

October 2016

Regional Diversity in Autonomy and Work: A Case Study from Uber and Lyft Drivers

Alex Rosenblat (alex@datasociety.net)

Tim Hwang (tim@datasociety.net)

Edited by Patrick Davison

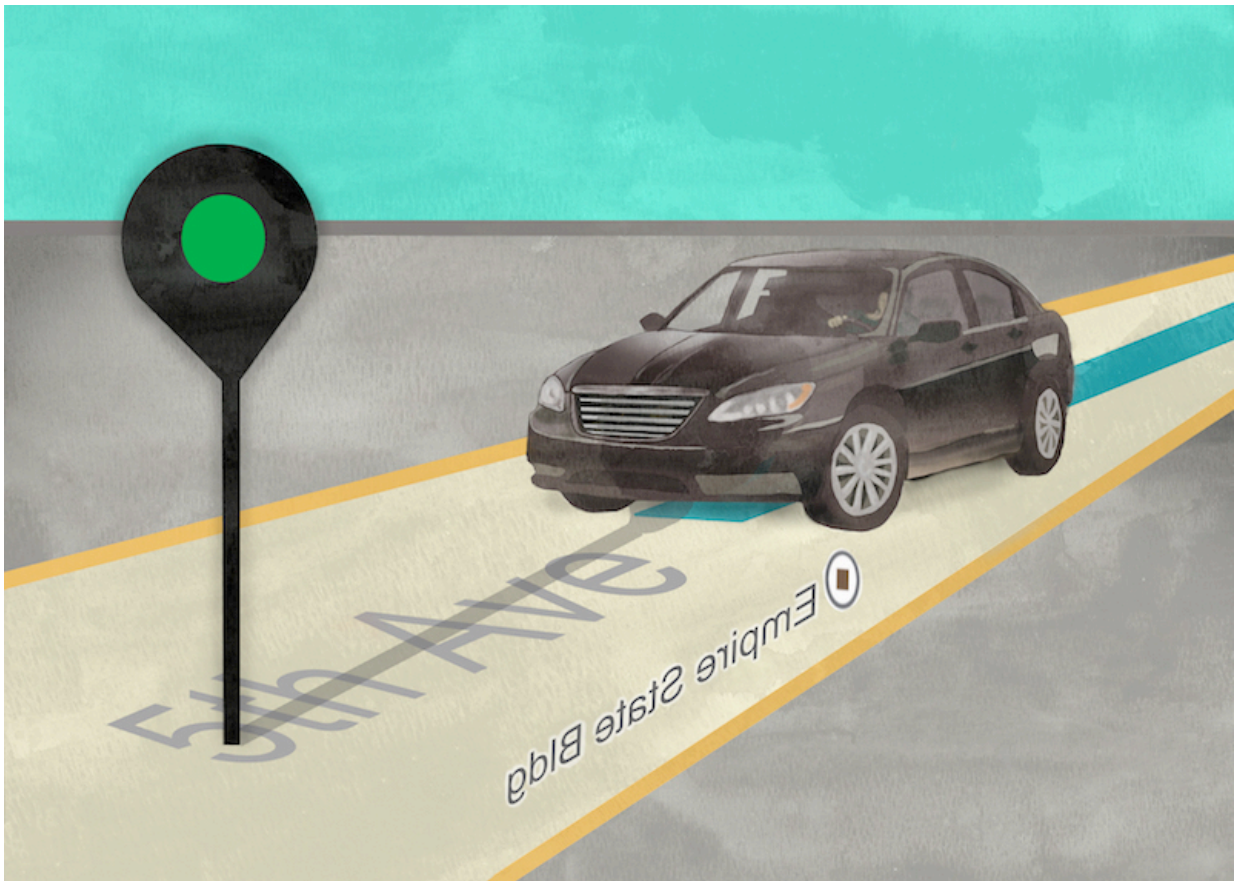


Illustration by Alexandra Mateescu

We are grateful for the insights and assistance of danah boyd, Seda Guerses, Sorelle Friedler, Surya Mattu, Karen Levy, Tom Igoe, Nick Grossman, Yan Shvartzshnaider, Alexandra Mateescu, and Angie Waller.

This project was generously supported by a grant from the John D. and Catherine T. MacArthur Foundation.

Introduction

As the sophistication of machine intelligence has increased in recent years, those concerned with technology's effect on employment and labor have begun to consider what automation might mean for the future of work. This discourse has been significantly shaped by a number of studies (Frey & Osborne; Open Society Foundations) which, drawing on the techniques of economics, attempt to quantitatively predict the number of jobs at risk of the "destruction effect" of automation (Frey and Osborne, 14). Early calculations (2013) proposed that as many as 47% of U.S. jobs were "susceptible" to automation (ibid., 1). Subsequent studies have attempted to refine this finding by evaluating individual tasks rather than whole occupations; such studies presume that automation is likely to create hybrid conditions of work, and therefore predict much lower numbers of at-risk jobs—9% on average, across 21 countries (Arntz, Gregory, & Zierahn, 4). However, while the move to consider hybrid employment seems to better reflect the reality of automated labor, both of these approaches still largely treat occupations as abstractions – defined by the US Department of Labor's O*NET database – without recourse to the varied regional contexts in which work takes place. These frames for thinking about the future of work continually flatten narratives around labor and technology developments into blunt forecasts. This paper therefore responds to the need for "more nuanced lines of debate" when considering the relationship between automation and the future of work by adding a qualitative dimension to these statistical predictions (Open Society Foundations, 5).

It is not necessary to wait for the arrival of a future technology to begin to examine how these nuances might inform policymaking on automation and machine intelligence. New ridehail platform companies – like Uber and Lyft – already combine algorithmic systems with human workers, and consequently provide a rich case study with which to understand how work might evolve when automation modifies, rather than replaces, existing occupations. (While the introduction of narratives around algorithms risks channeling their role in labor and employment towards a focus on automation and transparency regarding the "algorithmic black box," we would argue, as other scholars, like Karen Levy (160), have, that worker experiences in algorithmic systems provides a lens into that box). Preliminary observations of these workers and their changing working conditions,

as inflected by fieldwork, reveals the significant role of worker motivations and regional political environments on the social and economic outcomes of automation. These findings support a perspective that technology's capacity for social change is always combined with non-technological structures of power—legislation, economics, and cultural norms (Open Society Foundations, 4).

This paper is aimed particularly at unflattering narratives around the universality of employment that emerges through software platforms, and as a tool to engage with developing public debate on technology and labor. The authors draw on preliminary fieldwork observations, conducted by Rosenblat, in the U.S. and Canada to provide a sampling of the variations in worker motivations, practices, and background conditions that are already having large impacts on Uber, Lyft, and similar ridehail companies across diverse regions.¹ Part I will give an introduction to Uber and Lyft, the two most prominent ridehail companies in the U.S. and Canada, and discuss the assumptions of universality that have often surrounded media narratives around these platforms. Part II will provide an account of the variance in worker motivations between and within regions, and its impact on the political debates around automation. Part III will examine how variance in background context and resulting driver practices impacts political conflicts. Part IV will provide a case study, examining how questions around fingerprinting in driver practices result from regional variations.

The objective of this work is to advance the broader discourse around automation and work by encouraging a closer look at already existing examples and their regional adaptations. How do we think more precisely about the future of work, where conditions of inequity can result from far more than disappearing jobs? What is missing from our understanding of the gig economy, and how can we use fieldwork to help us get to the right frames?

1. The authors do not provide a detailed comparative overview of all legal, regulatory, and licensing regimes that affect company practices at a regional level, which is beyond the scope of this piece.

Part I

Uber, Lyft, and the Assumption of Universality

Uber, founded in 2009, and Lyft, founded in 2012, primarily structure employment through software. Drivers report for work by signing into a smartphone app, rides and fares are distributed based on a proprietary software system, and automatically-compiled ratings are used as a primary measure of employability. This automation has allowed Uber to manage workers across 68 countries and 462 cities, comprising a distributed workforce of more than 450,000 drivers (as of April 2016, according to Uber) who use the Uber app each month (Uber Newsroom, “Growing and growing up”). Lyft announced in March 2015 that they have 100,000 active drivers, and the company lists 210 U.S. cities in which it operates as of June 2016 (Lyft.com). For both Uber and Lyft, the management labor of dispatching drivers and directing their routes is largely done autonomously through software, while the actual driving is done by a network of human drivers.

Both companies face major political challenges in the arenas of labor law, and municipal governance in the U.S. (and Canada, in the case of Uber). Uber’s practice of classifying drivers as independent contractors has been challenged by major class-action lawsuits that have garnered significant public attention (Somerville). Lyft has faced similar employee misclassification class-action lawsuits, although these have received less attention (Mullin). In some locations, the operations of these companies have been further complicated (or blocked entirely) through regulations on drivers. One particular case, mandatory fingerprinting, is discussed in greater detail in section 4, below.

These platforms, and the legal challenges they accrue have become emblems for larger shifts in the domain of work. The “sharing economy,” “on-demand economy,” “flexible labor”—all are popular buzzwords in the discourse on emerging business practices (The Economist; Sundararajan). Therefore, the way Uber and Lyft (and their detractors and advocates) resolve recent and ongoing disputes is likely to establish important precedents for the future regulation of employment practices. And while many have observed the difficulties Uber (and to a lesser-degree, Lyft) has faced as it wrestles with the specifics of local business regulations across the country and globe (Somerville & Levine; Reuters; NCC Staff), there have been few efforts to

examine the diversity of relationships between the company and individual drivers.

This diversity of relationships may be masked in part by the marketing of these platforms as part of a broader “sharing economy” narrative. The “sharing economy” is a popular framework for describing a range of companies — each with distinct business practices — that leverage digital technologies to create efficient access to under-utilized goods or services (Lobel).

While the intermediary platform uses a combination of mobile and web-based technologies that appear to have similar characteristics, such as the ability to rapidly organize and mediate a ride or accommodations between a two-sided marketplace with the touch of a button, the actual businesses span across diverse industries and services. The sharing economy framework is strengthened by a particular uncomplicated image of who is doing the “sharing” (read: working). The workers of the sharing economy are described as flexible members of the workforce who choose to leverage extra value out of their existing resources, or become “entrepreneurs” in the case of platforms like Uber. This is an image that may be accurate for a number of those that provide the labor for these platforms, but there are others that do this work for remuneration that is less than a living wage, and others still who work as a hobby rather than as a primary source of income.

Another major factor in the perceived universality of sharing economy platforms is product design: for example, Uber and Lyft’s apps are designed to provide the same interface and service, with some minor modifications (like the number of tiers of services, or modified rules in different cities), regardless of where the rider is requesting a ride. Although companies do experiment with different features and policies in different markets, the main functions of the app, such as the apparent ability for the passenger to track the driver’s location once the driver accepts the fare, are universal. In a competitive ridehail market, different companies, like Uber and Lyft, may continuously replicate the other’s innovations in product design and policy, contributing to a sense of overall “sameness” (Kokalitcheva), although drivers experience distinct workplace cultures on each platform.² These instruments of designed conformity should not mislead us as to the diversity of the politics and labor pools that surround these platforms in practice.

2. See <http://www.lyftvsuber.com/> for an ongoing comparison between the services.

Part II

Variance in Driver Motivation

Popular coverage of sharing economy services in general, and ridehail platforms in particular, have tended to characterize workers as a relatively equivalent mass. This tendency doesn't only exist in popular discourse; many economic studies which attempt to predict the future impact of automation on labor provide only limited modeling of the granularity of a diverse, shifting workforce.³ However, preliminary qualitative research on Uber and Lyft drivers reveals a striking range of motivations and conditions among drivers—hobbyists, part-time earners, full-time earners, drivers in transition, and other profiles. Some drivers rely on such jobs to provide the primary income for their families, while others drive to alleviate the boredom of retirement.

These differences can have an impact on policy and regulation decisions, as some of the traditional means of organizing labor – unions, for instance – may not apply with the same effectiveness. For example, hobbyist drivers are less likely to be invested in labor organizing efforts on behalf of their cohort than those with significant social and financial investments in their work (Rosenblat, “Who are the drivers?”). To that end, the diversity of driver motivations may constitute a significant hurdle to worker solidarity and the type of political advocacy that follows from such.

So what does this workforce look like? The following cases explore five notable motivations for work discovered during preliminary fieldwork.⁴ These cases are by no means inclusive of all the varied motivations drivers have at work within or across diverse regions. We present them here primarily to illustrate the level of heterogeneity among workers.

3. See e.g., Frey and Osborne; Arntz, Gregory, & Zierahn; Chui, Manyika, Miremadi; Pajarinen and Rouvinen; Brzeski and Burk.

4. These cases are based on a combination of participant-observation and semi-structured interviews with around fifty drivers, most of whom drive at a cheaper tier of service – uberX or regular Lyft (not uberPool or Lyft Line) – in the several regions within the year 2016 in the U.S. and Canada. In the U.S., the fieldwork cites we draw upon for this paper are in the following areas: Charleston, SC, Austin, Dallas/Ft. Worth, TX, Orlando and Kissimmee, FL, NYC, NY, Palo Alto, CA, and New York/New Jersey. In Canada, our examination covered Uber drivers (there's no Lyft in Canada) in Montreal, QC, and Toronto, ON. The interviewees were ridehail drivers who primarily work, or have been recruited to work, for both Uber and Lyft, although some work for only one of the companies. When observations relate specifically to Uber, or Lyft, or to a higher tier of service than uberX or Lyft, this difference will be specified.

Driver Motivation – Hobbyists

The spectrum of Uber and Lyft drivers feature a salient divide between drivers who rely on their income as a primary source of support to sustain their families, and those who do it part-time, such as for extra cash, but do not rely on it as they would a full-time job. There are retirees who drive either because they have spare time or they want to keep busy and they enjoy meeting new people, or because they also need to subsidize their retirement incomes. Carol, a middle-aged woman with a grown son and daughter, started driving for Uber in Charleston because she had a brand-new SUV sitting in the driveway of her suburban home, and her son made fun of her because she never goes anywhere with it. Carol fits the profile of other hobbyist drivers who already have assets built up – a house, savings, an underused car – who aren't necessarily motivated to work for financial reasons, and are often motivated by social reasons.

In Toronto, Farhad, a thrice-married and divorced Iranian-Canadian man, drives for Uber in the evenings to interact with others. He has no one at home to take his meals with, although he indicates that two of his ex-wives keep in touch with occasional text messages, wishing him well on the holidays. Farhad is a professional accountant by day. He doesn't want to tell any of his colleagues or friends that he drives for Uber, even if it's for social reasons, and he doesn't keep an Uber placard in his window. He indicates that others might think business is bad in his accounting practice if they learn he's driving on the side.

Driver Motivation—Career Transition

Many of the drivers interviewed in the Orlando area had recently moved from New York or New Jersey. They generally described themselves as being in career transition, having moved for a higher quality of life in a less expensive place. One driver, John, drove for both Uber and Lyft to subsidize his income while he transitioned to a new career as a pilot for a major airline.

Drivers in Dallas, Texas commonly describe that there were jobs available for anyone who wanted one, and some emphasized a booming tech industry. The lens of opportunity impact driver perceptions of Uber's role in their own transitions: Jordan, who drives primarily for Uber in Dallas, describes how his landscaping business, where he once employed upwards of 30 people, was having a slow period. Driving was a way to pay the bills in the meantime, and to support two daughters from his

first marriage. He saw driving as another outgrowth of the industriousness with which he started and ran a landscaping business.

In Toronto, Raj drives for Uber Select, but he used to work as a taxi driver. He also owns and runs his own for-hire car business. He is studying to become a mortgage broker, and he keeps his books in the car with him to read between passengers. He describes how, even though he has been working professionally as a driver for 9 years, he views it as a short-term career, and he is actively educating himself to transition into another professional field. Uber has been a boon to him, but he also worries that it is flooding the market with new drivers who are making it harder for professional drivers to earn a living, which partly spurs him to seek additional types of work training.

Driver Motivation—Autonomy, Flexibility, and “Be Your Own Boss”

Beyond the mere terms of financial compensation, some drivers are motivated to work because of the flexibility and autonomy promised by the service. In Dallas, Texas, Tanisha J., a young woman in her 20s, had been working at a call center and decided to drive for Uber to get away from the stifling, heavily managed environment of call center work; this sentiment was echoed by another interview subject in the area, who also preferred driving to working at a call center. She enjoyed the opportunity to “be her own boss,” an Uber slogan she used to articulate her own experience.

Maria, a newer Lyft driver in New Jersey, takes care of her two small children at home, and drives because she can flexibly set her own schedule – which she cannot get at another job. Both Tanisha and Maria emphasize their autonomy and flexibility as benefits of the job. Hobbyist drivers also emphasize this flexibility, even though they are motivated to drive for different reasons. Often these benefits are fused with other non-financial motivations, such as the social nature of the job.

Driver Motivation—Supporting Other Small Businesses

One driver, Sam, used his work for Lyft to boost his other business in ticket sales for local tourist attractions and events—getting leads from his passengers. He originally moved to the Orlando area to be a college professor, and take a break from his graduate studies in computer science. He preferred to work for Lyft more

than Uber because of his perception of it as a more social company. Lyft would occasionally host get-togethers for local drivers, and Lyft passengers would sometimes invite him out to join their plans, though he rarely accepted such offers.

Another driver in Orlando, Jake who made note of the downturn and housing bust to explain why he was driving more instead of practicing his profession as a realtor, observed that unexpectedly, his driving work was introducing him to neighborhoods that he could introduce to his clientele. He also enjoyed the social reprieve of ridehail work, and prided himself on his people skills.

Driver Motivation—Learning a New Language

In the Orlando/Kissimmee area, there were, notably, a number of drivers who spoke little English and who primarily spoke Spanish. Although they often had Spanish-speaking passengers, a lack of proficiency in English did impact their work. For instance, they were reticent to call passengers to help locate them at tricky pick up spots. This was significant, as driver experiences indicate that figuring out the exact location of a passenger is perceived as one of the challenges drivers encounter. Passengers may misplace their location pin, and pick-up areas may be confusing or heavily trafficked.

On the one hand, use of the Uber app to mediate driving transactions can reduce friction for drivers without English skills—limiting their interactions to clear interface elements. On the other hand, there are a number of supplemental interactions which driving can require, outside the bounds of the app. Moreover, it should be noted that one of the primary sources of education for Uber and Lyft drivers are online forums, the most popular of which are overwhelmingly conducted in English. There are, however, some forums with members who discuss their US- and Canada-based experiences in other languages, such as (but not limited to) French and Spanish, particularly in regions that have a different or multiple primary languages, such as French-dominant Quebec.

Ridehail work may represent a significant avenue of high employment opportunities for those without dominant English-language skills precisely because so much of the transaction is automated, unlike in other service industries. Theoretically, a newly arrived, non-English speaking immigrant could be at work in a week, if they acquire a valid driver’s license, insurance, and have passed other necessary requirements of the ridehail company they work for and the local city requirements,

like a background check. Xiao, a Lyft driver in Palo Alto, CA, spoke no English, only Mandarin, and completed a trip for the researcher without any problems, with Mandarin instructions coming from the app.

In this context, Rosenblat spoke with a driver, Juan, who worked in New Jersey and New York, and had moved there from the Dominican Republic 6 years earlier. Juan enjoyed the social element of driver-passenger interactions because it was a way to improve his English. In Montreal, a Moroccan Uber driver, Youssef, whose native language was French, explained that driving for Uber was helping him practice his English, which he said he otherwise had no occasion to use. Several other Montreal drivers said that Uber was a primary way for them to practice their English, in part because the passenger base is often comprised of tourists. One driver described how many locals in Montreal speak both English and French, but a common cultural practice is to switch to the language in which the interlocutor is most fluent; as a native French speaker, he primarily uses French in his daily life.

Diverse Motivations Impact the Political Debate

What these individual findings reveal is that it is difficult to assess the conditions of work for Uber and/or Lyft independent from other types of labor. In three of the categories above, the decision to work for Uber was integrated with the needs and conditions of other job opportunities. In the case of the Sam in Orlando, Lyft and Uber provided a platform for interactions on which his other business relied. Similarly, driving offered a type of secondary value to those drivers interested in learning new (and economically valuable) language skills. Further, these findings complicate a narrative whereby automation of an occupation removes it from the labor pool. In many instances, Uber/Lyft drivers were only able to perform driving work because of the re-organization of labor produced by hybrid automation. This effect, of automation allowing for new access to work, will be revisited in section 4.

One important complication to note is how the diverse conditions of driver motivations might impact traditional means of negotiating power between workers and employers. While the political impact of Uber on labor rights in the U.S. is significant, not all drivers are, or are equally, invested in labor concerns. There are differences in motivation for driving; there are differences in levels of work drivers are willing to do; and there are differences in skills and savviness amongst drivers. Yet, the majority of attention dedicated to driver

vs. Uber issues focuses on labor rights. This focus belies the fact that the minority of the drivers do a majority of the work, although they stand to be most impacted by labor rights developments (Zatz). What remains to be seen is how this variety will impact drivers' ability to organize politically, and whether that will have long term implications for the maintenance of equitable working conditions in similarly automated jobs.

Part III

Variance in Background Conditions

It is easy to think of “driving for Uber” or “driving for Lyft” as one occupation, performed to different degrees by hundreds of thousands of people. But as the previous section indicates, what driving for Uber means, in practice, can vary significantly between individual drivers. A similar variation can take place across regions with different background conditions. That is, driving for Uber in Austin, Texas is not the same job as driving for Uber in New York City, and both are different jobs than driving in Montreal. This section examines a number of significant regional differences that have limited or altered the way in which automation has been allowed to modify the conditions of working for Uber and/or Lyft. Like driver motivations, these regional differences can have impacts on equity and political organization, but they also complicate our ability to make predictions about the automation of labor. Regional differences illustrate how the possibility of automation runs afoul of the realities of regulation and cultural norms.

Background Condition— Existing Political Infrastructure

In the context of a high profile class-action lawsuit in California (uberlawsuit.com), and similar employment misclassification suits elsewhere (Bhuiyan), Uber has had to consider the numerous implications of its worker classification. Though the outcomes of these lawsuits are yet to be fully resolved, Uber has begun to work with the Freelancer's Union in New York to address the provisions of benefits for its drivers. Uber, like many Silicon Valley companies, strongly supports the idea of portable benefits, where the provision of healthcare and retirement saving would be decoupled from specific employers (McCabe). The adoption of portable benefits

could help reduce the friction of contested labor classifications, while also laying the groundwork for future working environments that untether workers from single employers. Essentially, portable benefits would free up workers to participate more fully in the gig economy, but with a higher degree of security.

And yet, while portable benefits is one of the labor issues around Uber drivers in the U.S., in countries with strong social safety nets, including universal healthcare systems, like Canada, portable benefits are not likely to have significant political traction. Drivers instead may be interested in obtaining other benefits that are attached to traditional employment, like dental care, or a broader subset of issues, like worker's compensation.

The labor battles observed in Montreal and Toronto have much more to do with municipal and provincial governance, rather than with labor rights, with a focus on creating a level playing field between Uber and the incumbent taxi industry. The City Council in Toronto, Ontario passed rules in May 2016 to legalize and regulate Uber that emphasize allowing taxis to operate similarly to Uber, such as by adopting surge pricing (Rider & Pagliaro). In Calgary, Canada, the local government tried to impose requirements on Uber drivers in February 2016 as well, including \$220/year fee, and requires specific licensing and background checks (Fletcher). Uber decided to pull out of Calgary, rather than agree to those terms and conditions, arguing that the \$220 annual fee in particular was too onerous on drivers, and “unworkable” for the rideshare model (Uber Newsroom, “Response to Calgary”). Calgary Mayor Naheed Nenshi argues that without that fee, the city would essentially be subsidizing Uber's operations.⁵ Quebec passed Bill 100, legislation aimed at regulating Uber in a regime that is similar to how it regulates taxis (Quebec, Assemblée Nationale). While many U.S.-based municipalities have similarly contested the legality of Uber, attempts to regulate it have faltered, most famously in a battle between Uber and New York Mayor Bill de Blasio over a cap on Uber's growth (Cohen; Dawsey). The more enduring and recent fights that traverse municipalities in the U.S. focus on specific safety issues, such as over fingerprint-based background checks for drivers (see Section 4, below).

5. See the full twitter conversation captured at: <https://twitter.com/mawnikr/status/717174409333719041>

Background Condition—Spaces for Communication and Community

In each locality, drivers may have some gathering places where they meet other ridehail drivers, such as at an airport cell-phone lot, or at a specified ridehail rest stop, but more often than not, drivers describe that they do not particularly fraternize with other drivers. In a sense, they are competing with one another, so are often not inclined to share ad-vantageous information about their work, such as where the most lucrative fares are, with local drivers. However, in online forums, where drivers gather from all over the U.S. and beyond, drivers describe many strategies for maximizing their earnings, or communicating with passengers or employers, and offer advice on how to resolve the challenges they face.

For drivers who are not engaged in information-sharing communities of drivers, their experience with Uber and Lyft may be primarily restricted to their communications with the drivers in their own locality, and thus they may not be deriving lessons from comparable driver experiences, or seeing contrasts in driver experiences across regions. While there are tens of thousands of drivers in forums, that is still a minority of drivers in a workforce of upwards of 550,000 ridehail drivers who work for Uber and Lyft combined. Given that driver forum participation is an unofficial aspect of Uber/Lyft work (in which a minority of drivers may be involved as passive or active participants), rather than an official part of the companies' infrastructure, this means that different drivers will have vastly different experiences of working conditions, from collaborative co-work to relative isolation.

Background Condition—Incumbent Activity and Platform Trust

In some locations, Uber's attempt to enter the ridehail market has been met with unequivocal resistance. In Montreal, for instance, Uber is strictly illegal and openly opposed by a strong base of taxi workers and operators. And yet, Uber's platform still functions. Those workers who choose to drive in Montreal, therefore, negotiate a number of unique conditions. Uber drivers in Montreal have to operate stealthily, for fear of the transportation inspectors, who can fine them and impound their vehicles, and taxi drivers, who have been documented egging (Global News) or otherwise trying to intimidate Uber drivers by blockading them. One driver actively used an older navigation system as a decoy, but all the drivers observed kept their phones either in their laps,

held up by an accessory beneath the dashboard, or manually lowered them when they worried about taxis spotting them. Uber itself has given advice on how to evade detection in some markets, such as communications from Uber Miami “advising drivers how to avoid detection at South Florida airports” where they are known to receive citations or fines (Wallman). The battle for drivers in Montreal is largely against taxi drivers and secondarily, the city; for Uber drivers there, the battle is certainly not about labor rights, at this stage, although for taxi drivers the battle is about maintaining their turf and income. As far as working conditions, the operation of Uber where it is illegal and openly opposed means an essential de-automation of many aspects of the work, as drivers must prepare for and respond to contingency that drivers in other locations can take for granted. One driver, Yassin, said he’s looking forward to Uber becoming legal so that he can pay his income taxes; he doesn’t want to submit his earnings statement to the government because he perceives this will be proof of his illegal activity.

It is interesting to note that the conflict around Uber driving in Montreal has produced a particular sentiment among drivers there. Some drivers reported feeling like Uber, as a company, “had their back” in pushing back against resistance. Uber has been known to pay for tickets or impound costs for their drivers in Montreal, and these efforts have fostered a kind of loyalty in the city. By contrast, preliminary fieldwork suggests Uber drivers in New York (where Uber is legal and popular) have much lower opinions of the company after three years of perennial rate cuts (Uber Newsroom, “Three Septembers”). Drivers in some locations have even organized protests against the company. In both New York and in Dallas, drivers for higher-tiers of Uber services, like UberBlack, protested when the company implemented a policy of directing uberX fares to them: at uberX rates, drivers perceived that they could barely cover the expense of operating their luxury vehicles, which some leased specifically to drive with Uber (Scheiber).

This is a dynamic process, and worker perceptions evolve as platform policies adapt in response to the regional context. For example, subsequent to the 2016 rate cuts (Campbell), Uber drivers in New York and New Jersey for whom Uber is a significant part of their income describe how they are effectively channeled into working only during surge or during incentive pricing like hourly guarantees. In regions where the rates have not undergone significant changes, such as in Montreal, the salient compensation factor for drivers is whether they

pay a commission of 25% or 20% to Uber. In Montreal, drivers understand the inherent precarity of their work because it is illegal, and they hope to see it become legal to reduce its risk. In other cities, like Seattle, WA, drivers seek to unionize or to otherwise remedy a significant power imbalance between the company and the drivers, in part to create more stable working conditions for drivers (Beekman).

Montreal Uber drivers are allied with the company, and they strategize either individually or in digital groups (such as on WhatsApp or Zello) around not getting caught by taxi drivers or transportation inspectors. When they discuss flexible working hours and the draw of surge pricing, they are describing an amenable working environment with perks. By contrast, many drivers who operate in NYC/NJ describe similar work as a characteristic of strained worker-company relations. Many drivers perceive that the company advertised very high earnings, like \$90,000/year (D’Onfro), and then cut rates at which passengers pay and at which drivers earn, after drivers were on-boarded to and invested in the platform. In lieu of reduced earnings, working conditions or company practices that limit (Rosenblat, “The Truth”) how much freedom and independence drivers have at their job in any city underwent a perceptible shift from the workers’ perspectives. In the context of worker discontent with rate cuts and other negative changes to their compensation structures, such as increases in commissions drivers pay to the company, drivers start to take strong issue with a broad range of company practices that undermine their own earning ability, and start to examine the company rhetoric more critically.

It should be noted that worker perception does not turn entirely on company practices. Drivers’ assessments of what it means to work is important, as well. Miguel, a Montreal Uber driver who originally hailed from Guatemala, drove 7 days per week, even though he is retired with a pension, and rents out the ground-floor apartment of his townhouse for additional income. “I’d rather work than be on the welfare, but anyways I already have my pension plan...my wife is working, my son is working, but Sunday is kind of like a religion, we sit all together at the table for dinner...We make money, but you have to work hard.” To Miguel, working hard is an important part of his identity, even as a retiree, and in his view, all the money he can make adds up, even if some jobs are less lucrative than others. Interestingly, he doesn’t mind using his higher-end car, which is eligible for the higher rates of the uberSelect tier of service, for uberX fares, which earn money at lower

rates. “I got work for UberSelect, which is more expensive... What I wanna make is money, my dear, I wanna make money, I don’t care,” he says. Yet, the exact same company business practice that Miguel is amenable to, of directing uberX fares to higher-class vehicles, which are more expensive to operate (gas, etc.), prompted drivers to protest physically at Uber’s headquarters in New York and in Dallas until the policy was retracted (Scheiber). These workers felt they were being squeezed, and undermined in their ability to earn a profitable living.

Diverse Background Conditions Impact the Political Debate

Like the broad variety of driver motivations, the diversity of regional backgrounds in which Uber operates means a fracturing of the job of driving. It is simply a different job in different places. It is important to consider such regional variations when assessing the models predicting the future of automation. The preceding examples indicate that the possibility of automation is complicated by the realities of local governance and cultural norms. The likelihood for automation to receive organized resistance, then, should be considered in theories on the future of work. In addition, these struggles between stakeholders over automation can have unexpected outcomes, that redraw lines of association and investment between corporations, workers, communities, and other organizations in complex ways. To illustrate, the following section examines one case study in detail across a number of separate regions.

Part IV

Case Study: Fingerprinting

The simplest narrative of automation’s threat to the future of work sees corporations pitted against workers based on the notion that computers can do jobs cheaper or better than wage labor. However, the reality is that occupational automation can have far more complicated effects. This can complicate the relationships between different stakeholders, as corporations might be pitted against one another, workers may disagree with one another, or issues of governance and civil rights overlap. This is particularly clear in the regional conflicts over fingerprint-based background checks for Uber/Lyft

drivers in Texas and New York.⁶ In the case of locally mandated fingerprinting, Uber has reacted in at least three distinct ways, further fracturing the nature of work for the company.

Everywhere that fingerprint-based background checks have been proposed for Uber drivers, the company has expended resources in resistance. In 2015, Uber spent between \$420,000 and \$945,000 to lobby the Texas state legislature in support of a bill that would exempt them from local fingerprinting requirements in cities across the state. In Austin, Texas, where the city council passed an ordinance requiring such background checks, Uber and Lyft together reportedly spent \$8.6 million on lobbying and media campaigns to engender support for Proposition 1, a referendum vote that opposed the fingerprinting. This even included the formation of the “Ridesharing Works” PAC, whose operations mimicked those of a local, grassroots campaign. As with efforts at the state level, these political efforts failed.

In Austin, Uber and Lyft both discontinued services after Proposition 1 failed. This had been an explicit part of their campaign before the votes—fingerprinting meant the companies would leave the city. Uber itself has claimed that the expense and delay incurred by the practice simply does not match their business model, which relies on the relatively quick and frictionless on-boarding of new drivers. When fingerprinting became a strict requirement, the company left, leaving many of its former workers in difficult positions.

There are other cities where Uber and Lyft have put up with fingerprinting requirements. In NYC (and Houston, for Uber only), the companies remain active—likely because of the extreme size and visibility of the markets. Uber reports having 25,000 active vehicles in NYC, for instance, almost double the number of active yellow-cabs. Uber has argued that fingerprinting requirements create a significant backlog for their business in these locations; they claim that 20,000 potential drivers have dropped out during the Houston screening process. Currently, though, the company is willing to remain active in these locations.

Finally, recent changes in San Antonio (less than two hours’ drive from Austin) have produced a third outcome. Here, a political compromise has made fingerprinted background checks *optional*, and so Uber drivers hailed there are displayed in-app with an extra bit

6. Rosenblat has previously reported some of her findings in Austin in “Uber’s Drive-By Politics” for Motherboard.

of data informing passengers whether or not the driver has completed a fingerprint-based background check. This highlights an interesting relationship, as the specifics of local business regulation have now had a direct impact on the design and user-interface of the company's app. This begins to counter the idea that the app serves a consistent, unified service regardless of location.

It is interesting to note that driver reactions have been mixed. In Austin, shortly after Uber's departure, Rosenblat spoke with former drivers who were upset and disappointed by the outcome of the political struggle. Many indicated that they would have preferred to have completed fingerprint-based background checks in order to keep driving. Among these former drivers, the decision by Uber to stop operating in Austin was seen, at best, as a mismanagement of the political process, and, at worst, evidence that the company had little concern for the well-being of their established drivers.

Advocates of fingerprinting requirements have explained the decision as one of equity between Uber/Lyft and incumbent car services, who already have to submit to such checks. But the issue of fingerprinting is not as simple as preferring one business over another. In their work against fingerprinting requirements, Uber has begun to work directly or in alliance with the National Association for the Advancement of Colored People (NAACP) across different states, like New Jersey (Uber Under the Hood), Austin (McGlinchy), and Massachusetts (Andersen), to bolster their case. Work with the NAACP has focused on the argument that fingerprint-based background checks have historically disenfranchised men of color based on arrest rather than conviction records, and therefore, Uber's fingerprint-free process can be seen as a move to open up work opportunities for under-privileged populations. They even worked with the New Jersey NAACP to recruit 3,000 new drivers from low-income, minority neighborhoods (CBS New York). This allows Uber to leverage the moral weight of civil rights issues to strengthen their corporate strategies, but it also points to the complicated consequences of automation, as background checks are themselves automated in many ways. The former Attorney General of the US, Eric Holder, whose law firm, Covington & Burling LLP, has Uber as a client (McCabe, "Eric Holder"), recently penned letters (Cornfield)⁷ describing how the FBI

database was never meant to be used for employment determinations, and how it is fraught with errors that yield a disproportionately negative impact on minorities seeking employment.

The case of fingerprinting requirements therefore illustrates two complications to the simple narrative that automation eliminates jobs. For one, automation can change the way jobs are performed and accessed, and open different opportunities for their completion. Secondly, predictions about job effects cannot ignore the vast variety among potential workforces, as the work around the employment of minority groups indicates. In addition, the type of integration that Uber has performed with a larger civil rights issue hints at possible future arrangements for large corporations that rely on automation. Already, Uber, Lyft, Ford, Volvo, and Google have entered into a coalition around the regulation of autonomous cars, labeled the Self-Driving Coalition for Safer Streets — whose effects are yet to be seen (Hawkins).

Part V Conclusion

One of the takeaways from previous research (Rosenblat & Stark) and preliminary fieldwork on ridehail drivers across diverse regions is that the same business, with a similar toolkit of practices and incentives, produce a variety of experiences and perceptions from its workforce. A significant factor in the regional adaptations of how drivers experience working for Uber, the dominant ridehail company, for example, depends in particular on whether Uber's relationship to its drivers is fractured and contentious in that local context, or one that's closer to trust and alliance or generally neutral. The impact of other business practices and how they shape driver perceptions of their work for both Uber and Lyft depends more strongly on the drivers' motivations for working, which becomes evident around drivers who are using ridehail work as a means to transition from one career to another, or drivers who are hobbyists. Driver experiences of their work can also be significantly affected by the local politics of certain facets of their work, such as the contested introduction of fingerprint-based background checks. These are not a full and comprehensive list of all the factors that impact how drivers experience and manage work and employment

7. See the full text of such a letter at:
<https://suntimesmedia.files.wordpress.com/2016/06/letter-to-alderman-beale-june-2-2016.pdf>

structures that emerge through software platforms, but they are demonstrative of a less cohesive set of experiences than the coherence of the sharing economy suggests.

The second point illustrated by this research is that we can anticipate that automation is unevenly realized across geographic, political, and cultural boundaries. Technologies are not only collections of electronic components and lines of code, but they are also made of users and protocols of use. Simply to determine whether a process can be accomplished by algorithm is not to determine the exact future of work.

Forecast

Having examined a set of specific conditions of labor under Uber and Lyft's systems in the US and Canada, we conclude that there are several important points that should be acknowledged in any discussion of the future of work based on automation and computerization. It's possible that many of the occupations that are "susceptible" to automation may shift to hybrid models of employment, rather than strictly replaced. As such, newly automated jobs are also capable of opening up new opportunities of employment, or shifting the structures of access. This is not to argue that automation inherently creates job opportunities, but rather that there are more nuanced concerns than the strict elimination of jobs.

Finally, the political struggles around automation are unlikely to break down into clear pro-corporate vs. pro-worker lines. Many stakeholders will be active in the debates around automation, and their motivations and values are hard to predict in a speculative, quantitative way. Ultimately, this is why empirical, qualitative work is valuable. It enables the discourse on the future of work to move away from simple conceptions of risk and toward more nuanced conceptions of power and equity, newly divided between diverse populations of real people.

Works Cited

- Arntz, Melanie, Terry Gregory and Ulrich Zierahn (2016), "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis," OECD Social, Employment and Migration Working Papers, No. 189, OECD Publishing, Paris. http://www.oecd-ilibrary.org/social-issues-migration-health/the-risk-of-automation-for-jobs-in-oecd-countries_5jlz9h56dvq7-en
- Andersen, Travis. 2016. "NAACP, Uber chide fingerprint proposal." *The Boston Globe*, January 8, 2016. <https://www.bostonglobe.com/metro/2016/01/07/uber-naACP-raise-concerns-with-fingerprinting-proposal/0V0EoB9kHZAQFib53suFnL/story.html>
- Beekman, Daniel. 2016. "Uber deals put spotlight on Seattle showdown." *The Seattle Times*, May 10, 2016. <http://www.seattletimes.com/seattle-news/politics/uber-deals-put-spotlight-on-seattle-showdown/>
- Bhuiyan, Johana. 2015. "Uber Drivers in the U.K. Just Filed an Employee Misclassification Claim." *BuzzFeed News*, November 3, 2015. https://www.buzzfeed.com/johanabhuiyan/uber-drivers-in-the-uk-just-filed-an-employee-misclassification?utm_term=.ynglNPeZz#.pvDB7peWL
- Brzeski, Carsten and Inga Burk. 2015. "Die Roboter kommen. Folgen der Automatisierung für den deutschen Arbeitsmarkt [The Robots Come. Consequences of Automation for the German Labour Market]", ING DiBa Economic Research. <https://www.ing-diba.de/pdf/ueber-uns/presse/publikationen/ing-diba-economic-research-die-roboter-kommen.pdf>
- Campbell, Harry. 2016. "Should You Still Drive for Uber After the Latest Rate Cuts?" *The Rideshare Guy*, January 20, 2016. <http://therideshareguy.com/should-you-still-drive-for-uber-after-the-latest-rate-cuts/>
- CBS New York. 2015. "Uber, NAACP Create Partnership to Hire Minority Drivers in New Jersey." December 23, 2015. <http://newyork.cbslocal.com/2015/12/23/new-jersey-minority-uber-drivers-naACP/>
- Chui, Miachel, James Manyika, and Mehdi Miremadi. "Four Fundamentals of Workplace Automation." McKinsey & Company, November 2015. <http://www.mckinsey.com/business-functions/business-technology/our-insights/four-fundamentals-of-workplace-automation>
- Cohen, Richard. 2015. "Uber mows down Bill de Blasio." *The Washington Post*, July 27, 2015. https://www.washingtonpost.com/opinions/ubers-bare-knuckle-battle-against-the-taxi-industry/2015/07/27/e0e7be98-3483-11e5-8e66-07b4603ec92a_story.html?utm_term=.80363db88f63
- Cornfield, Josh. 2016. "Eric Holder weighs in for Uber against fingerprint checks." *The Boston Globe*, June 9, 2016. <https://www.bostonglobe.com/business/2016/06/08/eric-holder-weighs-for-uber-against-fingerprint-checks/K8JNx5JTl32Qmo1jtMlZlK/story.html>
- Dawsey, Josh. 2016. "New York City Council Bypasses Mayor Bill de Blasio on Uber Policy." *The Wall Street Journal*, January 7, 2016. <http://www.wsj.com/articles/new-york-city-council-bypasses-mayor-bill-de-blasio-on-uber-policy-1452217772>
- D'Onfro, Jillian. 2014. "Uber Says Its Drivers Are Making \$75,000-\$90,000 a Year." *Business Insider*, May 27, 2014. <http://www.businessinsider.com/uber-drivers-salary-90000-2014-5>

Economist, The. 2015. "There's an app for that." *The Economist*, January 3, 2015.
<http://www.economist.com/news/briefing/21637355-freelance-workers-available-moments-notice-will-reshape-nature-companies-and>

Fletcher, Robson. 2016. "Uber says it 'just can't operate' in Calgary under new bylaw before council Monday." *CBCNews*, February 19, 2016. <http://www.cbc.ca/news/canada/calgary/uber-new-bylaw-rejected-prior-council-vote-1.3455685>

Frey, Carl Benedikt and Michael A. Osborne. 2013. "The Future of Employment: How Susceptible are Jobs to Computerisation?" University of Oxford.
http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

Gillespie, Tarleton and Nick Seaver. 2016. "Critical Algorithm Studies: a Reading List." Microsoft Research. Accessed March 30, 2016. <https://socialmediacollective.org/reading-lists/critical-algorithm-studies/>

Global News. 2016. "RAW: Montreal taxis eff Uber driver." February 17, 2016.
<http://globalnews.ca/video/2522712/raw-montreal-taxis-egg-uber-driver>

Hawkins, Andrew J. 2016. "Google, Ford, and Uber just created a giant lobbying group for self-driving cars." *The Verge*, April 26, 2016. <http://www.theverge.com/2016/4/26/11510076/self-driving-coalition-ford-google-uber-lyft-volvo-nhtsa>

Information Society Project. 2016. "Unlocking the Black Box: The Promise and Limits of Algorithmic Accountability in the Professions." Yale Law School. <http://isp.yale.edu/event/unlocking-black-box-promise-and-limits-algorithmic-accountability-professions>

Kokalitcheva, Kia. 2016. "Uber Mimics Lyft in Rolling Out Driver-Friendly Features." *Fortune*, June 6, 2016. <http://fortune.com/2016/06/06/uber-new-driver-features/>

Karen E. C. Levy. 2015. "The Contexts of Control: Information, Power, and Truck-Driving Work." *The Information Society* 31:2, 160-174, DOI: 10.1080/01972243.2015.998105

Lobel, Orly. 2015. "The Law of the Platform." Accessed March 30, 2016.
<https://www.law.umich.edu/centersandprograms/lawandeconomics/workshops/Documents/Paper%206.%20Lobel.%20The%20Law%20of%20the%20Platform.pdf>

Lyft.com. n.d. "Cities We're In." Accessed March 30, 2016. <https://www.lyft.com/cities>

McCabe, David. 2015. "Clinton eyes flexible benefits for 'on-demand economy' workers." *The Hill*, July 20, 2015. <http://thehill.com/policy/technology/248552-clinton-says-benefits-should-be-more-portable-for-on-demand-economy-workers>

McCabe, David. 2016. "Eric Holder goes to bat for Uber." *The Hill*, June 15, 2016.
<http://thehill.com/policy/technology/283662-eric-holder-goes-to-bat-for-uber>

McGlinchy, Audrey. 2015. "Groups Say Fingerprint-Based Background Checks Could Lead to Racial Discrimination." KUT.org, October 19, 2015. <http://kut.org/post/groups-say-fingerprint-based-background-checks-could-lead-racial-discrimination>

Mullin, Joe. 2016. "Judge rejects \$12M Lyft class-action settlement." *Ars Technica*, April 8, 2016.
<http://arstechnica.com/tech-policy/2016/04/judge-rejects-12m-lyft-class-action-settlement/>

NCC Staff. 2015. "Uber fighting big legal battles on two fronts." *Constitution Daily*, September 25, 2015. <http://blog.constitutioncenter.org/2015/09/uber-fighting-big-legal-battles-on-two-fronts/>

Open Society Foundations. 2015. "Technology and the Future of Work: The State of the Debate." <https://www.opensocietyfoundations.org/sites/default/files/future-work-lit-review-20150428.pdf>

Pajarinen, Mika and Petri Rouvinen. 2014. "Computerization Threatens One Third of Finnish Employment." ETLA Brief, No. 22, pp. 13. <https://www.etla.fi/wp-content/uploads/ETLA-Muistio-Brief-22.pdf>

Pipes to Platforms. n.d. "The Case Against the Sharing Economy." Accessed March 30, 2016. <http://platformed.info/sharing-economy-future-of-work/>

Quebec, Assemblée Nationale. 2016. "An Act to amend various legislative provisions respecting mainly transportation services by taxi." <http://www.assnat.qc.ca/en/travaux-parlementaires/projets-loi/projet-loi-100-41-1.html>

Reuters. 2015. "Legal troubles — including 173 lawsuits in the US — threaten Uber's global push." *Business Insider*, October 5, 2015. <http://www.businessinsider.com/r-legal-troubles-market-realities-threaten-ubers-global-push-2015-10>

Rider, David and Jennifer Pagliaro. 2016. "Toronto legalizes UberX in marathon meeting." *thestar.com*, May 3, 2016. https://www.thestar.com/news/city_hall/2016/05/03/toronto-city-council-debates-uber-rules.html

Rosenblat, Alex. 2016a. "The Truth About How Uber's App Manages Drivers." *Harvard Business Review*, April 6, 2016. <https://hbr.org/2016/04/the-truth-about-how-ubers-app-manages-drivers>

Rosenblat, Alex. 2016b. "Uber's Drive-By Politics." *Motherboard*, May 27, 2016. <https://motherboard.vice.com/read/uber-lyft-austin-drive-by-politics>

Rosenblat, Alex. 2016c. "How Can Wage Theft Emerge in App-Mediated Work?" *The Rideshare Guy*, August 10, 2016. <http://therideshareguy.com/how-can-wage-theft-emerge-in-app-mediated-work/>

Rosenblat, Alex. 2016d. "Who are the Uber & Lyft drivers?" *Medium.com*, July 11, 2016. <https://medium.com/uber-screeds/who-are-the-uber-lyft-drivers-e7b746f21665#.bdli5zo1a>

Rosenblat, Alex and Luke Stark. 2016. "Algorithmic Labor and Information Asymmetries: A Case Study of Uber's Drivers." *International Journal of Communication* 10(2016), 3758-3784. <http://ijoc.org/index.php/ijoc/article/view/4892/1739>

Scheiber, Noam. 2016. "Uber Drivers and Others in the Gig Economy." *The New York Times*, February 2, 2016. http://www.nytimes.com/2016/02/03/business/uber-drivers-and-others-in-the-gig-economy-take-a-stand.html?_r=0

Somerville, Heather. 2015. "Uber has lost again in the fight over how to classify its drivers." *Business Insider*, September 10, 2015. <http://www.businessinsider.com/uber-independent-contractors-or-employee-2015-9>

Somerville, Heather and Dan Levine. 2015. "Exclusive: Uber winning make or break legal battles across America." *Reuters.com*, December 11, 2016. <http://www.reuters.com/article/us-uber-statelaws-idUSKBN0TT2MZ20151211>

Sundararajan, Arun. 2016. *The Sharing Economy: The End of Employment and Capitalism*. Cambridge, MA: MIT Press.

Uber Newsroom. 2014. "Three Septembers of uberX in New York City." <https://newsroom.uber.com/us-new-york/three-septembers-of-uberx-in-new-york-city/>

Uber Newsroom. 2016a. "Growing and growing up." <https://newsroom.uber.com/growing-and-growing-up/>

Uber Newsroom. 2016b. "Response to Calgary City Council's proposed ridesharing bylaw." <https://newsroom.uber.com/canada/response-to-calgary-city-councils-proposed-ridesharing-bylaw/>

Uber Under the Hood. 2016. "Uber partners with NAACP to increase flexible work opportunities." *Medium*, January 5, 2016. <https://medium.com/uber-under-the-hood/uber-partners-with-naacp-to-increase-flexible-work-opportunities-78cfc51695b3#a9eh8iq4q>

uberlawsuit.com. n.d. "Uber Drivers." Accessed March 30, 2016. <http://uberlawsuit.com/>

Wallman, Brittany. 2015. "Uber: 'We cannot operate' under new Broward law." *SunSentinel*, April 29, 2015. <http://www.sun-sentinel.com/local/broward/fl-uber-law-vote-20150428-story.html>

Zatz, Noah. 2016. "Is Uber Wagging the Dog With Its Moonlighting Drivers?" *onlabor.org*, February 1, 2016. <https://onlabor.org/2016/02/01/is-uber-wagging-the-dog-with-its-moonlighting-drivers/>