjres/rsw047.
- Schwab, Klaus. *The fourth industrial revolution*. Geneva, Switzerland: World Economic Forum, 2016.
- Scott Kirsner. "My life as a micro-laborer: Exploring Mechanical Turk, Skyword, TaskRabbit, GrabCAD and more." *Boston Globe*, April 1, 2012. Accessed June 27, 2018. http://archive.boston.com/business/technology/innoeco/2012/04/my_life_as_a_micro-laborer_exp.html.
- Sean Gallagher. "Cory Doctorow's Walkaway: Hardware Hackers Face the Climate Apocalypse." *Ars Technica*, April 25, 2017. Accessed August 4, 2018. <https://arstechnica.com/gaming/2017/04/cory-doctorows-walkaway-hardware-hackers-face-the-climate-apocalypse/>.
- Sean O'Kane. "Nvidia adds Uber and VW to its roster of self-driving tech customers." *The Verge*, January 8, 2018. Accessed April 3, 2018. <https://www.theverge.com/2018/1/8/16860092/nvidia-xavier-ai-chip-uber-vw-self-driving-cars-ces-2018>.
- Sennett, Richard. *The corrosion of character: The personal consequences of work in the new capitalism*. New York, London: W. W. Norton, 1999.
- Sennett, Richard. *The culture of the new capitalism*. Castle lectures series. New Haven (Conn.), London: Yale University Press, 2007, ©2006.
- Sheelah Kolhatkar. "At Uber, A New C.E.O. Shifts Gears." *The New Yorker*, April 9, 2018. Accessed April 26, 2018. <https://www.newyorker.com/magazine/2018/04/09/at-uber-a-new-ceo-shifts-gears>.
- Shona Ghosh. "Undercover author finds Amazon warehouse workers in UK 'peed in bottles' over fears of being punished for taking a break." *Business Insider*, April 16, 2018. Accessed May 20, 2018. <http://www.businessinsider.com/amazon-warehouse-workers-have-to-pee-into-bottles-2018-4>.

Shoshana Zuboff. "Creating Value in the Age of Distributed Capitalism." *McKinsey Quarterly*, no. 4 (2010): 45–55. Accessed April 2, 2018. <https://www.hbs.edu/faculty/Pages/item.aspx?num=44035>.

Six Silberman. "Design notes for a future crowd work market." *Medium*, February 13, 2015. Accessed May 17, 2018. <https://medium.com/@silberman/design-notes-for-a-future-crowd-work-market-2d7557105805>.

Social Contract CR. "Daemo's Crowd Has Had Enough." *Medium*, August 29, 2017. Accessed May 28, 2018. <https://medium.com/@SocialContractCR/daemos-crowd-has-had-enough-5b62c1fceb30>.

Reuters. "South Korea court says Uber violated transport law, latest setback for U.S. firm." April 25, 2017. Accessed April 4, 2018. <https://www.reuters.com/article/us-uber-tech-southkorea/south-korea-court-says-uber-violated-transport-law-latest-setback-for-u-s-firm-idUSKBN17S09F>.

Srnicek, Nick, and Laurent de Sutter. *Platform capitalism*. Theory redux. Cambridge, UK, Malden, MA: Polity, 2017.

Srnicek, Nick, and Alex Williams. *Inventing the future: Postcapitalism and a world without work* / Nick Srnicek and Alex Williams. Revised and updated edition. London, England: Verso, 2016.

Standage, Tom. *The Turk: The life and times of the famous eighteenth-century chess-playing machine*. Berkley trade pbk. ed. New York: Berkley Books, 2003.

Standing, Guy. *The precariat: The new dangerous class* / Guy Standing. [Revised] Bloomsbury Revelations edition. Bloomsbury Revelations. London: Bloomsbury Academic, 2016.

Steve LeBlanc. "Studies are increasingly clear: Uber, Lyft congest cities." *Chicago Tribune*, March 1, 2018. Accessed April 26, 2018. <http://www.chicagotribune.com/business/sns-bc-us--ride-hailing-congestion-20180225-story.html>.

Steven Hill. "How the Berlin government could rein in Airbnb and protect local housing." *Salon*, June 30, 2017. Accessed February 24, 2018. https://www.salon.com/2017/06/30/how-the-berlin-government-could-rein-in-airbnb-and-protect-local-housing_partner/.

Steward Brand. "Scream of Consciousness." *Wired*, January 1, 1993. Accessed February 9, 2018. <https://www.wired.com/1993/01/paglia/>.

Stone, Brad. *The everything store: Jeff Bezos and the age of Amazon / Brad Stone*. New York: Little Brown and Co, 2013.

Sundaram, Ravi. *Pirate modernity: Delhi's media urbanism*. Routledge studies in Asia's transformations. London: Routledge, 2011.

Sundararajan, Arun. *The sharing economy: The end of employment and the rise of crowd-based capitalism / Arun Sundararajan*. Cambridge, Massachusetts: The MIT Press, 2016.

Susan Fowler. "'What Have We Done?': Silicon Valley Engineers Fear They've Created A Monster." *Vanity Fair*, August 9, 2018. Accessed August 10, 2018. <https://www.vanityfair.com/news/2018/08/silicon-valley-engineers-fear-they-created-a-monster>.

Tarleton Gillespie. "Is 'Platform' the Right Metaphor for the Technology Companies that Dominate Digital Media?" *NiemanLab*, August 25, 2017. Accessed May 14, 2018., <http://www.niemanlab.org/2017/08/is-platform-the-right-metaphor-for-the-technology-companies-that-dominate-digital-media>.

Reddit/mturk. "Thank You, MTurk." 2018. Accessed May 23, 2018. https://www.reddit.com/r/mturk/comments/7zq7sq/thank_you_mturk.

Reddit/Github. "This is how github will looks like a year from now [REPOST]." 2018. Accessed August 4, 2018. https://www.reddit.com/r/github/comments/8ooatk/this_is_how_github_will_looks_like_a_year_from.

Urry, John. *Mobilities*. Cambridge: Polity, 2007.

Utpal Dholakia. "Why Do Customers Hate Uber's Surge Pricing?" *Psychology Today*, December 8, 2015. Accessed March 9, 2018. <https://www.psychologytoday.com/us/blog/the-science-behind-behavior/201512/why-do-consumers-hate-uber-s-surge-pricing>.

Utpal Dholakia. "My Experience as an Amazon Mechanical Turk (MTurk) Worker." *Psychology Today*, July 21, 2015. Accessed May 14, 2018. <https://www.psychologytoday.com/blog/the-science-behind-behavior/201507/my-experience-amazon-mechanical-turk-mturk-worker>.

Utpal Dholokia. "Just How Many Amazon MTurk Survey-Takers Are There?" *Psychology Today*, January 30, 2017. Accessed May 13, 2018. <https://www.psychologytoday.com/blog/the-science-behind-behavior/201701/just-how-many-amazon-mturk-survey-takers-are-there>.

Venky Harinarayan. Hybrid machine/human computing arrangement. US7801756B1.

Virilio, Paul. *Open sky*. Radical thinkers 35. London: Verso, 1997 (2008 printing).

Virilio, Paul. *Speed and politics*. Semiotext(e) foreign agents series. Los Angeles: Semiotext(e), 2006.

Virilio, Paul. *Negative horizon: An essay in dromoscopy / Paul Virilio; translated by Michael Degener*. London: Continuum, 2008.

Virno, Paolo. *A grammar of the multitude: For an analysis of contemporary forms of life / Paolo Virno; foreword by Sylvère Lotringer; translated from the Italian: Isabella Bertolotti, James Cascaito, Andrea Casson*. Semiotexte(e) foreign agents series. Los Angeles, Calif.: Semiotext(e), 2004.

Wark, McKenzie. *General intellects [electronic resource]: Twenty-one thinkers for the twenty-first century / McKenzie Wark*. London, New York: Verso Books, 2017.

UberPeople. "What are some of your favorite Uber Speak twisted play on words?," October 3, 2014. Accessed May 22, 2018. <https://uberpeople.net/threads/what-are-some-of-your-favorite-uber-speak-twisted-play-on-words.4533/>.

Zach Schiller. "More Ohio Amazon workers relying on food aid." *Policy Matters Ohio*, January 5, 2018. Accessed May 27, 2018. <https://www.policymattersohio.org/press-room/2018/01/05/more-ohio-amazon-workers-relying-on-food-aid>.

Zoe Rosenberg. "Airbnb Leads to Median Rent Increase, Promotes Gentrification: Study." *Curbed*, January 30, 2018. Accessed July 3, 2018. <https://ny.curbed.com/2018/1/30/16950424/airbnb-gentrification-nyc-median-rent-study>.