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# “Drive My Car… Be a Star”? Shifting Costs in the Car-for-Hire Sector and the Varied Burdens of Ride-Share Labor

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ABSTRACT

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This thesis explores app-based ride-share as an emblem of the digitized, post-Fordist economic transition. I review how its recent emergence connects to the 20th century taxi-dominated ride-hailing industry, and to broader post-War socioeconomic and political trends. Examining driver demographics in the context of the ride-share labor process, I assess how class, gender, racial, and other social hierarchies influence workplace outcomes. Throughout, I emphasize the modulating role of both algorithmic management and worker-to-worker exchange.

# I. Introduction

Transportation service – easing others' travel burdens in exchange for material compensation – is a social phenomenon that likely pre-dates recorded history.[1] The technologies and meanings applied to such services have varied over time and across cultural contexts. At the turn of the 20th century, conditions within the urban United States accommodated the advent of car-for-hire services resembling the modern taxicab.[2] In the present day, taxi firms and independent cabbies continue to occupy a prominent position in the transport service sector. However, since 2009 they have been obliged to coexist with "app-based ride-share", a newer model of car-for-hire services built upon substantially different social, labor, and economic relationships.[3]

From a passenger's perspective, newer "ride-share" options may not figure as radical departures from taxicab services. Despite drivers for ride-share firms like Uber or Lyft eschewing standardized vehicles (e.g., "checkered cabs") or company uniforms, for example, they provide the same core service as taxi drivers: using a car, they transport one or more passengers from 'Point A' to 'Point B'. Moreover, the prices consumers pay for ride-share services, while varying by market, are broadly comparable to taxi rates.[4] Even GPS and smartphone technologies, initially unique to ride-share, are now entrenched in many major taxi firms.[5]

Despite these similarities in output, the labor processes of the two models differ substantially. While ride-share drivers and cabbies face many comparable demands on their physical and emotional labor, the workplace context of that labor is defined by unique organizational structures. Among many points of contrast, these include differences in the

material investments they require of drivers, and the manner by which customer evaluations are embedded in the labor process.

In multidimensional ways, the ride-share labor process is characterized by a dispersal of cost and risk away from firms (i.e., the owners and managers setting the terms of driver participation in ride-share and controlling the revenues thereof) and onto workers (i.e., the customer-facing providers of the "end-product" of car-for-hire service). Certainly, the labor process of the older taxi sector also places material costs and risks on drivers. Relative to the taxi context, however, ride-share firms are less *actively* involved in fare-to-fare operations – with profound implications.

To illustrate: many taxi firms have historically procured and maintained vehicle fleets, effectively renting those cars out to cabbies each shift; in contrast, ride-share drivers individually bear the costs of automobile acquisition and upkeep. Ride-share's disinvestment from vehicle fleets corresponds to a broader disinvestment from fleet garages – settings that, in the taxi context, function as sites of regular driver-driver and driver-manager interactions. In some instances, taxi firms would administer formal trainings in these common spaces, but all fleet garages carried the prospect of informal training through peer-to-peer exchange.

Operating in a labor process without such built-in social zones, ride-share drivers experience neither substantial formal nor informal training as a matter of course in their labor. Rather, they are obliged to pursue any alternatives independently – a process that can demand different levels of effort and expense across drivers. Though less fiscally tangible than a monthly car rental payment, say, any such training-based expenses are likewise costs upon ride-share drivers. These strains on drivers are among many resulting from ride-share firms' avoidance of operational investments once normalized in the taxi sector.

This thesis will explore how ride-share firms' relatively minimized presence in the labor process opens up channels of heterogeneity in driver experience. Specifically, it will emphasize the ways by which an ostensibly "hands-off" approach defers to a synthesis of market and algorithmic forces, and how this inevitably manifests in unequal labor burdens across U.S. social groups. The thesis begins with a literature review, follows with a general introduction to present-day ride-share, and proceeds to a historical contextualization of the broader car-for-hire sector. Next is an exploration of the material burdens of ride-share labor and the ways they color entry into (and exit from) the labor pool. Focus then turns to ride-share's ubiquitous "star rating" system and how that evaluation dynamic informs driver behavior. Throughout, effort is made to articulate how – in spite of its novel form – app-based ride-share constitutes an extension of long-running U.S. economic currents.

### *A. Literature Review*

Notwithstanding its recent market emergence in the late 2000s, ride-share as a subject has received substantial attention from social science researchers. Scholarly examinations have described the sector through legal, economic, public health, and many other orienting frameworks. These have included myriad empirical efforts, most notably a large body of work centering driver and passenger interviews. Quantitative analyses have frequently been based on laboratory decision-making experiments, but some studies also incorporate real world data (e.g., detailed fare histories).

As a whole, this scholarship illustrates demographic patterns in driver outcomes, and in drivers' perceptions of their work. Simultaneously, however, the research also emphasizes the heterogeneity of driver ride-share experiences amid such distributional trends. Age, race,

nativity, wealth – such characteristics meaningfully contextualize drivers' engagement with ride-share, but cannot predetermine outcomes. This body of literature can be neatly organized across the spectrum of macro-, meso-, and micro-level ride-share analyses.

The macro-level studies focus on economic and political changes in broader U.S. society, and how these affected the distribution of resources and decision-making power within the car-for-hire sector (until recently, constituted primarily by the taxi company predecessors of ride-share firms). Likewise, they describe how these shifts were catalyzed or resisted by drivers, and the circumstances that contributed to different levels of worker-manager tension. These investigations often invoke concepts like "Fordism", "globalization", and "neoliberalism" – situating the rising material instability (or "precaritization") of 21st century U.S. workers within these long-running national currents.

Much of this research focuses on a brief mid-20th century window around World War II. Beth Rubin, for example, articulates how U.S. labor's pre-War economic influence – temporarily sedated by the conflict – burst into renewed post-War activity, with waves of strikes and threats thereof. Capital and state interests urgently sought to tamp down this unrest, finding willing moderators in the leadership of ascendant national labor organizations like the AFL and CIO. Rubin describes how these labor leaders exerted their organizational influence to inhibit the power of more radical factions within U.S. unions and their representative bodies. In return, capital afforded labor a 'golden age' of wage and benefit improvements.[6] Other scholars like Steven Abraham have documented the specific pathways by which federal legislation of the era (e.g., the 1947 Taft-Hartley Act) cooled union growth in strength and numbers alike. These studies help to show how U.S. labor power, while strong enough in the post-War period to secure unprecedented workplace gains, began to

ebb. Labor scholars document how workers' holds on these gains would later slip in tandem with union decline.

Ultimately, the past half-century saw car-for-hire workers increasingly unable to prevent the erosion of benefits and job securities won across the pre- and post-War period. As examinations like Graham Hodge's *Taxi! A Social History of the New York City Cabdriver* illustrate, however, the descent from post-War heights to 21st century lows varied across urban markets according to their economic, political, and social characteristics. Hodges describes how, against a post-War backdrop of heterogeneous driver unionization, New York cabbie groups would clash with firm owners, alternatively supported or antagonized by city administrators. The research elucidates that such inter-group strife occurred within the driver pool as well, across demographic lines like age (e.g., veteran workers and young "hippy" part-timers), race (e.g., Anglo drivers and minority cabbies or passengers), and institutional affiliation (e.g., between "medallion" and unlicensed "gypsy" cabs).[7]

Other examples, like Veena Dubal's excellent "Drive to Precarity", additionally emphasize the impact of app-based ride-share on the taxi sector, contrasting their respective driver pools. Dubal's research surveys San Francisco – epicenter of app-based ride-share – and explores the regional story of post-War cabbie union decline. She writes how this fall in power linked to diminished influence in city government, how administrators (especially its lawyers) became increasingly hospitable to the emerging ride-share sector. City decisions, like the medallion policy exemption granted to the app-based ride-share, helped accelerate the taxi sector's relative weakening.[8] Dubal's work also investigates how accommodations made by AFL-CIO leadership helped set the stage for ride-share drivers' classification as

"contractors" (a legal identity with greatly reduced organizing rights compared to "employees"). In this way, Dubal's work and similar efforts help demonstrate how the inertia of taxi driver declines produced the economic-political context of the emerging ride-share sector.

More firmly meso-level research takes a community-focused look into the modern ride-share ecosystem. Drivers and passengers are typical subjects, but such work may also assess executive decision-making, firm branding, and other operations of ride-share's managerial tier. Data for these investigations can include firm-produced materials (e.g., application interfaces, driver "FAQ" guides), but the majority emphasize surveys and interviews of both drivers and passengers. Authors accumulate these discrete, individual-level ride-share narratives to construct larger pictures of practice(s) and culture(s) within the sector. With the exception of research on ride-share internet forums and other social media, however, these investigations can describe little about driver-to-driver interactions. Principally, this is because social exchange between workers is not an inherent feature of the ride-share labor process. To explore group dynamics in ride-share, researchers instead focus on gathering driver reports on their experiences with passengers and ride-share generally, then comparing and cataloguing these individual narratives.

In "Free to Work Anxiously: Splintering Precarity Among Drivers for Uber and Lyft", Brenton Malin and Curry Chandler contextualize this near-total individuation of the driver labor experience. They situate app-based ride-share at the tail-end of five decades of "neoliberal privatization", during which capital's pursuit of "labor market flexibility… [transferred] risk and insecurity onto workers".[9] The taxi sector experienced that half-century as an erosion of stabilizing workplace benefits (e.g., pensions, health insurance) and union

cohesion. To obtain legally-required taxi "medallion" licenses in an increasingly expensive, speculative market, drivers became more intensely inured to their particular loan repayment or leasing contract terms. Malin and Chandler's driver interviews identify a ride-share labor pool that, in spite of their work's nominal "flexibility", finds itself similarly subject to the material pressures of (app-based) car-for-hire work. Ride-share drivers, though free of medallion burdens, are obliged to independently acquire and upkeep their car-for-hire automobile. They describe the constrained nature of their labor choices, how financial and social pressures merge in that personal cost-benefit analysis. As highlighted by an interviewee's account of sexual harassment from intoxicated male passengers, for example, these researchers illustrate how driver demographics inform such workplace decision-making, and how these choices tangibly affect labor outcomes.

In a similar vein, Alex Rosenblat's *Uberland* weaves together driver interviews, firm-produced materials, and other media to characterize the ride-share sector. Her analysis stresses both the economic and cultural presence of ride-share, including its relationship with the larger "tech" industry. Among other insights, Rosenblat articulates the myriad ways by which a U.S. ideal of a "[wealthy], fashionable, [English-speaking], White male millennial" translates to material and psychological burdens for drivers that deviate from this standard.[10] She further describes ways by which social privilege filters through the structural features of the ride-share labor process (e.g., its rating system, its entry costs), informed by both passenger biases and "neutral" market forces.

Micro-level ride-share research tends to focus on particular mechanisms of the labor process, and how their practice in social context affects drivers differently. This includes studies on "algorithmic management" – the ways by which automated processes (e.g., within

ride-share apps or firms' "driver support" apparatuses) subject workers to material and behavioral incentives. Many of these efforts investigate aspects of ride-share's "star rating" system, incorporating data from both laboratory and real-world contexts, and are frequently supplemented by driver interviews.

In their work, Mareikie Mohlmann and Lior Zalmanson explore the paradox created under ride-share's algorithmic management – between built-in systems of worker control and the sense of "independence" and "autonomy" drawing many drivers to the sector.[11] The authors describe a network of data collection, automated notifications, and real-time changes to drivers' market conditions (e.g., fare rates) – all mediated by a smart-phone application. In contrast to the possibility of "trust-based… [human] relationships" formed between a manager and their staff, ride-share's organizational model depends on algorithm-driven processes of worker management.

Other studies speak to a core, underlying abstraction in car-for-hire service work created by ride-share's "star rating" system. Topics of investigation include the concept of "ride quality", and how this contrasts with user-worker evaluations elsewhere in the service sector. Authors examine how social realities and biases inform quality perceptions, and how ride-share's algorithms exploit this information resource.[12] In their article "Standing out From the Crowd", Raval and Dourish analyze the star-based rating system, exploring how a "five-star trip" is understood by drivers and reviewing their production strategies from an emotional labor perspective. They find the effectiveness of such strategies, and the strains of their execution, may meaningfully vary depending on the "[social] body" drivers bring to their labor. Drivers are intimately aware of the importance of passenger evaluation, self-consciously modulating their service performance. The authors emphasize how drivers'

behavioral reactions to the rating system (and algorithmic management in general) are an essential organizing principle within ride-share. As they put succinctly, theirs and other micro-level studies show how ride-share "[makes relevant] new aspects of the self [that] become enrolled in the labor relation."

These diverse research blocs, in spite of their wide focus across time, subject-matter, and analytic scale, aggregate to a cohesive image of the labor process in app-based ride-share. This thesis will attempt to synthesize insights from these works around a central narrative of ongoing "cost-dispersal" in the U.S. car-for-hire sector.

### *B. Sector Background*

Ride-share firms began their ascent to market and cultural prominence in the wake of the 2008 financial crisis and subsequent "Great Recession": Uber was founded in 2009 and Lyft arrived soon after in 2012. These two firms dominate the U.S. ride-share sector, with Uber controlling about 70% of market share to Lyft's 30%. Ride-share firms are active across the country, with drivers estimated to account for some 1-2% of the nation's labor force.[13] Solicitors of these services (passengers) include over a third of *all U.S. residents* (and roughly half of all suburb- and city-dwellers).[14]

In spite of sector-wide declines associated with the 2020 onset of the COVID-19 pandemic, both Lyft and Uber have experienced remarkable growth over the past decade. The figures below illustrate how the two firms have seen roughly 3-fold increases in their annual revenues and users since 2016. While growth in revenue clearly aligns with growth in users, the average ride-share customer is also spending more on ride-share services over time. Additionally, the past decade has seen Uber expand more vigorously into adjacent

transport services like meal delivery (i.e., with "Uber Eats") compared to its Lyft counterpart.[15]

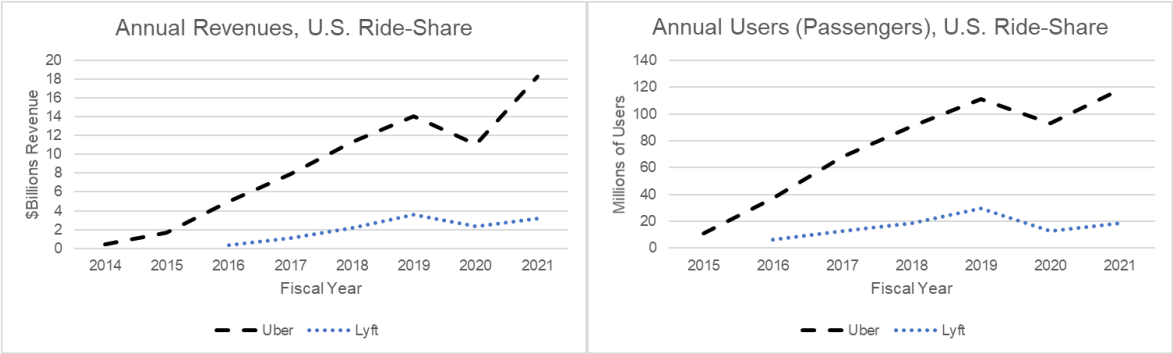


*Figure 1: U.S. Ride-Share Annual Revenues and Users (Source: Author-created, using external data)*[16]

Growth in the number of drivers is more challenging to calculate. Estimates indicate there are roughly 2 million active ride-share drivers in the United States, with Uber laying claim to at least 1 million.[17] Lyft may thus exhibit a much higher U.S. driver-to-user rate. This prospect becomes less perplexing when considering ride-share's unique sectoral characteristics. For example, drivers have discretion to choose the timing and length of their work sessions on an "on-the-fly" basis. Additionally, surveys suggest about a quarter of U.S. ride-share drivers split time between Uber and Lyft's applications. These facts point to how drivers operating in an Uber-dominated ride-share market (i.e., much of the U.S.) face little disincentive to sign up for Lyft as well, despite the latter's smaller user base.[18] Especially as drivers devote more hours to their ride-share labor, switching between applications in pursuit of better fares becomes more common. Any such "hybrid" drivers, even if lopsided in their time allocations between the two apps, would figure as "active drivers" in each firm's accounting.

Whatever the precise count and crossover of the Uber and Lyft driver populations, evidence suggests their composition changes dramatically on an annual basis. Driver retention rates are low in the sector, with most workers leaving fewer than 12 months after their first fare.[19] Some analyses have indicated the retention rate is lower than 25% annually – that over three quarters of a given "first fare cohort" will have exited the sector a year later.[20]

Demographically, the ride-share labor pool is diverse, with many of its characteristics standing apart from the broader service sector. For example, in contrast to the typical dominance of females in food and retail service work, U.S. ride-share drivers are nearly 75% male.[21] Similarly, compared to service sector averages, ride-share workers are remarkably well-educated, with over 50% possessing a bachelor's degree or higher – over twice the rate among taxi or chauffeur drivers.[22] About half of all ride-share drivers are White, with the remaining population closely split between Black, Latino, and Asian drivers.[23] Notably, ages in the U.S. ride-share sector skew older: the driver pool is divided almost equally into the "60+", "50-59", "40-49", and "39 or under" spans (with "29 or under" making up less than a quarter of this latter group).

Some researchers place the net hourly wage for ride-share drivers (i.e., accounting for upkeep and other essential expenses) between $9 and $10 – but methodological differences prevent broad agreement on average earnings.[24] Discrepancies likewise exist between intra-firm and extra-firm estimates of the full-time, part-time breakdown of ride-share drivers. On a national level, Uber asserts that roughly 90% of its drivers work part-time, while outside research suggests this undercounts full-time workers.[25] The results of some national driver surveys differ radically from firm accounts, with only 40% of drivers considering themselves

"part-time".[26] Such disagreements persist even in more localized contexts. For example, UCLA labor researchers found that about 50% of Los Angeles ride-share drivers worked full-time, with this rate about five times Uber's estimate.[27] Such conflicting accounts may stem in part from drivers' aforementioned cross-platform activities, allowing for methodological incompatibilities (e.g., if survey respondents do not distinguish between Uber and Lyft when estimating their total hours). Notwithstanding these disputes, available evidence strongly suggests that in any given market the ride-share labor pool is typically a mix of full- and part-time workers. Naturally, drivers that devote more hours to ride-share labor are responsible for relatively more total rides.[28]

Despite the preponderance of older, White men, the ride-share driver pool is heterogeneous both in terms of demographics and driver choices of when, where, and how long to drive. However, the structure of the ride-share labor process fundamentally influences both self-selection into that labor pool and the workplace decisions drivers make. This includes ride-share's characteristic feature of driver-"owned", operated, and maintained vehicles. The feasibility of ride-share work clearly depends on the ease with which an individual can acquire an automobile. Though ride-share drivers have a variety of financial relationships with their vehicles (e.g., leased, owned outright, purchased by loan), the population necessarily excludes the car-less. Among the car-having, ride-share's fiscal attractiveness and operational sustainability are informed by their broader, individualized material contexts.

The trade-offs in the ride-share labor process extend into less easily accountable areas. For instance, research suggests the safety risks and psychological strains of providing late-night transportation to intoxicated, male passengers are higher for female drivers

compared to their male peers.[29] Nevertheless, ride-share's algorithms process consumer demand by placing premiums on late-night and weekend fares (where such passengers appear).[30] In contrast to the more straightforward "balance sheet hurdle" of ride-share's entry costs, the labor itself demands drivers engage in abstract judgment calls – for example, whether a fare premium is sufficiently high to compensate for an increase in workplace risk.

All workers make labor process decisions according to their subjective reasoning. As this thesis will explore, however, ride-share's structural emphasis on dispersing operational costs to drivers modulates and constrains those choices. Specifically, it opens channels by which a flood of additional costs and benefits – aligned with prevailing socioeconomic hierarchies – intersects with driver social status to affect their labor experiences.

## II. Economic-Historical Context

Ride-share's labor process is structured in ways that meaningfully depart from taxi sector norms. Considering the distinct social conditions in which the sub-sector attained prominence, this is not particularly surprising. As such, ride-share operations are at some risk of being generically summarized as "outside the box thinking" and "path-breaking development" – or, conversely, being dismissed as mere digital novelties. Contrasts between the taxi and ride-share labor processes become more clearly-defined in historical context. In this light, ride-share is neither entirely visionary nor mundane, its differences from the taxicab sector reflecting a pattern of ongoing economy-wide changes. In general, this trend can be characterized as firms continuing a fiscal retreat from their respective labor processes, leaving an increasing share of material responsibility to rank-and-file workers.

### *A. Road to the "Car-for-Hire Golden Age"*

The modern history of the U.S. car-for-hire sector arguably begins in the interim between the two world wars. By the years following World War I, organized labor membership had risen to a substantial level in a variety of economic sectors. Ideological radicalism grew, as did worker willingness to engage in collective actions (e.g., strikes) in opposition to management. In this era, U.S. labor exerted newfound powers and exhibited increased effectiveness at obtaining concessions from capital.[31] Many car-for-hire taxi drivers organized in labor unions, with some cities' (licit) taxi forces being universally unionized.[32] Across the country's urban centers, car-for-hire service workers took action to win wage guarantees and other workplace benefits.[33] With the onset of the Depression, U.S. labor militancy merged with other political currents to catalyze F.D.R.'s slate of New Deal policies.[34] This era generated the U.S. "welfare state" by creating many public programs and institutions (e.g., the Social Security Administration) that diverted state resources towards the economically vulnerable.

Labor scholars describe World War II and the years immediately after as the period when U.S. labor achieved institutional legitimacy.[35] Union membership rates were at the century's highest, and member cohesion was strong; there was ample capacity for effective collective action.[36] Combined with especially high demand for skilled labor (a result of wartime dynamics, e.g., the draft), U.S. unions were at or near their historical apex of bargaining power. Through strikes and other means, organized labor continued to win significant gains in pay, benefits, and workplace guarantees. As labor strengthened, its formal national organizations – the American Federation of Labor (AFL) and Congress of Industrial

Organizations (CIO) – assumed a more central role as the state- and capital-oriented representatives of U.S. unions.

The U.S. government and capital interests were wary of organized labor's capacity to disrupt national economic activity. They were likewise apprehensive of domestic left-wing radicalism as the country stepped into the Cold War with the U.S.S.R. Ultimately, they found willing negotiators among national labor leadership. Defying the more sweeping ambitions of their organizations' politically radical members, these representatives conceded to a relative "defanging" of organized labor in exchange for a cementing of wartime improvements in working conditions. In one assessment, the informal agreement was based on "[workers ceding] all claims over production, investment, and international economic policy" for which they were compensated with "a relatively high level of employment and a secure gain on distributional claims."[37]

In 1947 the Taft-Hartley Act arrived to codify the terms by which organized labor would be allowed to take workplace action – in effect, demarcating strikes in certain contexts as devoid of legal protection. Amidst national leadership's push towards pacification, industrial unions engaged in a series of strikes in the late 1940s. As per the terms of the Act, however, such strikes were increasingly processed through a formalized system of "collective bargaining", with national union leadership taking a dominant role in dispute resolutions. In these ways, the institutionalization of bodies like the AFL and CIO, judicial decisions, and legislative enactments cumulatively served to limit the disruptiveness of individual labor unions, allocating more authority to organizational managers.[38]

It is reasonable to suspect union leaders of bias towards labor-capital arrangements that maintained their institutional power. It is also true that rejecting those terms on behalf of

workers would have required a transcendent vision of a superior future for U.S. labor, as well as faith that renewed conflict with capital could manifest it. Faustian bargain or no, the apparent result of the "capital labor accord" was a golden age for U.S. labor. Workers experienced roughly two decades of gains in real wages, benefits, and economic stability more generally. Car-for-hire labor likewise thrived in this era, though markets varied in terms of the intensity of union presence and the details of their organization. In New York City, for example, lucrative, wartime conditions were enjoyed by non-unionized workers and may have inhibited the organization of cabbie labor until the late 1950s.[39] By contrast, on the other side of the country, San Francisco's taxi sector was fully unionized by the mid-century. Mirroring union trajectories nationwide, however, taxi union leadership became gradually enmeshed within firm bureaucracies. These closer high-level relationships may have produced gains for unionized drivers, but also encouraged the deradicalization of labor activities and a growing alienation between the interests of drivers and their union leaders.[40]

Despite Cold War "Red Scare" pressures further eroding the left-wing militancy of U.S. labor unions, the 1950s and '60s were prosperous years for domestic workers.[41] Central to capital's ability and willingness to finance those workplace concessions was its unique position in the international post-war economy. In brief, industrial capacity outside the U.S. was severely curtailed by wartime damage and other economic impediments; U.S. stock was largely unharmed.[42] Similarly, while regaining metropole stability was a pressing need for most of the world's colonial empires, the U.S. was relatively less burdened, and thus comparatively well-poised to assert its geopolitical interests abroad. In foreign nations across the globe, U.S. capital – assisted by the state and its intelligence apparatuses – took legal and extra-legal action to maximize the homeward flow of extracted resources.[43] Fed in part by

this exploitation of the Global South, foreign wealth thus flooded into the U.S. economy. The increased value of domestic production sharpened labor's (admittedly diminished) threat to disrupt it; ever-higher wages and more generous benefits helped secure its ongoing cooperation in the labor process.[44]

### *B. Declines, Fractures, and Cost Reallocations*

Although the 1960s saw continued accrual of material dividends and further expansion of the social safety net through Johnson's "Great Society" programs, the decade also foreshadowed the long-term erosion of these gains.[45] With rising Cold War budgetary demands, increased competition from Asian and European industry, and the success of anti-colonial campaigns across the globe, U.S. capital was under pressure to discover new strategies for maintaining profit flows. Such tensions have been characterized as a "crisis of Fordism" in which that prevailing, structure-orienting logic – e.g., an emphasis on production centralization, industrial manufacturing, and the institutionalization of organized labor – became an increasingly insufficient solution to then-contemporary economic problems.[46]

U.S. firm "efficiency" in the Fordist era entailed concentrating production in or near cities, for example, or controlling conflict with workers through closer integration of union leadership with firm power structures. By the 1970s, however, firms began a transformation into "leaner, more flexible organizations".[47] Logistics technology advancements were key features of this era, as was an increasingly industrialized Global South – spurred on in part by the "structural adjustment" loans of multilateral institutions like the World Bank and International Monetary Fund.[48] Such macroeconomic changes altered U.S. firms' rationale for tolerating domestic union power, even its de-militarized post-war version. Unions themselves had atrophied under labor leadership's institutionalization, if less in membership

than in ideological cohesiveness and capacity for effective collective action. Such capital-labor accords were forged out of a union-based threat that, in the post-war decades, had diminished into a paper tiger. Firms took advantage of labor's newfound vulnerability, abetted by a bipartisan tilt towards anti-state conservatism and sanctioned by federal actions (e.g., the 1981 PATCO Strike).[49] And so industrial outsourcing, decentralization, and the erosion of workplace benefits became characteristic of the new "efficiency" of the "Post-Fordist" era.

Similar stories played out in the car-for-hire sector, with taxi union strength decaying or evaporating entirely.[50] In the post-war period, cabbies belonging to a firm's fleet garage typically operated under the terms of a commission-based, revenue-sharing system. As the 1970s wore on, many of these arrangements transformed into "leasing" systems, in which drivers would pay a set fee for the right to drive a cab for a certain period of time.[51] (The functional mechanism of leasing is the taxi "medallion" system, discussed in detail later in this document). Leasing fees (also called "gate fees") guaranteed the payee (usually taxi firms, but also independent drivers renting out their cabs) a fixed revenue regardless of actual fare conditions. Critically, a 1979 National Labor Review Board decision found that leasing drivers did not possess the legal right to engage in collective bargaining. While this Post-Fordist exile of organized labor from firm bureaucracies inverted the Fordist trend towards institutionalization, in context both strategies functioned to degrade organized labor power.[52] This weakening further limited the pitch of labor-firm conflict in the subsequent decades of decline. Like a mirror of their earlier ascent, taxi union power fell precipitously, and many wage and benefit gains were reversed.

Post-Fordist industrial sensibilities merged with an increasingly neoliberal U.S. state to accelerate the process of globalization. [53] Through new geopolitical alliances, military actions, and the suppression of left-wing labor movements abroad, the United States pushed less economically powerful nations towards "free trade" policy stances, facilitating international capital and commodity flows.[54] As U.S. firms reallocated their resources to cheaper operations abroad (driven in part by lax environmental and safety standards), domestic manufacturing sputtered. [55] This de-emphasis on traditional industry was replaced by an economy-wide shift towards services – including the financial and, eventually, "tech" sectors. "Dollar hegemony" and other policy regimes of international finance helped put control of this worldwide transition in the hands of U.S. and other Western capital.[56]

### *C. The "Modern Era"*

With the approach of the new millennium, U.S. labor power continued to decline, and firms further disinvested from the labor process.[57] As firms pulled back from earlier commitments to workers (e.g., in benefits like pensions and health insurance plans), organized labor was poorly positioned to resist such losses.[58] Other worker safety nets were weakened through reforms to public assistance bureaucracies – in particular the welfare "work incentive" adjustments of the Reagan and Clinton presidencies.[59] The car-for-hire sector, like much of the U.S. economy set apart from "white-collar" service positions, limped along relative to its post-war heyday. Workers in the 1980s and '90s were thus subject to an increasing "precaritization" – a broad downgrade in the material standards and personal securities that had become normalized in the postwar era.[60] These shifts included a heightened emphasis on punitive measures in state institutions, particularly its welfare

administrations and policing apparatuses. Amplifying existent racial socioeconomic inequalities, such changes disproportionately destabilized minority communities, and Black households especially.[61]

Many U.S. residents were partially numbed to these declines as a result of continued advances in financialization. This process, encouraged by communications technology developments, pulled larger and larger shares of U.S. wealth into financial markets.[62] Expanding the availability of credit was a central component of this shift. Legions of consumers papered over material declines through augmented reliance on loans, with household debt ballooning.[63] Minority residents, disproportionately burdened by the economy's fall from its postwar acme, were especially targeted by unscrupulous lenders.[64] Thus, with the housing sector meltdown and its ignition of the 2008 financial crisis, Black and Latino families stood out from a generally decimated "middle class" by suffering the most acute material loss.[65] The recession's differential impacts on men and women are complex: the gendered nature of sector-specific employment, the relationship between labor demand and the gender wage gap, and the gendered dynamics of childcare and domestic work were all important mediators of the recession's effects.[66] Evidence is clearer in the case of single mothers and minority women, who were especially destabilized by the recession and subsequent "austerity" policies.[67]

By many popular metrics, the U.S. experienced an economic recovery in the post-crisis years – uninterrupted through the 2010s until COVID-19's 2020 arrival.[68] However, other accounts suggest that workers have not made a genuine return to pre-crisis levels of stability; rather, public and private sectors have both institutionalized the ambient precarity of the 2008 crisis into their organizational structures.[69] In the face of rising costs of living –

but absent the easy credit opportunities of the early 2000s – U.S. workers have been increasingly pressured to find new means of staving off their material decline.[70]

### *D. A Solution in Ride-Share*

Ride-share work has been embraced by a diverse labor pool, with driver numbers growing massively since the sector's beginnings.[71] Its ranks are drawn from the broad socioeconomic bloc of those materially secure enough to finance entry into ride-share – but sufficiently insecure as to render ride-share wages meaningful. Costs of entry notwithstanding, the ride-share sector is structured to encourage an abundant labor supply. With no imposition of weekly hour minimums, ride-share work can constitute a viable wage-earning opportunity for those whose available labor capacity is too modest, too irregular, or otherwise too far outside the requirements of typical labor market positions.[72]

Accordingly, many enter into ride-share as part-time drivers, supplementing primary income sources (e.g., other jobs, social security payments, student loans, etc.) with these secondary ride-share wages.[73] Some, including unemployed job-seekers, turn to ride-share as a "short-term solution to buffer consumption" – a stop-gap measure intended to stave off the destabilizing effects of some material loss.[74] In contrast, others devote themselves to ride-share labor full-time, often bouncing across popular platforms and exceeding a 40-hour work week.[75] Driver surveys suggest that "freedom" and "flexibility" are common draws to the sector for both part- and full-time workers; many consider themselves engaged in an entrepreneurial endeavor.[76] Respondents are often aligned in viewing ride-share wages as a material stabilizer – though definitions of this "stability" (e.g., paying rent or utilities versus financing a luxury expenditure) vary across drivers.[77]

In addition to labor supply heterogeneity, drivers also carry different material burdens when entering into and sustaining their ride-share work. For example, all drivers are obliged to procure their own firm-approved automobile. A subset of prospective drivers will already possess a vehicle, along with the necessary credentials (e.g., proof of insurance) to drive legally. In this way, some individuals take on few (if any) new material investments to start the flow of ride-share wages. By contrast, other would-be drivers must make significant financial commitments to reach that stage of readiness. Those without vehicles often engage in car rental agreements or purchase automobiles outright. For example, a 2018 report for the New York City Taxicab and Limousine Commission found that eighty percent of app-based ride-share drivers newly acquired a vehicle for use in their driving labor.[78]

Although the ride-share sector is clearly in competition with taxicabs, not all of ride-share's market gains are the result of "poaching" erstwhile taxi clients. Rather, the demand for all types of car-for-hire services has increased in the years since ride-share's inception.[79] At least some of this uptick relates to recent demographic and infrastructure trends: in general, neither rural nor urban infrastructure development has kept apace with rising transit demand. As "the speed of travel [in personal automobiles and public transportation] … [decreases], the experience of drivers and riders [becomes] worse," and the relative attractiveness of ride-share or taxicab services may increase.[80]

## III. The Ride-Share Labor Process

Popular ride-share firms like Uber and Lyft are composed of operations that extend beyond the activity of car-for-hire transport itself. Public relations, investor solicitation, engineering developments beyond core app functionality – these are financed by passenger

fares as well as resources external to the labor process. As ride-share rapidly expanded, buoyed by such private financing and eventually IPOs, some analysts felt that, paradoxically, the "industry… [had] yet to show a profit."[81] Firm leadership has not been insensitive to such ambiguities, with divergent notions of organizational "mission" and opinions on future business strategy.[82] Ultimately, in spite of their substantial market valuations, there persists some generalized uncertainty as to the "meaning" and "worth" of organizations like Uber and Lyft.

For drivers in these firms, however, there is far less abstraction: the bodies exist as rule-setting entities. Ride-share firms establish the protocol by which prospective drivers enter into the labor pool, the rules by which they work within it, and the conditions by which they may be forced to exit. Firms decide the portion of fares that accrue to drivers, and also design the app-based and bureaucratic systems to which they are subject. Critically, this firm-worker relationship is not mediated by any formal bodies of organized driver labor: although the source of much dispute, ride-share drivers are recognized by the National Labor Review Board (NLRB) as "contractors".[83] Among other distinctions from the title of "employee", this designation severely curtails the legal protections on collective bargaining and other rights essential to union activities.[84]

At the heart of the ride-share labor process is a GPS-based matching system (programmed into a smartphone application) by which drivers connect to potential passengers. In navigating to their passengers' destinations, drivers make use of in-app mapping software, third-party applications, or personal roadway knowledge.[85] The ride-share application serves as a digital meter and automatically, electronically charges the fare to passengers – a percentage of which is accrued by drivers in a commission-based system.[86] In

general, ride-share applications also allow passengers to tip drivers sometime after the car-for-hire service has ended.[87]

Enmeshed in this framework are two data-gathering systems, the metrics of which have critical importance for associated ride-share laborers. The less consequential of the two is the "acceptance rating", which is an indicator of the proportion of ride requests a driver chooses to accept. In the past, low acceptance ratings could have resulted in ride-share firms locking drivers out of the application (effectively, firing them). The most popular firms now use acceptance rates to determine eligibility for various preferred driver statuses, membership to which carries material rewards (e.g., car maintenance discounts, college tuition reimbursement, etc.) and other perks.[88]

Discrimination of minority passengers is a well-documented phenomenon within U.S. car-for-hire service history.[89] In the taxi sector, Black Americans in particular have been disproportionately refused service by drivers on the grounds that their destinations are overly "dangerous", among other cited concerns.[90] Ride-share has a mixed relationship with destination-based discrimination. Uber, for example, formerly imposed "blind" acceptance standards, in which drivers were not provided prospective fares' destination information prior to their acceptance decision.[91] However, in some large markets like California, such information is now shared with drivers pre-acceptance, arguably making destination-based discrimination feasible.[92] At least prior to this rule repeal, evidence from that state suggested ride-share's "acceptance rating" metric was associated with significantly lower rates of racially-motivated service refusal.[93]

By contrast, critics of ride-share's acceptance rating system describe the feature as a corrective tool deployed against drivers – reducing discrimination for passengers by

eliminating drivers' option to exercise discretion.[94] Car-for-hire service provision is, in fact, a more dangerous occupation than most: the murder rate for taxi drivers, for example, far exceeds comparable statistics for police officers.[95] Sexual assault of ride-share drivers by their passengers is likewise a real occurrence and a source of preoccupation among a number of female drivers.[96] Contending with the acceptance rating system, ride-share drivers are thus incentivized to either subdue their preference to ever refuse a fare, or constrain their driving hours and locations to those where they are least likely to be so inclined.[97]

Compared to the "acceptance rating", the "star rating" system has much greater import for driver labor outcomes. At the conclusion of every trip, ride-share applications prompt customer passengers to approximate the quality of their trip by providing a rating on a scale of 1-5 "stars". After completing a minimum number of trips, drivers are then assigned an overall star rating corresponding to their average score across all passenger evaluations. Unlike acceptance ratings, adjusted by firms to be less consequential for drivers, the practice of setting "deactivation" star-rating thresholds has gone largely unchanged over time.[98] As will be discussed at length in this thesis, the feature thus creates a deeply influential material and psychological incentive structure for drivers, modulated by demographic context.

A final, overarching characteristic of app-based ride-share production is the allocation of responsibility onto drivers – not the ride-share firm – to secure all necessary material inputs of production (e.g., automobile, smartphone, gasoline) and cover all licensing-related (e.g., registration, auto insurance) and upkeep (e.g., car maintenance, interior cleaning) expenses. Ride-share firms set additional policies stipulating certain mechanical and aesthetic qualities a driver's automobile must – and must not – possess. Furthermore, prospective drivers are subject to background checks by the firm, rendering them ineligible if their

histories include past legal convictions, violations either driving-related (e.g., DUIs) or driving-unrelated (e.g., drug offenses).[99]

### *A. Material Investments of Ride-Share Laborers – Entry and Exit Barriers*

Though not omnipresent, "medallion systems" have been a feature of some of the largest urban taxicab markets in the United States. In cities like New York, Chicago, and San Francisco, taxi drivers were historically mandated by law to possess a medallion (either owned outright or rented through some arrangement with an owner) before purveying transport services in that jurisdiction. With a limited number of medallions available for purchase, such programs have had the effect of limiting the supply of taxicabs in a given city while serving as a revenue-raising strategy for the issuing agency – and also a target of third-party investment.[100]

In the early years of the new millennium these medallions became increasingly notorious entry barriers to taxicab labor, their prices reaching dramatic heights – up to 1.2 million USD in New York, for example – before crashing in the late 2010s.[101] Financial speculation by non-cabbies contributed to that rise, while the ascension of app-based ride-share (and with it, a diminished long-term perception of the taxi sector's profitability) helped bring about the subsequent fall. In some cities, relatively low-income immigrants made up significant minorities or outright majorities of local medallion investors. To the misfortune of these and other drivers who took out costly loans to pursue their labor, many ultimately found themselves in material crisis.[102] This upheaval in the medallion market may have accelerated the rate at which taxicabs ceded car-for-hire sector preeminence to ride-share.[103]

Eschewing medallion systems is a point of public pride among ride-share firms; they celebrate the ostensible ease of sector entry for prospective drivers. Uber boasts that "anybody can drive… it's easy to get started"; the only pertinent question is whether hopefuls are "ready to make money?"[104] Firms have a clear interest in marketing ride-share labor as a low-hassle, highly accessible work opportunity. In consideration of medallion entry barriers at least, this is not entirely unreasonable: all else equal, absent medallion requirements, prospective car-for-hire drivers would face less costly entry barriers. Put differently, to start earning wages in a sector with low entry barriers relative to some other is to face less daunting material commitments – and may result in quicker labor pool entry. Certainly, compared to the entry barriers for taxi drivers at the height of medallion price inflation, the lower upfront costs of ride-share cast it as a far more accessible alternative.

Medallion systems notwithstanding, prospective ride-share laborers nonetheless face other materially burdensome entry requirements. The barriers they confront, like medallions for their cab-driving peers, serve as unavoidable financial obligations on the path towards earnings in the car-for-hire service sector. As with all material commitments, such outlays carry the threat of loss – the risk that, in addition to the closing of a wage-earning opportunity, temporary or permanent income interruptions could result in supplementary financial damage. Stated differently, due to the disproportionate level of financial risk they assume, ride-share drivers experience greater incentive to sustain their labor as compared to similarly-compensated workers outside the car-for-hire sector that crossed no such entry barriers.

The relative magnitude of these entry expenditures, and the particular forms they take, vary from driver to driver according to their material circumstances. In all cases,

though, workers devote finite personal resources towards the generation and maintenance of their capacity to provide ride-share services. Critically, an individual driver's material commitment encompasses both what is physically required to supply car-for-hire services, as well as any expenditures they esteem – accurately or not – as necessary to secure high passenger ratings and sustain their employment.

### *B. Decentralized Automobile Fleets*

Ride-share is characterized by the lack of a firm-maintained automobile fleet, in contrast to those commonly overseen by modern taxicab firms. In the latter context, cars from such fleets are loaned out to taxicab drivers, typically at some fixed rate ("gate fee") for a set period of time – often the length of a daily shift and rarely more than a week. In most arrangements, the costs of physical upkeep and insurance for the cabs are the responsibility of the firm, while gas expenses fall to drivers. [105] In the case of a taxi's mechanical breakdown, drivers can solicit the services of in-house mechanics for necessary repairs (paid for by the firm), possibly making use of an alternate fleet vehicle.[106]

Absent firm-maintained fleets, in the case of ride-share each driver must instead secure a personal automobile that adheres to specifications laid out by the firm. Expenses related to insurance, licensing, registration, or other legal requirements are paid by drivers. Fuel costs, maintenance expenses, vehicle or personal damages – all are likewise the responsibility of ride-share drivers in prevailing labor arrangements. Naturally, these requirements function as material entry barriers for prospective ride-share drivers: those that are unable or unwilling to take on such expenses are thus preemptively filtered out of the labor pool.

Some prospective drivers will approach ride-share having met these standards, already in possession of a firm-approved vehicle and associated licensing. For such individuals, the decision to enter into ride-share is less a matter of making new material commitments and more a case of reallocating existing resources towards this new pursuit. If their total leisure and wage-earning driving hours remain unchanged, this merely constitutes a shift in expense accounting. If their total driving hours increase, they can be understood as incurring additional financial expenses (e.g., through vehicle depreciation and maintenance costs).

However, for many other laborers, ride-share entry barriers constitute wholly new material commitments. Theirs is not a mental process of re-associating existing expenditures with new activities, but an outright redrawing of their financial picture, including arrival at a new status quo of material outlay and risk. The particular magnitude of this risk depends on how aspects of a driver's material status (e.g., their asset wealth or income sources) relate to their investments in ride-share labor. The specific dimensions of those investments, including not just their relative magnitude but the conditions to which they subject drivers, create meaningful contours within the ride-share labor experience.

### *C. Spectrum of Material Entry Barriers*

For drivers that are asset-poor, entry costs in general will naturally figure as relatively more burdensome; compared to their wealthier peers, any given expense is a proportionally greater outlay of their personal resources. In many cases these costs are not only relatively, but absolutely higher for asset-poor drivers, given their greater likelihood of being obliged to borrow (at interest) to finance such expenditures.[107] Certain would-be borrowers may not

obtain approval from a given lender on account of their financial history (e.g., credit score) being deemed unsatisfactory.[108] Even within the sub-pool of drivers that successfully take out loans, the asset-poorer persist in relative disadvantage, given their higher likelihood of facing less favorable borrowing terms.[109]

Regardless of how entry-requirement resources are gathered, ride-share prospects must choose from a variety of "market strategies" to satisfy their good or service needs. Among the car-bereft that opt to rent a vehicle instead of buying, for example, different options are available in their locales, each carrying slightly different terms. With rare exception (such as Uber's abandoned in-house leasing program "Xchange"), ride-share firms' role in this process is limited to encouraging drivers to link with external rental and leasing agencies.[110] Common rental agreement structures include month-to-month arrangements and longer-term commitments at slightly lower cost; the value of such regular payments, as with any initiation fee, varies positively with car "quality" (a subjective evaluation explored later in this paper).[111] Explicitly: many different vehicles that meet firm approval may be rented by prospective drivers according to their local markets; "higher quality" vehicles are associated with higher-value rental payments.

Drivers that rent or purchase automobiles for the purpose of entering into ride-share labor have made clear material commitments. Subtler investments may be demanded from those that are already car owners, resulting from specific vehicle requirements set by ride-share firms. Uber, for example, necessitates that drivers' cars pass inspection at firm-specified centers (at cost to the prospective worker) that enforce driver adherence to, among other requirements, certain superficial demands – including that the vehicle have "no

cosmetic damage" such as "torn seats… [or upholstery] stains". [112] Explicit signs of repair, like "different colored hoods/doors", are likewise prohibited.[113]

The decentralization of the ride-share automobile fleet places material costs and risks on drivers that, in more centralized car-for-hire organizational contexts, have historically fallen to firms.[114] As a result, a fundamental heterogeneity is built into the ride-share production process. Because each driver must surmount material entry barriers, the relative richness or poorness of their individual material circumstances will characterize the financial strains of their entry investments. In other words, since each driver has a different relationship with the prerequisite costs of ride-share labor, each necessarily develops a personalized connection to the means of production that constitute such outlays and make tangible the opportunity of ride-share wages.

### *D. Material Demands of the Ongoing Labor Process*

Any driver that allots funds towards meeting the vehicle requirements of ride-share firms has made a material investment in their labor. As discussed, the details of that financial commitment vary widely, but all drivers make such expenditures in the hopes their investment will be beyond recouped. In a sense, the material stakes put down in the production process encourage drivers to adopt a profit-oriented perspective towards their ride-share work. Certainly, wages alone are an incomplete indicator of a driver's gains from their labor: it is the net of what drivers earn in pay and what they sacrifice in production expenditures that determines the financial impact of their ride-share work.

Through this investment of personal capital into the means of production – in what is ultimately a wage-labor context – ride-share drivers demonstrate they are not clean analogues

to typical U.S. wage-earners. And while they similarly lack control over production revenues, ride-share drivers are distinguished from the classic "proletarian" of Marxist labor theory by their real ownership over *some* of the means of production. In certain ways they may best resemble participants in the "putting-out system" of cottage industries, where household producers secured and maintained their own tools for creation of a semi-artisanal product (the ultimate revenues of which were managed by others).[115] In relation to their vehicular means of production, then, ride-share drivers inhabit a somewhat confused state: their investment in and use of these tools can generate personal returns beyond their initial expenditures (i.e., they profit) – yet since their fare earnings are ultimately appropriated by the firms at a firm-set rate, drivers are simultaneously exploited in their labor as a matter of course. Drivers' automotive tools are thus engines of both alienation and *de*-alienation with respect to the surplus value their labor generates.

Amidst this contradiction, ride-share vehicles, as a depreciating means of production, induce a cyclical rejuvenation of driver-production bonds. Maintenance expenditures, for example, are necessary to sustain vehicle machinery. By paying those upkeep costs, drivers once again invest in their ride-share labor, adding fresh urgency to concerns of profit-maximization and introducing new material risk. One dimension of that risk is that such investments could turn to losses, like in the case of a vehicle-totaling accident. All machines eventually break down, and so it is inevitable that a driver's car will one day make a permanent exit from the road and from production. However, ride-share firms may also enforce an earlier departure than mechanically necessary; Uber, for example, mandates all driver vehicles be newer than 15 years old.[116] At any juncture of total automobile breakdown, drivers are confronted by the binary choice of making a substantial re-investment in their

ride-share production (i.e., acquiring a new vehicle), or else immediately turning aside the flow of ride-share wages.

Of course, drivers face demands to invest personal resources in their ride-share labor beyond occasions of vehicle repair or replacement. The legal necessities of licensing, insurance coverage, and other certifications all bear expiration dates and impose renewal costs, for example. More pervasively, across all these periodic expenses exist imperative day to day costs like those of gasoline and cleaning services, as well as the expense of any amenities drivers feel compelled to provide – such as any complimentary items (e.g., water, gum, candies).[117] Whether these costs are accounted for by driver purchases or by their own extra-ride-share labor (like in the case of self-administered cleaning), they are obliged to resolve such operational demands in order to sustain access to ride-share wages.

Practically speaking, the entry and operational expenditures of ride-share oblige drivers to accept a constant baseline of financial commitment to that production, punctuated by spikes of material pressure (e.g., sudden repair costs). In a sense, a portion of drivers' ride-share income must always circle back to the labor process that generated those wages. If these streams of re-investment should dry up or even slow, a driver's ride-share employment is placed in immediate jeopardy. Empty gas tanks must be refilled; flat tires must be replaced; soiled interiors must be reupholstered – and such tasks must all be completed before the next fare is accepted. Complicating the themes of freedom and independence emphasized in interviews with ride-share workers, drivers are intimately aware of this dynamic of wage inflows and investment outflows: "I have no choice [but to drive], I have a car loan"[118]; "[I drive because] the money was too good to pass up. We needed it"[119].

### *E. Temporal Dimensions of Ride-Share Investments*

Countless different combinations of economic actions can likewise bring an individual into a state of viable ride-share production. Depending on heterogeneity in their baseline asset endowment, or in the methods and terms of material acquisition available to them, every driver able to enter into ride-share ultimately possesses a unique portfolio of financial commitments that sustain their labor. As discussed, these vary from driver to driver – both in their general makeup as well as their relative financial onerousness. A critical factor distinguishing material investments, and the experience thereof, is their temporality.

Certainly, the time-relevant details of an expenditure are of great significance in determining its long-run average cost. As with other investments (e.g., homeownership), acquiring an automobile with some particular set of qualities via rental or lease will, averaged across time, usually figure as more expensive compared to outright purchase.[120] Admitting the possibility of loan financing introduces further time-dependent investment nuance, as the details of interest rates and other agreement terms become critical determinants of the final return on that expense. Notwithstanding the practical import of these "bottom-line" calculations, the temporal dimensions of an investment may have further implications for driver costs beyond expense accounting. Appreciating the subtleties of investment-related costs can be aided by first noting differences between production expenses that are more or less temporally-linked.

Some material outlays made by drivers are exhausted in proportion to their ride-share production. For example, gasoline is consumed only when their car engine is running. While the delineation made by ride-share firms between (paid) "fare" and (unpaid) "idle" time is a matter of some contention among drivers, the relationship between miles driven in ride-share

labor and fuel consumption is clearly positive.[121] In other words, gasoline is a production expenditure that accrues in some fixed proportion to the average wages earned by drivers during its consumption. The "bang per buck" of a gallon of gasoline – the return on that investment – is essentially static, set according to an automobile's fuel economy and the average fare-per-mile wage in a driver's area. Driver decisions of when and where to work have influence on that wage value, as do factors like "surge" / dynamic pricing (temporary increases in earnings per trip offered to drivers during high-demand periods).[122]

Among drivers making similar operational choices, however, one cannot hope to make a gasoline expenditure relatively more profitable by driving either more or fewer miles. In fact, maintenance expenses, the cost of interior and exterior cleaning, the price tag of restocking complimentary items – these are all material outlays that, while recurring with different regularities, have an essentially linear relationship with the miles / fares driven during ride-share labor. Some production-exhausted investments carry greater up-front costs than others, however, and can thus be seen as necessitating a greater "minimum commitment" of ride-share labor. For example, gasoline and car tires are both production-exhausted investments, but whereas the former could hypothetically (if inconveniently) occur on a close to per-ride basis, the latter could not happen so frequently without wasting resources. This is because a purchase of gasoline can be made in an amount that corresponds to the miles driven during an average fare; by contrast, a car tire is designed to maintain its quality for tens of thousands of miles. Thus, while filling a tank of gasoline effectively buys the "fuel inputs" corresponding to the production of few dozen ride-share trips, the purchase of a tire buys the "tire inputs" corresponding to the production of thousands of trips. Breaking from ride-share and shutting off the car engine, say, does not lower the potential

returns of a driver's production-exhausted investments – but to maximize the return of those investments may demand dramatically different total commitments of ride-share labor.

Other critical investments in the ride-share labor process, like insurance and registration fees, vehicle rental payments, or any interest on loans taken out to finance some ride-share expense – are not exhausted in relation to production itself (i.e., to miles driven / fares served / hours worked). Rather, they are "used up" as inputs in relation to the passage of time, spent laboring in ride-share or otherwise. Many expenditures on these types of investments are made on a monthly basis yet are situated as part of year-long or multi-year agreements (e.g., typical car leases). In contrast to the production-exhausted investments a driver is understood as owning in perpetuity, these "time-exhausted" investments ultimately secure only temporary conferrals of social privilege – to possess a rented vehicle as a "legally insured driver", for example. Similar to production-exhausted investments, however, time-exhausted investments vary in terms of "lifecycle" and the necessary "minimum commitment" drivers must make to maximize returns (e.g., vehicle registration is valid for a single year, paid up front).

The distinction between production- and time-exhausted material investments in ride-share carries deep implications for drivers and the incentives they face in their labor. At the core of this difference is the fact that the returns on production-exhausted investments are essentially *fixed* on a mile-to-mile basis; the returns on time-exhausted investments are *variable* and depend on driver productivity. In the ride-share context, however, the potential range of a driver's "efficiency" in completing a fare is narrow, bound as they are by mechanical limitations and traffic laws. Instead, the differences in driver productivity that inform the profitability of time-exhausted investments are based in the number of hours they

choose to labor during the lifecycle of such an investment. To drive more hours in that set timespan is to make a relatively larger return; to drive fewer hours is to decrease profitability.

Even if a driver does not make a conscious distinction between the "production-exhausted" and "time-exhausted" investments in their labor, there exists a fundamental (and accurate) understanding that, all else equal, devoting more hours to driving will make their ride-share enterprise more profitable; ride-share firms are aware of this dynamic and structure their software applications accordingly (e.g., with prompts, various bonuses, etc.).[123] The reverse side of this coin, the counter to the financial reward of laboring more, is the financial risk of laboring less – or suddenly not at all. To illustrate: should a ride-share driver suddenly find themselves incapacitated for a month, their production-exhausted investments (e.g., in gasoline or brake pads) have not lost value; they can translate towards just as many productive hours as before. Any time-sensitive investments for that month (e.g., an insurance payment), though, have converted into pure losses. Their potential value in productive hours was at its maximum the day of payment, falling each day thereafter.

In accordance with state laws, some ride-share firms impose limits on how many consecutive hours its drivers may be able to utilize their application; in California, for example, Uber requires an 8-hour off-app period for every 10 consecutive hours worked.[124] Nevertheless, since it is common for drivers to work for multiple competing firms, and since there apparently exists no pooling of driver activity records between firms, it is not clear that drivers confront any genuine constraint on their labor hour decision-making.[125] Rigid limitations or no, it would be humanly impossible for a ride-share driver to truly maximize the profitability of a time-sensitive production investment (this would require unceasing labor for the duration of its lifecycle). Self-sustenance requires that human beings eat, sleep,

practice hygiene, and otherwise adopt behaviors that physically and psychologically allow them to continue providing ride-share labor. Drivers with other jobs might naturally cite those working hours as similarly unavoidable obligations – likewise for the maintenance of critical social ties (though evidence suggests drivers accept different degrees of bond deterioration in the interest of their ride-share labor).[126]

Still, no matter how unreasonable "ideal" profit-maximizing behavior may be for drivers, it exists as such – a target that, if unhittable, still produces anxiety when missed: "I feel the pressure. As a single mom I have a lot of financial pressure, so I feel really pressured to just keep on driving… and I feel like I'm deteriorating."[127] However drivers' investments in their ride-share production may vary, and whatever absolute or relative financial disparities that may entail, they have in common the fact that "drive more" is the universal profit-maximizing stratagem. Every minute their car sits apart from ride-share labor it is idle machinery on a factory floor, accruing financial loss and rust.

### *F. Exit Barriers*

As discussed, any temporary pause in the provision of ride-share labor causes drivers' efforts to become less profitable, since the returns on any time-exhausted investment necessarily fall. If a driver stops providing ride-share labor permanently, the "balance sheet" of their production effectively freezes; gain or loss, the current return on their time-sensitive investments becomes ossified. In most cases it is impossible to dull any resulting financial damage through market resale (e.g., car insurance is generally not transferable between individuals). The few instances where this is technically possible, such as breaking a lease agreement, are still characterized by significant expense and effort. Similarly, even

production-exhausted investments, while technically retaining their value in the ride-share context, may thus lose worth to ex-drivers since they can no longer realize that potential through ride-share labor. At any rate, few of these investments are suitable for resale, and essentially none could be expected to recoup their purchase price.

Exit from ride-share labor thus entails, at best, foregone personal profit, but can easily result in significant material loss depending on the timing of one's investments. The extent of a driver's risk is proportional to the magnitude of their total personal investment in ride-share labor, and how those outlays correspond to their broader financial context. Relatively poorer drivers (disproportionately obliged to make new investments for the sake of ride-share labor) stand to incur greater exit-induced losses compared to more modestly-invested peers. Because such investments constitute a greater share of their personal wealth, their loss is likewise a greater threat to overall material stability.

Essentially, once surmounted, entry barriers immediately transform into exit barriers for ride-share drivers. The financial demands of entry necessarily "price out" any otherwise interested parties that consider the requisite investments untenable. Those that do undertake such investments in ride-share production join a deeply heterogeneous labor pool – diverse in terms of their demographic makeup, their devotion of time to ride-share production, and their strategies to satisfy the material necessities of that labor. In consideration of the varied dynamics of those requisite labor process investments, it is clear that while drivers are alike in facing systemic incentives to provide additional labor hours, the risk associated with a sudden cessation of those hours is unique across workers. Ultimately, drivers obliged to invest a relatively greater share of their personal resources to sustain their ride-share work are likely to suffer the greatest degree of financial destabilization in the wake of that wage-

stream's collapse. Active ride-share drivers thus inhabit wide-ranging contexts of precarity regarding the potential losses from sector exit.

## IV. Ratings

On the most popular ride-share applications, consumer interactions with driver "star ratings" are somewhat peripheral to the actual transportation services they receive. Before a user's ride begins, the fare-accepting driver's rating and name appear on their smartphone screens.[128] (The user may opt to "cancel" the fare request at this point). Once the user's ride has ended, their applications prompt them to contribute to their driver's star average by providing a rating of their own. By design, consumers of ride-share services will only ever encounter drivers whose overall ratings cluster near the top of the scale. If a user should provide a sub-5-star rating they may be obliged to choose one of several possible reasons (or "other") in a drop-down menu.[129] Otherwise, they are only ever urged: "rate your [trip]!"[130]

Given this user-facing setup of ride-share applications, a consumer might rationally infer that the star rating is a relatively insignificant component of the process – much to drivers' documented frustration.[131] From the latter's perspective, these passenger ratings carry a deep significance to their labor, meaningfully influencing their choices of how to perform their ride-share services. The most direct function of such ratings is that they create a driver-associated metric to which ride-share firms stake out a "deactivation threshold." These thresholds are specific ratings values that, while varying somewhat between ride-share markets, are typically well in excess of 4 stars. When drivers agree to the "contractor" terms laid out by ride-share firms, they consent to give those firms the legal right to deactivate

them (i.e., prohibit application access – fire them, practically speaking) in the event they possess sub-threshold ratings.

This consequence for drivers may be noted, if obliquely, when application users accept the terms of use for ride-share applications. Underneath a cartoon banner of a hyper-diverse assortment of ostensible drivers / passengers, Uber exhorts users to "Help us change the way the world moves for the better," requiring passengers to "Treat others with respect" and "Report if anything's wrong", with an "I accept" icon below.[132] If a user does not rush to "accept" and instead decides to scroll down, revealing erstwhile hidden text, they can read "Any Uber app user whose rating falls below a certain threshold can lose access to their account". This warning, amidst the aforementioned commitments to a generalized social justice, appears under a heading that entreats users: "Help us hold everyone accountable."

Day-to-day user experiences on ride-share applications are unlikely to shed additional light on this ratings-induced consequence for drivers. As noted above, if an Uber application user responds to a "rate your [trip]!" prompt with a less-than perfect rating, they are encouraged by the application to supply additional information as to "what went wrong". Any kind of straightforward description of the rating system's overarching function, however, is lacking. Upon opening the application, a five-tap navigation sequence can bring a user to a "Rating a driver" informational page. Such users might read that "drivers with low ratings may lose access to the Uber app." They would not learn, however, what threshold constitutes a "low [i.e., app-deactivating rating]." Vague guidance is given by a primer that describes the two ends of the ratings spectrum: "5-stars means there were no issues… 1-star… typically means… there [was] a serious problem."[133] If users issuing 4-star ratings were to consider such marks as a statement of "almost perfect," they would likely be

surprised to learn that actual deactivation thresholds in most cities are around 4.6 for Uber (and similarly high for Lyft).[134] Whatever the communication intent of the passenger, a 4-star rating – filtered through the mechanics of the ride-share application – clearly signifies, "If you perform at this level more often than not, you will eventually lose your job."

Most ride-share drivers will never experience app deactivation due to a low rating score. However, all drivers are subject to the incentive structures created by this potential risk. Ride-share workers are conscious of these stakes and generally preoccupied with securing a 5-star rating from any given passenger.[135] Further complicating the picture, what it means to deliver a "5-star ride" is ultimately ill-defined and in practice may vary widely from user to user; it requires drivers to perpetually approximate a shifting target. Nevertheless, it is critical for drivers to achieve accuracy in this aim. Amidst the passenger biases that inform their evaluations of driver competence, a ride-share worker's success in sustaining their employment depends on the dexterity with which they direct their customer-pleasing emotional labor.

### *A. Ratings as Decentralization*

Ride-share firms commonly allude to their ratings systems as part and parcel of a broader prioritization of customer experience. Lyft, for example, asserts that the motivation behind this feature is to "ensure the safety and comfort of the Lyft community."[136] Setting aside any interrogation of how rating systems align with this aim, it is clear the deactivation threshold is intended to have practical effects on how drivers navigate the ride-share labor process.

Since the material stability of ride-share drivers is contingent on their sustaining high ratings, driver self-interest compels them to respond by vying for 5-stars during each fare.[137] The rating system amounts to a structure of incentives (e.g., the "carrot" of a high average rating and the job security "breathing room" it entails) and disincentives (e.g., the "stick" of low rating-induced deactivation). Significantly, these influences are not clearly constrained to any one area of driver performance; a driver is not rated merely on how well they navigated traffic, say, but on the overall "trip quality". Regardless of the accuracy of their perception of "5-star service", drivers are materially compelled to judge their potential actions as conducive or not to a 5-star rating, and to model their behavior accordingly.

Scholars have described this type of ratings-induced behavior modulation as the "quantification of discipline" in which "performance measures are… mobilized as panoptic technologies of surveillance."[138] While historically falling under the purview of a managerial stratum within firms, the tasks of worker performance monitoring and formal training have become increasingly digitized across labor market contexts.[139] In the circumstance of ride-share, such direct supervisory roles have been excised from the production process entirely. The behavioral influence they might have exercised is instead primarily driven by ratings systems and associated driver responses. Ride-share firms have thus been able to decentralize these monitoring and training processes (and their attendant costs) into the reactive relationship created between drivers and their rating averages. The ultimate financial and psychological burden this places on ride-share workers – like the ultimate burden of material investments in the labor process – varies in patterned ways across the driver pool.

### *B. Centralized (Formal & Informal) Training*

Earlier sections of this thesis explored how the decentralization of car fleets in ride-share (i.e., firms neither procure nor maintain such automobiles) translates to a displacement of labor process costs onto drivers. That discussion focused primarily on the costs embedded in the independent acquisition and upkeep of a firm-approved vehicle. However, the decentralization of the automobile fleet cannot be fully encapsulated by a redistribution of those mechanical costs from firms to drivers; this organizational tilt also erases the (unavoidably) communal space of the "fleet garage" and the benefits workers may have derived therein.

Certainly, amidst any prospective benefits, car-for-hire drivers have also borne costs as a result of belonging to more centralized organizational structures. Setting aside any potential per-fare wage differences between the two frameworks, the history of the (relatively more cost-centralized) taxi firm illustrates some potential pitfalls. For example, the existence of organizational "middlemen" – roles whose discretion allocates available resources – opens possibilities for consistently better or worse experiences for different types of drivers according to that (potentially biased) decision-making. Taxi drivers have frequently cited the necessity of providing unofficial payouts ("bribes") to dispatcher staff so as to avoid suboptimal vehicle or fare assignment.[140] Beyond the sort of material hierarchy this constitutes, fleet garages could also be spaces of interpersonal tension – not only between drivers and management, but between drivers themselves. In addition to the perennial dividing line of workplace seniority, conflicts could be inflamed by racial, ethnic, and other group prejudices.[141]

Despite their potential as sites of bias (a risk in any social space), fleet garages are also key locales in which drivers have obtained knowledge and other supports from their peers and/or supervisors. From critical guidance on local routes to strategies for dealing with unruly passengers, new arrivals could receive informal training from veteran drivers.[142] Even among taxi drivers that ultimately pursued independent vehicle and medallion ownership, fleet garages have served as "training [grounds]" and sites in which to build social networks with other car-for-hire laborers.[143] The informal training available in such communal spaces can have value for drivers: it may lead to greater per-fare remuneration (e.g., in the form of increased gratuities) or relatively lower per-fare costs (e.g., through sharing strategies to reduce mental and mechanical strains).

In terms of more structured, formal training, fleet-centralized taxicab firms have established various arrangements with driver labor. Some require that potential hires preemptively pass driver knowledge exams (e.g., municipality-regulated "hack tests") independently; others provide new hires with no-cost instruction on subjects ranging from defensive driving to the assistance of special-needs and elderly passengers.[144] The details of any formal training sequence – including its contents and potential costs to workers – largely depend on the particular contractual relationships between taxi drivers and their firms. Central to this relationship is a driver's official status as employee or contractor – with firms taking much more active roles in training "employee"-designated drivers.[145] What is relevant here, however, is not the variation in formal training that exists between taxicab firms, but the fact that a centralized organizational structure contributes to drivers sharing some common baseline of labor process-relevant skills and knowledge.

### *C. Decentralized (Formal & Informal) Training*

In the context of app-based ride-share there are no firm-maintained physical spaces in which drivers across some operational geography interact. The informal knowledge-sharing that could have taken place at such sites therefore does not occur, and formal training sessions (e.g., in "defensive driving" or customer service techniques) are not mandated. Excepting a handful of online advice pages and brief video guides, dominant ride-share firms leave driver training as a matter for workers to resolve independently. Absent formal training modules or any assured peer interaction by which new hires might "learn the ropes", drivers must set their own workplace education curricula.[146] To inform their choices of how to best pursue skill-development, these laborers must essentially construct a ride-share epistemology, inferring what factors of the car-for-hire experience produce qualitative distinctions in the mind of passengers, and how their behavior as drivers might modify those perceptions.[147] In place of the standardized guidance of firm-administered training or the "collective wisdom" of workplace peers, ride-share drivers find direction in the star rating system itself. Both the remunerative promise of high ratings and the material threat of low ones encourage drivers to generate and act upon theories of the nature of "5-star rides".

Ride-share drivers lack "resources provided by an organizational context" which, as discussed above, implies a lack of formal and informal training opportunities. It also means these workers do not encounter clearly demarcated managerial figures whose performance evaluations would, in other labor contexts, determine employment, compensation, and promotion outcomes.[148] By identifying managers and peers alike, centralized workplaces may offer laborers greater insight into the metrics that (ostensibly) inform such assessments of their work. In the absence of organizational signposts pointing towards common

definitions of "high-quality performance", ride-share laborers are drawn into "identity work": to orient themselves as drivers, each must make sense of their role in the labor process, ascribing meaning and logic to their engagements within it.[149] On a fare-by-fare basis, drivers must determine the characteristics of a "5-star" driver and arrange their performance accordingly.

This "independence" of self-direction is an aspect of ride-share labor that drivers not only recognize, but often cite as a point of pride – an emblem of entrepreneurial spirit.[150] However, in spite of the isolationist currents in their work, many drivers also make concerted efforts to create and participate in peer exchanges, predominantly in the spaces of existing social media platforms (e.g., Reddit forums or Facebook groups).[151] Drivers in these contexts solicit and dispense advice on "best-practices" for topics ranging from passenger management, to tax preparation, to the navigation of firm bureaucracies (e.g., when contesting an "unfair" star rating).[152] Perhaps encouraged by the pseudo- or outright anonymity of these online zones, drivers also engage in collective "venting" – cataloguing or otherwise airing grievances on any and all aspects of the ride-share labor experience.[153] From such an angle, these online spaces bear some resemblance to the physical zones of taxicab fleet garages, with both offering some degree of inter-worker exchange.

Whatever the broader "interactive potential" of such online communities, however, they are critically limited in their capacity to replicate the social opportunities of fleet garages. Part of this constraint is tied to the basic dynamics of communication on these platforms. For example, the anonymity of participants may serve as a double-edged sword, simultaneously encouraging honesty of expression while in other ways stunting the development of trust.[154] Open discourse in general may promote a sense of shared

experience, but genuine skill exchange is only likely to occur between drivers that have reached some level of confidence in one another's counsel.

A similarly two-sided feature, these social media spaces are, of course, not physically bound, allowing drivers to contribute to online exchange regardless of where they perform ride-share labor. This lack of fixed spatiality is a boon for drivers in small cities or rural areas who, unlike operators in large urban environments, are typically too small in number to support digital communities specific to their market. However, this overarching geographic ambiguity – including within city- or region-specific forums that cover especially large areas – may result in drivers doubting the relevance of others' contributions to their own labor circumstances. Such a dynamic contrasts with environments like fleet garages, whose spatial fixedness naturally encourages self-selection among drivers with overlapping areas of operation.

Outside of social media exchanges, there exist additional training resources that pointedly advertise their utility for drivers seeking to secure higher ratings or otherwise improve their labor outcomes. For example, a multitude of "ride-share experts" maintain blogs and YouTube channels with regularly-updated content on a range of topics pertaining to popular driver concerns. Oftentimes, these free services exist adjacent to "pay to play" online tutorials or publications.[155] In some cases, ride-share firms themselves have established business relationships with purveyors of priced training services. For example, Uber drivers deactivated due to low overall star-ratings may regain application access (effectively, become re-hired) if they purchase and complete certain third-party training modules.[156]

Although these formal and informal training opportunities differ insofar as their upfront costs to drivers, they are all uncompensated, "off-the-clock" pursuits. A driver's capacity to devote time to such trainings will naturally depend on their personal context of ride-share and extra-ride-share obligations. Moreover, fluid access to (or even awareness of) these resources is dependent on an easy familiarity with navigating online spaces – which, in general, favors the young and the English-speaking. Similarly, any priced training services are inherently cost-discriminating, and thus figure as relatively more accessible opportunities for wealthier drivers compared to their poorer counterparts.

### *D. Centralized Management*

Despite the advent of computing and internet technology, most economic enterprise occurs "on-site", where the inputs and labors of production are jointly activated at a particular location (e.g., a factory, hospital, or theater), within a given radius (e.g., grocery delivery), or on a spatially-linked network (e.g., shipping). The staffing structures associated with such activities typically feature some type of smaller managerial stratum that exercises authority in production decision-making over a substratum of more numerous, "rank-and-file" workers. This authority is most often exercised in-person but may be communicated by any number of remote means (e.g., telephone, radio, electronic message) and has significant consequences for more junior employees (e.g., the content of their work, their compensation). These managerial choices are typically reflective of broader organizational directives from top powers in the firm (e.g., owners, any shareholders) who may play little or no direct role in firm operations.

Such managerial oversight exists in taxicab companies, where driver laborers are subject to the decisions of (hierarchically) senior supervising staff. Historically, taxi drivers also interfaced with "dispatch" coordinators whose choices (e.g., in cab or fare assignment) could meaningfully influence labor conditions for a given worker. In reaction to the power wielded by dispatchers, some drivers have reported cultures of bribery aimed at securing more favorable assistance.[157] Contentious managerial decisions on wages and benefits frequently evoked organized responses from drivers, who confronted unpopular top-down decisions as a collective, antagonistic bloc. The organized driver groups active in these workplace conflicts varied over time in composition (within and across firms), cohesiveness, and relative influence on the taxicab sector.[158]

Conflicts between organized drivers and taxi firm management all possess an underlying dynamic of hierarchical struggle. The drivers and managers constitute two distinct organizational strata with clearly defined membership pools and labor process roles. In spite of meaningful differences according to demography and personal circumstance, taxi drivers share much in the way of a common labor experience, collectively subject to the decisions of a more highly compensated, less numerous managerial cadre. In this sense, the relatively "close quarters" of centralized production foster a type of transparency. Although taxi drivers pass only a small portion of their working hours in the communal spaces of fleet garages, the ensuing interactions are sufficient to build a common knowledge of managerial decision-making. Drivers are aware of the content and administrative source of policies regarding compensation, disciplinary measures, and other workplace conditions.[159]

### *E. Decentralized Management*

The absence of a fleet garage or other common space in ride-share not only inhibits inter-worker skill exchange, as discussed earlier, but social interaction more generally – between drivers and across the driver-manager divide. The latter relationships, beyond the lack of face-to-face communication, are warped further as a result of the sector's unique staffing structures. In certain respects, while drivers in ride-share are managed (e.g., they are disciplined, materially rewarded, etc.), they do not have "managers". Much of the communication a driver receives "from Lyft", for example, arrives on their smartphone screen as a result of algorithmically-driven processes. Software code establishes automated procedures by which certain driver events (e.g., "low" recent trip ratings) trigger particular stock messages to be sent from firm to worker. A possible sign of organizational self-consciousness over this algorithmic primacy, Uber assures users that in the event of app "deactivation" (worker suspension or termination), "people will always play a role".[160]

App deactivation may be induced by "low" star ratings, serious driver misconduct (e.g., criminal behavior), or passenger reports that a driver was "disrespectful" or "ignor[ed]" a "dashboard warning [e.g., a "check-engine"] light".[161] In any case, should a driver be compelled to contest their deactivation or otherwise discuss some matter with their ride-share employer, they are confronted by layers of digital machinery. For example, the first step for many drivers is to submit a "support ticket" that essentially places their work-related conflict in a queue for managerial attention.[162] Phone calls to firm support lines are frequently "answered" by "interactive voice response system[s]" that may or may not incorporate a live human.[163] Notably, managerial judgment in this "ticket"-driven process is dispensed by a

rotating set of employees; a driver does not speak to *their* (fixed) manager but to *a* (incident-specific, temporary) manager.

Driver interviews suggest that consternation with the ride-share support system (both its processes and outcomes) is a common sentiment.[164] At least part of this frustration is rooted in the fact that any apparent delays or inefficiencies in resolving an app-deactivation issue constitute genuine financial duress for drivers – their wage-streams frozen for the duration. Simultaneously, drivers' separation from a more concrete, centralized managerial apparatus limits the scope of confrontation with that structure. Absent a physical site of workplace social exchange, drivers face reduced opportunities to form a group identity – as workers jointly subject to managerial decisions, say. Ride-share drivers are likewise inhibited in their ability to identify (let alone rally in opposition to) representatives of the managerial stratum.[165]

One result of ride-share's ephemeral management structure is thus the displacement of worker-supervisor conflict. Drivers, lacking a static managerial target for any grievances, may be compelled to turn attention towards their passengers – whose performance evaluations (in star ratings and other feedback reports) are clearly impactful to their labor outcomes. Yet where managerial staff may be confronted by organized labor action as a means of shaping workplace conditions, this is not a viable strategy for drivers to adopt with passengers. The service work context dramatically constrains their behavior; drivers risk alienating passengers (and securing a low rating) if they are perceived as aggressively "fishing" for 5 stars. For some drivers chafing under ride-share's managerial system, this relative impotence is channeled into an enhanced customer-pleasing anxiety.[166]

The deemphasis on traditional management structures in ride-share – creating room for drivers to "be [their] own boss" – merges with the passenger star-rating system. This combination incentivizes drivers to become their own behavioral overseers. Driver interviews suggest that some rationalize this strain as testament to their entrepreneurial spirit and work ethic, whereas others find the dynamic grating. Any workplace resentments are dead-ended, however, by the union of these two labor process features. Together they function to channel driver grievances towards the more immediate, more *actionable* concern of customer satisfaction.[167]

## V. The Cost of 5-Star Ratings

It bears repeating that the star ratings applied to drivers are subjective assessments made by passengers, carried out after their ride-share transportation has ended. The ratings have no direct connection to ride metrics (e.g., trip duration, average speed, incidence of sudden starts or stops). Any relationship between "objective" ride characteristics and star rating is an indirect one, mediated by customer perception – including their conscious and unconscious associations with "high quality" ride-share service. Within this process, passengers make use of the material and personal conditions drivers bring to the fare experience, absorbing what their senses interpret as salient information.[168]

### *A. Consumer Evaluations*

Ride-share applications instruct passengers: "rate your trip" (i.e., "rate your [driver]"). This type of solicitation has become increasingly familiar to 21st century consumers: they are requested to evaluate an imprecisely-defined experience, using a crude

scale, with no apparent consequence for the rater (and perhaps only implied consequences for the rated). Amazon, Yelp, and Google, for example, are a near-ubiquitous presence for digitally-connected consumers. Like ride-share, each platform features a user-driven rating system out of five "stars". In contrast to ride-share, however, all three feature (lauded) products, vendors, and/or service providers that maintain star rating averages well below the deactivation thresholds for ride-share drivers.[169] Experience with these widely popular consumer platforms and their 5-star rating systems may naturally influence how an individual interfaces with the 5-star rating system in ride-share.

Regardless of any evaluative encroachment from other rating systems, a ride-share passenger could likely articulate some personal definition of a "high quality trip" or cite examples of "5-star" and lesser experiences. A great deal of sociological and psychological research suggests, however, that an individual's behaviors and perceptions do not comport neatly to rationalizations thereof. Instead, some scholars describe conscious life as a process of deference to our individual "declarative" and "nondeclarative culture[s]", that we are guided (knowingly and unknowingly) by value systems we have constructed through the course of our social experience.[170] In the context of passengers in ride-share, this suggests individuals arrive at ratings decisions through a process at least partially informed by emotional associations, not some stoic response to "objective truths" about the ride.

For drivers, this amorphous, individualized aspect of consumer evaluation has significant implications for the labor embodied in producing a "5-star" ride. Drivers must contend with the conscious preferences of their passengers, as well as their unconscious biases; securing a 5-star rating requires drivers adapt their behavior to best suit those criteria. In cases where passenger dispositions clash with some aspect of a driver's ride-share

performance (i.e., of a "high-quality" ride), drivers may need to exert relatively greater effort to attain 5 stars. Driver demography and their interrelated material circumstances are critical components of the "scene" they create each fare, subjected to the preferences of a new passenger audience.

### *B. Social Status and Ratings Capacity*

Ultimately, the labor embodied in consistent production of "5-star" ratings can be understood as the convergence of several factors. Cornerstone to them all is that drivers, both during and outside their ride-share labor hours, exist within broad, intersecting hierarchies of social status. The nature of one's position will vary according to wealth, race, gender, and other demographic characteristics. However, the social reality of such hierarchy is not reducible to a spectrum running from "privileged" to "underprivileged"; the impact of an individual's status will correspond to how their characteristics (as perceived by some observer) map to prevailing social sentiment towards those qualities.[171] A given characteristic may carry multifaceted (even contradictory) meanings with differential resonance across individuals. The cumulative social effect is that individuals construct competing notions of "demographic truth" (characteristic-value mappings) that vary in patterned ways between social blocs.

In the generic case of person-to-person evaluation it is highly likely each party – rater and rated – will inhabit unique social positions and possess unique value orientations. Depending on these particulars, different "scenes", "props", and "performances" may be imbued with different meanings. The same behavior by a given driver may carry distinct social weight in the perceptions of different passengers; a given passenger may esteem the

same behavior distinctly when carried out by different drivers. Thus, in producing a "high-quality" performance for a given evaluator, some actors will occupy social positions offering greater stylistic flexibility and inspiring a higher baseline of audience sympathy.[172]

Within any ride-share market's mix of driver and passenger pools, then, certain drivers will find themselves more or less advantageously positioned to create the "scene" of a 5-star trip. Certainly, perceptions and ride-share expectations vary across passengers. But since driver-passenger matching in a particular time and place is close to randomized, drivers working the same jurisdiction / shift will ultimately serve very similar sets of passengers in the long-run. Depending on how closely their individual service aligns with those passenger preferences, drivers may be obliged to expend more or less labor (i.e., in on-the-job effort or peripheral investments in ride-share) to secure a 5-star rating.

For example, holding all other details equal, a driver whose automobile is more mechanically blemished (e.g., has squeaky brakes) compared to their peers may find they need to compensate somehow (e.g., via more generous amenity provision) in order to avoid their relative car quality deficiency translating to a lower star rating average. Conversely, a driver whose demographic characteristics are perceived as more aligned with "safe", "pleasant", or "competent" service (i.e., as a result of passenger bias) may find that, compared to demographically-maligned drivers, they can sustain the same rating average in spite of shortcomings in other service areas.

### *C. Relative Costs of 5-Star Production (Material Status)*

Much discussion in the first half of this document relates to how driver material status can correspond to significantly different relationships with ride-share labor. In order to

achieve some specific material layout in their work – e.g., to drive a particular car, supply certain amenities, or outfit their person in a given way – drivers must shoulder material burdens of distinct weights. Among ride-share prospects, the relatively asset- and income-poor are more likely to find themselves obliged to take on new investments (e.g., renting a vehicle, performing a mechanical repair, or paying document registration fees) in order to secure firm consent to labor as a driver. Given the less favorable financial resources at their disposal, these necessary entry costs may be both proportionally and absolutely greater than expenditures made by their wealthier peers – and may create stronger labor supply incentives. As their material investment in ride-share production grows, drivers risk greater degrees of financial loss in the event of temporary or permanent app deactivation.

Income and wealth status is highly entwined with other dimensions of social hierarchy in no small part because of how material opportunity (including access to institutions) strongly correlates with social capital more broadly.[173] For example, the explicit racial hierarchy of U.S. slavery and Jim Crow, as well as the ostensibly "colorblind" War on Drugs, are prominent currents in an extensive national history of racialized wealth distribution – in which "proximity to Whiteness" is associated with higher, more secure financial status.[174] One outcome of racialized political and institutional development is that neighborhoods with smaller proportions of White residents are more poorly served by financial institutions (e.g., loan-issuing banks)[175]. Peer networks within these areas may be similarly less viable material supports compared to networks with members in wealthier zones. And, significantly, a racialized wealth distribution contributes to prevailing cultural associations between "Whiteness" and wealth, such that Whiteness – and objects or

behaviors that are perceived as "signaling" it – become relatively gilded in the popular imagination.[176]

The pattern of intersection between material and racial hierarchies is echoed in the relationship of wealth and nativity: the historical contingencies spurring migration to the U.S. have meant that immigrants as a whole tend to be less wealthy than their U.S.-born peers. Likewise, arrivals from Sub-Saharan Africa and Central America, for example, have less wealth than their European immigrant counterparts – with effects of "colorism" also active within such regional blocs.[177] Cutting across all these demographic categories is the factor of gender, where "male privilege" has historically included dramatic financial advantage.[178] Essentially, individuals in the U.S. that are more unambiguously "other" – perceived as being more distinct from a generally White, generally male, generally Anglo "norm" – have been historically marginalized. Such ostracization has, among other effects, limited lifetime accrual and intergenerational transfer of wealth, and abstractly devalued members of these groups through their perceived association with poverty.

And so, in addition to the tangible costs that poorer drivers must shoulder to enter into and sustain their ride-share labor, such workers are also more likely to bear reputational burdens that are demographically adjacent to wealth status. Any material investment these drivers may make in an attempt to recover this lost reputational ground will naturally compound aforementioned inequalities in the material burdens of ride-share.

### *D. Relative Costs of 5-Star Production (Racial Status)*

As discussed above, the intersection of race and wealth hierarchies suggests that, among potential drivers in U.S. markets, the average non-White individual will be less

advantageously positioned to cross the material entry barriers to ride-share. If these distributional trends carry into the pool of active drivers, non-Whites will likewise have fewer resources available to make investments in production (e.g., vehicle and amenity quality) that passengers may associate with a "5-star ride".

In a similar vein, as less wealthy demographics compared to U.S. Whites, Blacks and Latinos, for example, may encounter additional poverty-associated reputational damage – less associated on average with "high quality" service. Although Uber does not make trip data by driver and passenger race publicly available, researchers have used defensible proxies to model such racial dynamics. In a study on ride-share demographics and tipping behavior, authors found that drivers from zip code quintiles with the highest proportion of Black and Hispanic residents (i.e., most likely to be Black or Hispanic drivers) were less likely to be tipped at all, receiving just 83% of the tip value accrued by drivers from zip codes with the lowest quintiles of minority residency (i.e., most likely to be White drivers).[179]

Research on the service sector more broadly suggests that the racialized dimensions of workplace stress documented there could reasonably take root in the ride-share service context.[180] Admittedly, emotional labor is a universal phenomenon among service workers: the provision of "good service" entails an ongoing effort of empathy (e.g., to detect customer preferences) and restraint (e.g., of personal inclinations running counter to customer preferences). Drivers of all demographic backgrounds engage in such labor during their ride-share work, exerting effort to cultivate a "pleasant" experience for passengers conducive to a 5-star rating.[181]

However, studies of ride-share drivers echo the findings of other service sector research, suggesting that the strain of producing a "pleasant" atmosphere varies across

workers and along racial lines. Drivers frequently cite an obligation to tolerate rudeness from ride-share passengers, and note this can include withstanding racially insensitive language.[182] For example, non-White drivers operating for Uber in a variety of markets have described their being subject to racial slurs and xenophobic epithets.[183] Drivers are not insensible to the racialized implications of this labor process feature: "racism… [is] probably THE best argument against the rating system there is"; "Of course the crowd-sourced rating system is racist."[184]

For their part, ride-share firms explicitly decry such discriminatory passenger behavior. They maintain nominal policies that ban offending passengers from their applications.[185] In instances where drivers receive racial or other abuse from passengers, however, they face a conundrum: asserting their dignity as they see fit could shatter the "pleasant" scene and result in their receiving a low star rating. Even if drivers are aware that official firm policy is to excise "retaliatory" low ratings, they are cognizant that pursuing this route entails navigating the firm's "driver support" bureaucracy, and that there may be no guarantee of a satisfactory (e.g., non-rating damaging) resolution.

Research on human stress response has made the effects of this predicament more tangible. For example, the stress hormone Cortisol is increasingly understood as playing a meaningful role in raising vulnerability to a variety of bodily diseases and psychological maladies.[186] Studies have demonstrated that incidents of racial discrimination can precipitate a rise in Cortisol levels, but that similar increases are also associated with the more general experience of being under social scrutiny – especially when one is evaluated on tasks that contain elements of "uncontrollability".[187] While studies of ride-share workers have not measured Cortisol production in particular, driver interviews leave little doubt of worker

preoccupation with the ratings process: "[ratings are] a major stress factor… riders [can be]… very judgmental".[188] The documented occurrence of racialized passenger interactions implies that drivers of color may be uniquely vulnerable to these types of physiological stress responses. Among other costs of "5-star" production, then, drivers of color may be obliged to carry greater health burdens compared to their similarly-operating, White peers.

### *E. Relative Costs of 5-Star Production (Gender Status)*

Some research into ride-share tipping has suggested that female drivers – especially younger ones – may enjoy a gratuity premium relative to their male counterparts.[189] This finding is complemented by other investigations into the gendered dimensions of service work, which observe that women are frequently seen as being more appropriately "suited" to that type of labor in comparison to men.[190] In other words, stereotypes as to the "feminine" nature of service work could mean that women drivers more easily mesh with passenger conceptions of "5-star quality" ride-share service. Such a straightforward picture is complicated by additional research that – in spite of their "natural" service work bona fides – women may be perceived as less competent drivers, with this sentiment becoming amplified in the case of any trip issues (e.g., a failure in navigation – due to either GPS or human error). [191]

Whatever elevated tipping conditions female drivers may experience, there persists a gendered wage-gap in ride-share. The basis of such a gap may not be immediately clear given the inapplicability of many typical explanations aligned with more traditional organizational structures. For example, managerial discrimination (e.g., in hiring and

promotion decisions) or other effects of male-dominated workplaces do not map well to the ride-share labor process. Instead, research suggests this ride-share "gender penalty" is primarily rooted in driver choice of working hours, where women drivers disproportionately eschew more remunerative "bar-hour" driving. Motivations may include gendered time constraints (e.g., a greater likelihood of evening or nighttime childcare responsibilities) as well as safety concerns, including an aversion to intoxicated passengers.[192]

Indeed, ride-share workers of all genders report experiences of sexual harassment, but interviews with female drivers suggest a greater fear of outright assault.[193] Absent formal driver self-defense training firms might have provided in a more cost-centralized organizational context, some female drivers engage in "defensive labor" for their physical and emotional protection. Such labor includes supplementary material investments in their ride-share production, including the installation of in-vehicle cameras and the procurement of weapons like pepper-spray.[194] Other drivers express concern, however, that adopting such measures would upset passengers or otherwise disrupt the production of a "safe" ride-share scene, resulting in lower star ratings.[195] And so, as with drivers of color that may face racialized remarks from passengers, so too do female drivers encounter a conflict between two forms of self-preservation – that of their mental and physical health on one side, and that of their material stability on the other.

### *F. Relative Costs of 5-Star Production (Age, Immigration, and Disability)*

While dissimilar in many respects, the broad demographic categories of "older individuals", "immigrants", and "the disabled" share a number of overlapping constraints in the ride-share context. Studies suggest that these groups may be at a relatively heightened

risk of being perceived by passengers as "out of their depth" in their provision of ride-share labor. However accurate or not for a given driver, popular stereotypes associated with these groups – e.g., unfamiliarity with local roadways or the English language for recent immigrants; difficulty with using digital platforms and other technology for older drivers – represent a reputational burden. [196] In the event of issues during a trip (e.g., a smartphone glitch or mapping software mis-routing), drivers in these categories may be more often perceived as personally at fault compared to drivers not belonging to those groups, suffering relatively lower star ratings as a result.

Drivers that do face some sort of personal challenge with technology use – particularly the internet – confront additional, indirect, ratings-based difficulties. Whether the result of English language challenges, digital inexperience, or other accessibility issues, any above-average trouble with computer use presents a barrier between drivers and informal online training resources. These hurdles mean the costs in time and energy of successfully accessing driver forums or YouTube tutorial videos, say, may be relatively increased, while the skill-improving benefit of such resources may be relatively diminished.

As a result of reduced access to informal training, or out of concerns over passenger bias, drivers in these groups may experience a relatively higher baseline of stress in their labor. Deaf drivers, for example, report anxiety over disclosing their disability status to passengers, citing incidents where they felt doing so made them targets of passenger frustration and derision.[197] Similarly, certain driver behaviors that passengers may associate with "high-quality" service, such as making casual conversation during the trip, may be disproportionately challenging for English-learning or hearing-impaired drivers.

Finally, for elderly and disabled drivers in particular, research illustrates that the physical labor of driving – while taxing to some degree for all ride-share workers – is particularly acute for these groups.[198] In comparison, young and able-bodied drivers may be little-burdened by the action of loading a passenger's luggage into a car, for example. However, other less physically able drivers must choose to either suffer the above-average bodily strain of such labor, or else hope that passenger sympathy will provide a consistent bulwark against sub-optimal ratings.[199]

### *G. Replicating Social Hierarchies*

In each of the brief examinations above, it can be seen that social status – writ large, but also across specific hierarchies – has a documented influence on the labor experiences of ride-share drivers, providing advantages in some cases and disadvantages in others. While no individual's ride-share outcomes exist as some formulaic determination, there are nevertheless real patterns across demographic lines that inform the average, relative costs in money and labor that are necessary to consistently produce "5-star" (i.e., ride-share employment-sustaining) ratings.

Critically, though, the demographic advantages and disadvantages described here are more than inevitable symptoms of interpersonal exchange in the modern U.S. social landscape. While not the author of these hierarchies, the structural features of ride-share production articulate them in ways that are unique to standard labor market arrangements. The ratings system in particular, with the inevitable role played by status and social mores in coloring assessments of a person's competency, is a potent mechanism by which these broader social hierarchies bleed into the ride-share context.

The star-ratings feature is nevertheless only a prominent symptom of a larger organizational tilt. Cost and risk decentralization, the transfer of these obligations from firms onto driver laborers, is the ultimate impetus behind this ratings system: it exists as a means of filling a managerial and training void that, in other car-for-hire labor contexts (e.g., the earlier taxi sector), had been the purview of firms and their budgetary responsibility. Ride-share drivers must instead turn to the "free market" for solutions to their labor process problems.

In their engagement with market forces, drivers must naturally contend with an array of intersecting social dynamics that inform their abilities to navigate that realm successfully. And thus, despite the ostensible "neutrality" of a hands-off approach in satisfying labor process demands – including the elimination of entire tiers of managerial staff whose decisions might have been vehicles of personal bias – driver experiences in app-based ride-share are ultimately subject to the familiar currents of wealth and social hierarchies.[200] Indeed, the labor process input and decision-making vacuums created by the retreat of the firm are instantaneously filled by the logic of the market. All drivers, regardless of their demographic circumstances, are nominally free to participate in ride-share labor in whatever operational manner they prefer – but the costs and benefits of those choices are inextricably linked to facets of social identity.

## VI. Conclusion

This thesis aimed to synthesize an array of ride-share-focused research by weaving their findings around a central narrative of organizational cost displacement. Specifically, it

explores the ways in which the material and personal risks of the ride-share labor process are shouldered by drivers, and how those firm-worker relationships are situated within a broader history of economic neoliberalism. A review of that history in the U.S. car-for-hire sector illustrates that taxi firm trajectories over the past half-century were characterized by a relative weakening in drivers' collective hold on revenues and workplace benefits. This decline manifested in slowed or reversed wage growth, the discontinuation of pensions and health insurance plans, and other changes that disfavored drivers (e.g., shifts from commission to leasing systems). These losses occurred in a negative feedback loop with organized labor power: weakened driver unions were less able to resist these developments, and such changes further enervated the unions. Notwithstanding medallion market speculation, however, by the 21st century taxi drivers had far less material "fat" that could still be "trimmed" for management's benefit.

App-based ride-share uses novel applications of technology to create a distinct organizational structure where, relative to the taxi sub-sector, the firm plays an even more detached role in facilitating the labor process – materially or otherwise. Ride-share's extremely rapid ascent in the car-for-hire sector is rooted in its shedding those labor process responsibilities historically borne by the firm, such as automobile procurement and maintenance. Naturally, where the ride-share firm has (relative to taxi models) stepped back from the labor process, responsibility for those tasks falls to drivers. In other words, firm departure leaves different voids in the labor process; each worker must find a way to fill those gaps. In their search for solutions, many drivers turn to traditional market interactions (e.g., the leasing of an automobile) and informal ones (e.g., consumption of skill-development videos on social media).

Whatever these choices or their efficacies, every laboring driver is also subject to a series of firm-administered algorithmic systems. Taking forms like "star ratings" or pseudo-automated "driver support" procedures, these features likewise create "problems" for drivers to somehow resolve. However, these algorithmically-generated issues are not straightforward ones: financial limits aside, "buy a car" is a task marked by a clear strategy and indication of success; by contrast, "secure a 5-star rating" is a far more ambiguous prospect, where even nominal success may not illuminate the steps that were ultimately necessary to achieve it. In all cases, where ride-share firms' "hands-off" approach to the labor process creates work for drivers, their ensuing efforts are modulated by hierarchies of material privilege and social status.

At these critical junctures in the labor process, an otherwise similar organizational structure where firms carried a higher share of costs would likely lead to greater homogeneity of worker outcomes. For example, a firm-maintained automobile fleet – though manipulable by the biases of dispatchers and other managers – constitutes a more standardized driver relationship with vehicle costs as compared to the independent procurement system in ride-share. By outsourcing costs onto drivers, firms open a series of channels by which heterogeneity of experience floods in. Ride-share drivers, according to their particular social circumstances, will be differentially well-positioned to "successfully resolve" the labor process problems thus created; similarly, producing the same resolution might incur different strains across workers. This distribution of intersecting advantage and disadvantage pushes ride-share drivers towards substantially different relationships with the labor process. The economic risk of suddenly interrupted ride-share wages varies between drivers, for example, as does the permeability of the line separating ride-share from leisure hours. Prevailing social

hierarchies – in terms of material resources, but also in the sense of real and perceived competencies – meaningfully influence the labor outcomes of ride-share drivers. Moreover, the features of the ride-share labor process serve to amplify these dimensions of social stratification.

An explicit statement may be warranted that the goal of this thesis is not to imply some pat moral judgment – that the app-based ride-share sector is "bad", for example, or that the experiences of its drivers can be flattened into the term "exploited". To the contrary, if this exploration can be said to make some commentary on morality, it is that the ethical orientation of individuals on the Uber managerial board, say, becomes less relevant to driver outcomes the more labor process costs are fixed as worker responsibilities. Instead, questions of car-for-hire service provision become increasingly answered by a "free market" whose contours are anything but demographically neutral.

In spite of its many apparent novelties, the ride-share labor process and workers' relation to it should be understood as reflective of long-running economic trends. The sub-sector continues an embrace of neoliberal organizational logic, adapting it to the technological tools and socioeconomic conditions of the digital age. Further research on the phenomenon of ride-share could include analyzing how it perpetuates (or deviates from) prevailing dynamics in areas outside of the labor process itself. For example, many scholars have explored ride-share's "disruption" of the legal sphere, but less research has been carried out on Uber and Lyft's navigation of the broader political ecosystem, like in the context of California's Proposition 22 ballot initiative (e.g., relationships with local- and state-level bureaucrats, media and NGO outreach, advocacy to drivers, users, and others). Similarly, while driver and passenger interviews suggest information asymmetries on awareness of the

consequences of ride-share features (e.g., the star rating system), few studies have assessed how passenger characteristics relate to knowledge of and interaction with such features. Potential also exists to measure how passenger behavior in the digital economy outside of ride-share (e.g., experiences with other digital service providers or rating systems) relates to their driver-facing behavior in ride-share.

# Works Cited

[1] Grinsell, Leslie V. 1957. “The Ferryman and His Fee: a Study in Ethnology, Archaeology, and Tradition” *Transactions of the Folklore Society* 68(1). Retrieved from: https://www.tandfonline.com/doi/abs/10.1080/0015587X.1957.9717576?journalCode=rfol20; Ahmed, Radwan A. S. 2016. “The Celestial Ferryman in Ancient Egyptian Religion ‘Sailor of the Dead’” *Journal of the General Union of Arab Archaeologists* 1. Retrieved from: https://jguaa2.journals.ekb.eg/article_3902_c72fcef93bfa3c4f39b9e8ec4b8e0a29.pdf

[2] Gilbey, Walter. 1903. Early Carriages and Roads. Vinton and Company. Retrieved from: https://archive.org/details/earlycarriagesa00gilbgoog ; Hodges, Graham R. G. 2020. Taxi! A Social History of the New York City Cabdriver. Baltimore, MD: Johns Hopkins University Press.

[3] Uber. 2022. “The History of Uber”. Retrieved from: https://www.uber.com/newsroom/history/

[4] Salnikov, Vsevolod, Renaud Lambiotte, Anastasios Noulas, and Cecilia Mascolo. "OpenStreetCab: Exploiting Taxi Mobility Patterns in New York City to Reduce Commuter Costs." Retrieved from: https://arxiv.org/pdf/1503.03021.pdf; Cetin, Tamer. 2017. "The Rise of Ride Sharing in Urban Transport: Threat or Opportunity?". In *Urban Transport Systems*, edited by Hamid Yaghoubi, IntechOpen. Retrieved from: https://www.intechopen.com/chapters/53725

[5] Yellow Cab Company. 2022. “Experience the YellowCab App”. Retrieved from: https://www.yellowcab.cab/app/; Apple App Store. 2022. “Curb – Request & Pay for Taxis”. Retrieved from: https://apps.apple.com/us/app/curb-request-pay-for-taxis/id299226386

[6] Rubin, Beth A. 1986. “Class Struggle American Style: Unions, Strikes, and Wages”. *American Sociological Review,* 51(5), 618-633. Retrieved from: https://www.jstor.org/stable/2095488.

[7] Hodges, Graham R. G. 2020. *Ibid.*

[8] Dubal, Veena B. 2017. "The Drive to Precarity: A Political History of Work, Regulation, & Labor Advocacy in San Francisco’s Taxi & Uber Economies”. *Berkeley Journal of Employment and Labor Law* 38(1), 73-135. Retrieved from: https://repository.uchastings.edu/cgi/viewcontent.cgi?article=2588&context=faculty_scholarship

[9] Malin, Brenton J., and Curry Chandler. 2016. “Free to Work Anxiously: Splintering Precarity Among Drivers for Uber and Lyft”. *Communication, Culture, and Critique,* 10(2), 382-400. Retrieved from: https://academic-oup-com.proxy.library.ucsb.edu:9443/ccc/article/10/2/382/3956605#104075857

[10] Rosenblat, Alex. 2018. *Uberland: How Algorithms are Rewriting the Rules of Work*. University of California Press.

[11] Mohlmann, Mareikie and Lior Zalmanson, 2017. “Hands on the Wheel: Navigating Algorithmic Management and Uber Drivers’ Autonomy”. *ICIS 2017 Proceedings.* 3. Retrieved from: https://aisel.aisnet.org/icis2017/DigitalPlatforms/Presentations/3

[12] Greenwood, Brad, Idris Adjerid, Corey M. Angst, and Nathan L. Meikle. 2022. “How Unbecoming of You: Online Experiments Uncovering Gender Biases in Perceptions of Ridesharing Performance”. *Journal of Business Ethics,* 175, 499-518. Retrieved from: https://link.springer.com/article/10.1007/s10551-020-04675-2; Glendon, Ian, Lisa Dorn, Roy Davies, Gerald Mathews, and Ray G. Taylor. 1996. ”Age and Gender Differences in Perceived Accident Likelihood and Driver Competencies”. *Risk Analysis,* 16(6). Retrieved from: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1539-6924.1996.tb00826.x?casa_token=EOtYSQuJdH4AAAAA:3QaA6eyMBkVQH6Vk69DS2Uz8ARo3Px5rRI5nGulFbdkL_QInVs5P58Md6E-obpNbeAUFJOKOR15aVZb-

[13] Berry, Melissa. 2022. “How Many Uber Drivers Are There in 2022?” *The Ride Share Guy*. Retrieved from: https://therideshareguy.com/how-many-uber-drivers-are-there/

[14] Jiang, Jingjing. 2019. “More Americans Are Using Ride-Hailing Apps”. *Pew Research Center.* Retrieved from: https://www.pewresearch.org/fact-tank/2019/01/04/more-americans-are-using-ride-hailing-apps/

[15] Perri, Janine. 2022. “Uber vs. Lyft: Who’s Tops in the Battle of U.S. Rideshare Companies”. *Bloomberg Second Measure.* Retrieved from: https://secondmeasure.com/datapoints/rideshare-industry-overview/; UberEats. 2022. “UberEats: Order Food to Your Door”. Retrieved from: https://www.ubereats.com/

[16] Business of Apps. 2022. "Uber Revenue and Usage Statistics (2022). Retrieved from: https://www.businessofapps.com/data/uber-statistics/; Business of Apps. 2022. "Lyft Revenue and Usage Statistics (2022). Retrieved from: https://www.businessofapps.com/data/lyft-statistics/; MacroTrends. 2022. "Lyft Revenue 2017-2022". Retrieved from: https://www.macrotrends.net/stocks/charts/LYFT/lyft/revenue

[17] Berry, Melissa. 2022. *Ibid.*

[18] Rosenblat, Alex, Tim Hwang, and Patrick Davison. 2016. "Regional Diversity in Autonomy and Work: a Case Study From Uber and Lyft Drivers. *Data Society.* Retrieved from: https://datasociety.net/pubs/ia/Rosenblat-Hwang_Regional_Diversity-10-13.pdf; Campbell, Harry. 2021. "Lyft & Uber Driver Survey 2020: Uber Driver Satisfaction Takes a Big Hit". *Ride Share Guy.* Retrieved from: https://therideshareguy.com/uber-driver-survey/

[19] Rosenblat, Alex, and Luke Stark. 2016. "Algorithmic Labor and Information Asymmetries: A Case Study of Uber's Drivers". *International Journal of Communication* 10, 3758-3784. Retrieved from: https://ijoc.org/index.php/ijoc/article/download/4892/1739

[20] Efrati, Amir. 2017. "How Uber Will Combat Rising Driver Churn". *The Information.* Retrieved from: https://www.theinformation.com/articles/how-uber-will-combat-rising-driver-churn; MacDonald, Allyson. "How Digital Platforms Have Become Double-Edged Swords." *MIT Sloan Management Review*, 60(4), 1-7. Retrieved from: https://learning.oreilly.com/library/view/how-digital-platforms/53863MIT60440/chapter001.html

[21] Gridwise. 2020. *Who Are Rideshare Drivers? A Demographic Breakdown of Rideshare Drivers in the U.S.* Retrieved from: https://gridwise.io/who-are-rideshare-drivers-a-demographic-breakdown-of-rideshare-drivers-in-the-u-s; Storer, Adam, Daniel Schneider, and Kristen Harknett. 2020. "What Explains Racial/Ethnic Inequality in Job Quality in the Service Sector?" *American Sociological Review,* 85(4), 537-572. Retrieved from: https://www.asanet.org/sites/default/files/attach/journals/aug20asrfeature.pdf

[22] Lorenzetti, Laura. 2015. "5 Surprising Numbers From Uber's Driver Data Report". *Fortune Magazine.* Retrieved from: https://fortune.com/2015/01/22/5-surprising-numbers-from-ubers-driver-data-report/

[23] Uber. 2021. *Environmental Social Governance Report – 2021.* Retrieved from: https://s23.q4cdn.com/407969754/files/doc_downloads/2021/07/Uber-2021-ESG-Report.pdf?uclick_id=3616de86-c7c8-449d-91c0-c566807d203c

[24] Mishel, Lawrence. 2018. "Uber and the Labor Market: Uber Drivers' Compensation, Wages, and the Scale of Uber and the Gig Economy". *Economic Policy Institute.* Retrieved from: https://files.epi.org/pdf/145552.pdf

[25] Hall, Jonathan V. and Alan B. Krueger. 2016. "An Analysis of the Labor Market for Uber's Driver-Partners in the United States". *National Bureau of Economic Research*, Working Paper 22843. Cambridge, MA. Retrieved from: https://www.nber.org/system/files/working_papers/w22843/w22843.pdf

[26] Gridwise. 2020. *Ibid*

[27] UCLA Institute for Research on Labor and Employment. 2018. *More Than a Gig: A Survey of Ride-Hailing Drivers in Los Angeles.* Retrieved from: https://www.labor.ucla.edu/wp-content/uploads/2018/06/Final-Report.-UCLA-More-than-a-Gig.pdf; Kokalitcheva, Kia. 2020. "Uber Says Full-Time Drivers Handle Only a Quarter of California Rides". *Axios.* Retrieved from: https://www.axios.com/uber-says-full-time-drivers-handle-only-a-quarter-of-california-rides-c04c74ef-8a12-45ac-aa4f-81f285532bd6.html

[28] Ma, Ning, and Benjamin Hanrahan. 2019. "Part-Time Ride-Sharing: Recognizing the Context in Which Drivers Ride-Share and its Impact on Platform Use". *Proceedings of the ACM on Human-Computer Interaction.* Retrieved from: https://www.researchgate.net/profile/Ning-Ma-52/publication/337798021_Part-Time_Ride-Sharing_Recognizing_the_Context_in_which_Drivers_Ride-Share_and_its_Impact_on_Platform_Use/links/5df8f2d292851c8364852e29/Part-Time-Ride-Sharing-Recognizing-the-Context-in-which-Drivers-Ride-Share-and-its-Impact-on-Platform-Use.pdf

[29] Schoenbaum, Naomi. 2016. "Gender and the Sharing Economy". *George Washington University Law Faculty Publications.* Retrieved from: https://scholarship.law.gwu.edu/cgi/viewcontent.cgi?article=2493&context=faculty_publications

[30] Qian, Xinwu, and Satish V. Ukkusuri. "Time-of-Day Pricing in Taxi Markets". *IEEE Transactions on Intelligent Transportation Systems,* 18(6), 1610-1622. Retrieved from: https://www.researchgate.net/profile/Xinwu-Qian/publication/308308542_Time-of-Day_Pricing_in_Taxi_Markets/links/59e6746a0f7e9b13aca3c7ad/Time-of-Day-Pricing-in-Taxi-Markets.pdf

[31] Barrett, James R. 1992. “Americanization From the Bottom Up: Immigration and the Remaking of the Working Class in the United States, 1880-1930”. *The Journal of American History,* 79(3), 996-1020. Retrieved from: https://www.csun.edu/~twd61312/573/573%20oral%20presentation%20readings/barrett.pdf
[32] Dubal, Veena B. 2017. *Ibid.*
[33] Hodges, Graham R. G. 2020. *Ibid*.
[34] Wright, Chris. 2018. “Popular Radicalism in the 1930s: The History of the Workers’ Unemployment Insurance Bill”. *Class, Race, and Corporate Power* 6(1). Retrieved from: https://www.jstor.org/stable/48645467?seq=1
[35] Lichtenstein, Nelson. 2003. Labor’s War at Home: The CIO in World War II. *Temple University Press.* Philadelphia, PA.
[36] Mayer, Gerald. 2004. “Union Membership Trends in the United States”. *Congressional Research Service.* Retrieved from: https://sgp.fas.org/crs/misc/RL32553.pdf
[37] Rubin, Beth A. 1986. *Ibid.*
[38] Abraham, Steven E. 1994. “How the Taft-Hartley Act Hindered Unions”. *Hofstra Labor and Employment Law Journal*, 12(1). Retrieved from: https://scholarlycommons.law.hofstra.edu/cgi/viewcontent.cgi?article=1198&context=hlelj
[39] Hodges, Graham R. G. 2020. *Ibid*.
[40] Dubal, Veena B. 2017. *Ibid.*
[41] Noble, Charles. 1997. Welfare as We Knew It: A Political History of the American Welfare State. *Oxford University Press.*
[42] Nelson, Richard R., and Gavin Wright. 1992. “The Rise and Fall of American Technological Leadership: The Postwar Era in Historical Perspective”. *Journal of Economic Literature,* 30(4), 1931-1964. Retrieved from: https://web-s-ebscohost-com.proxy.library.ucsb.edu:9443/ehost/pdfviewer/pdfviewer?vid=1&sid=9472ed09-c270-4075-84f0-8ca71507e6b6%40redis
[43] Petras, James F., and Morris H. Morley. 1983. “Imperialism and Intervention in the Third World: U.S. Foreign Policy and Central America”. *Socialist Register,* 20. Retrieved from: https://socialistregister.com/index.php/srv/article/download/5499/2397/7395.
[44] U.S. Department of Labor. 1993. *Women Workers: Trends & Issues*. Retrieved from: https://babel.hathitrust.org/cgi/pt?id=uiug.30112026498003&view=1up&seq=47; Smith, Gabrielle. 2021. “The Complete History of Employer-Provided Health Insurance.” *PeopleKeep.* Retrieved from: https://www.peoplekeep.com/blog/the-complete-history-of-employer-provided-health-insurance
[45] Olin, Wright E., and Rachel Dwyer. 2003. “The Patterns of Job Expansions in the USA: A Comparison of the 1960s and 1990s”. *Socio Economic Review,* 1, 289-325. Retrieved from: https://www.aacademica.org/erik.olin.wright/27.pdf; Kollman, Geoffrey, and Carmen Solomon-Fears. 2001. “Major Decisions in the House and Senate on Social Security: 1935-2000”. *Social Security Administration*, CRS Legislative Histories (RL30920). Retrieved from: https://www.ssa.gov/history/reports/crsleghist3.html
[46] Amin, Ash. 1994. Post-Fordism, A Reader. *Blackwell Publishers, Ltd.* Malden, MA.
[47] Jessop, Bob. 1996. "Post-Fordism and the State”. In *Comparative Welfare Systems*, edited by Bent Greve. *Macmillan.* London, UK.
[48] Pack, Howard. 1988. “Industrialization and Trade”. *Handbook of Development Economics* 1, 333-380. Retrieved from: https://www.sciencedirect.com/science/article/abs/pii/S1573447188010125#:~:text=Ch.%209%3A%20Industrialization%20and%20Trade%20335%20The%20Lewis-Fei-Ranis,agricultural%20to%20the%20more%20productive%20industrial%20sector%20occurs.
[49] Butterworth, Paul, James Schultz, and Marian Schultz. 2005. "More Than a Labor Dispute: The PATCO Strike of 1981." *Essays in Economic & Business History* 23, 125-139. Retrieved from: https://www.ebhsoc.org/journal/index.php/ebhs/article/download/155/136; Schram, Sanford F. 2015. The Return of Ordinary Capitalism: Neoliberalism, Precarity, Occupy. *Oxford University Press*.
[50] Dubal, Veena B. 2017. *Ibid.*
[51] Schlosberg, Richard. 2021. "The Downfall of the New York City Taxi Fleet Industry: 1973-1983." *Labor History* 62 (5-6), 688-703. Retrieved from: https://doi.org/10.1080/0023656X.2021.1963423
[52] Dubal, Veena B. 2017. "Wage Slave or Entrepreneur? Contesting the Dualism of Legal Worker Identities." *California Law Review*, 105, 65-123. Retrieved from: https://repository.uchastings.edu/cgi/viewcontent.cgi?article=2595&context=faculty_scholarship

[53] Scott, Catherine V. 2018. Neoliberalism and U.S. Foreign Policy: From Carter to Trump. *Palgrave Macmillan Cham*.

[54] United States. Department of State. Bureau of Public Affairs. 1984. *U.S. Relations with Saudi Arabia.* Washington, DC: Bureau of Public Affairs, Department of State. Retrieved from: https://catalog.hathitrust.org/Record/100710668; Bevins, Vincent. 2020. The Jakarta Method: Washington's Anticommunist Crusade and the Mass Murder Program That Shaped Our World. New York, NY. *Public Affairs, Hatchette Book Group*; Haney, Patrick J., and Walt Vanderbush. 2005. The Cuban Embargo: The Domestic Politics of an American Foreign Policy. *University of Pittsburgh Press*

[55] Desai, Mihir A., Fritz Foley, and James R. Hines. 2005. "Foreign Direct Investment and the Domestic Capital Stock". *National Bureau of Economic Research,* Working Paper 11075. Retrieved from: https://www.nber.org/system/files/working_papers/w11075/w11075.pdf; Loomis, Erik. 2016. Out of Sight: The Long and Disturbing Story of Corporations Outsourcing Catastrophe. *The New Press*.

[56] Soederberg, Susanne. 2004. The Politics of the New International Financial Architecture: Reimposing Neoliberal Domination in the Global South. *Zed Book*.

[57] Denice, Patrick, and Jake Rosenfeld. 2018. "Unions and Nonunion Pay in the United States, 1977-2015". *Sociological Science,* 5, 541-561. Retrieved from: https://sociologicalscience.com/download/vol-5/august/SocSci_v5_541to561.pdf

[58] Bloom, David E., and Richard B. Freeman. 1992. "The Fall in Private Pension Coverage in the U.S.". *National Bureau of Economic Research,* Working Paper 3973. Retrieved from: https://www.nber.org/system/files/working_papers/w3973/w3973.pdf; Cohen, Robin A., Diane M. Makuc, Amy B. Bernstein, Linda T. Bilheimer, and Eve Powell-Griner. 2009. "Health Insurance Coverage Trends, 1959-2007: Estimates From the National Health Interview Survey". *CDC National Health Statistics Reports,* 17. Retrieved from: https://www.cdc.gov/nchs/data/nhsr/nhsr017.pdf; Long, Michelle, Matthew Rae, Gary Claxton, and Anthony Damico. 2016. "Trends in Employer-Sponsored Insurance Offer and Coverage Rates, 1999-2014". *Kaiser Family Foundation.* Retrieved from: https://www.kff.org/private-insurance/issue-brief/trends-in-employer-sponsored-insurance-offer-and-coverage-rates-1999-2014/

[59] Caputo, Richard K. 2011. U.S. Social Welfare Reform: Policy Transitions From 1981 to the Present. *Springer.* Retrieved from: https://link-springer-com.proxy.library.ucsb.edu:9443/content/pdf/10.1007%2F978-1-4419-7674-1.pdf

[60] Tilly, Chris. 2021. "Trajectories of Change at Work: A Global Look at Technological Change and Informalization." In *The Future of Work,* edited by Christian Suter, Jacinto Cuvi, Philip Basiger, and Mihaela Nedelcu. Retrieved from: https://www.seismoverlag.ch/site/assets/files/16967/oa_9783037778180.pdf#page=53; Vij, Ritu. 2019. "The Global Subject of Precarity". *Globalizations,* 16(4). Retrieved from: https://aura.abdn.ac.uk/bitstream/handle/2164/15240/Globalizations_Vij_final.pdf?sequence=1

[61] Becket, Katherine, and Bruce Western. 2001. "Governing Social Marginality: Welfare, Incarceration, and the Transformation of State Policy". *Punishment & Society,* 3(1), 45-39. Retrieved from: https://www.researchgate.net/profile/Katherine-Beckett/publication/258181111_Governing_Social_Marginality/links/573f42b208ae298602e8f0e3/Governing-Social-Marginality.pdf

[62] Crain, Matthew. 2014. "Financial Markets and Online Advertising: Reevaluating the Dotcom Investment Bubble". *Information, Communication, & Society.* Retrieved from: http://dx.doi.org/10.1080/1369118X.2013.869615.

[63] Guttmann, Robert, and Dominique Plihon. 2010. "Consumer Debt and Financial Fragility". *International Review of Applied Economics*, 24(3), 269-283. Retrieved from: https://peri.umass.edu/fileadmin/pdf/conference_papers/SAFER/Guttmann_Plihon_Consumer.pdf

[64] Hwang, Jackelyn, Michael Hankinson, and Kreg S. Brown. 2014. Racial and Spatial Targeting: Segregation and Subprime Lending Within and Across Metropolitan Areas. *Social Forces,* 93(3), 1081-1108. Retrieved from: https://www.mhankinson.com/documents/segregation_preprint.pdf

[65] Smeeding, Timothy. 2012. "Income, Wealth, and Debt and the Great Recession". *The Russel Sage Foundation and The Stanford Center on Poverty and Inequality.* Retrieved from: http://web.stanford.edu/group/recessiontrends-dev/cgi-bin/web/sites/all/themes/barron/pdf/IncomeWealthDebt_fact_sheet.pdf; Kochhar, Rakesh, and Richard Fry.

2014. "Wealth Inequality Has Widened Along Racial, Ethnic Lines Since End of Great Recession". *Pew Research Center*. Retrieved from: http://www.tripoetry.com/BEING-BLACK/FACTS/Wealth%20inequality%20has%20widened%20along%20racial,%20ethnic%20lines%20since%20end%20of%20Great%20Recession%20%7C%20Pew%20Research%20Center.pdf; McIntosh, Kriston, Emily Moss, Ryan Nunn, and Jay Shambaugh. 2020. "Examining the Black-White Wealth Gap". *Brookings Institute.* Retrieved from: https://www.brookings.edu/blog/up-front/2020/02/27/examining-the-black-white-wealth-gap/; Wolff, Edward. 2018. "The Decline of African-American and Hispanic Wealth Since the Great Recession". *VoxEU, Center for Economic and Policy Research.* Retrieved from: https://voxeu.org/article/decline-african-american-and-hispanic-wealth-great-recession

[66] Albelda, Randy. 2013. "Gender Impacts of the 'Great Recession' in the United States". In *Women and Austerity*, edited by Mari Karamessini and Jill Rubery. London: Routledge.

[67] Karamessini, Mari, and Jill Rubery. 2013. "Economic Crisis and Austerity: Challenges to Gender Equality". In *Women and Austerity*, edited by Mari Karamessini and Jill Rubery. London: Routledge; Wilson, Julie A., and Emily C. Yochim. 2015. "Mothering Through Precarity". *Cultural Studies,* 29 (5-6), 669-686. Retrieved from: https://www.tandfonline.com/doi/full/10.1080/09502386.2015.1017139?scroll=top&needAccess=true

[68] Trading Economics, 2022. *United States GDP, 1960-2020 Historical.* Retrieved from: https://tradingeconomics.com/united-states/gdp

[69] Vallas, Steven. 2016. "Accounting for Precarity: Recent Studies of Labor Market Uncertainty". *Contemporary Sociology,* 44(4), 463-469. Retrieved from: https://www.jstor.org/stable/43996406; McCormack, Donna, and Suvi Salmenniemi. 2015. "The Biopolitics of Precarity and the Self". *European Journal of Cultural Studies,* 19(1), 3-15. Retrieved from: https://www.researchgate.net/profile/Suvi-Salmenniemi-2/publication/277941410_The_biopolitics_of_precarity_and_the_self/links/5c80c474458515831f8b39c4/The-biopolitics-of-precarity-and-the-self.pdf

[70] Edmiston, Kelly D. 2016. "Residential Rent Affordability Across U.S. Metropolitan Areas". *Federal Reserve Bank of Kansas City, Fourth Quarter Economic Review.* Retrieved from: https://www.researchgate.net/profile/Kelly-Edmiston/publication/313970733_Residential_Rent_Affordability_across_US_Metropolitan_Areas/links/58b063ae45851503be97de76/Residential-Rent-Affordability-across-US-Metropolitan-Areas.pdf

[71] Hathaway, Ian, and Mark Muro. 2017. "Ridesharing Hits Hyper-Growth". *Brookings Institute.* Retrieved from: https://www.brookings.edu/blog/the-avenue/2017/06/01/ridesharing-hits-hyper-growth/

[72] Uber, 2022. *Agreeing to Terms and Conditions*. Retrieved from: https://help.uber.com/driving-and-delivering/article/agreeing-to-terms-and-conditions?nodeId=44cf1f0e-27ca-4919-9621-f1321a0381c1

[73] Greenhouse, Steven. 2015. *Uber: on the Road to Nowhere: Uber Drivers and Getting Creative in Their Fight for Basic Workplace Rights.* Retrieved from: https://www.bollettinoadapt.it/wp-content/uploads/2015/12/greenhouse_uber.pdf

[74] Fos, Vyacheslav, Naser Hamdi, Ankit Kalda, and Jordan Nickerson. 2019. "Gig-Labor: Trading Safety Nets for Steering Wheels". *Center for Economic and Policy Research.* Retrieved from: https://cepr.org/active/publications/discussion_papers/dp.php?dpno=13885; Koustas, Dmitri K. 2018. "Consumption Insurance and Multiple Jobs: Evidence From Rideshare Drivers". *Society for the Advancement of Socio-Economics.* Retrieved from: http://dmitrikoustas.com/DKoustas-RideSmoothing-WP.pdf

[75] Perritt, Henry H. 2020. "Don't Burn the Looms: Regulation of Uber and Other Gig Labor Markets". *Science and Technology Law Review,* 22(1). Retrieved from: https://scholar.smu.edu/cgi/viewcontent.cgi?article=1289&context=scitech; Bales, Richard A., and Christian P. Woo. 2017. "The Uber Million Dollar Question: Are Uber Drivers Employees or Independent Contractors?" *Mercer Law Review,* 68(2). Retrieved from: https://digitalcommons.law.mercer.edu/cgi/viewcontent.cgi?article=2314&context=jour_mlr

[76] Ma, Ning, and Benjamin Hanrahan. 2019. *Ibid.*

[77] Josserand, Emmanuel, and Sarah Kaine. 2019. "Different Directions or the Same Route? The Varied Identities of Rideshare Drivers". *Journal of Industrial Relations,* 61(4). Retrieved from: https://journals-sagepub-com.proxy.library.ucsb.edu:9443/doi/full/10.1177/0022185619848461

[78] Parrott, James A., and Michael Reich. 2018. "An Earnings Standard for New York City's App-Based Drivers: Economic Analysis and Policy Assessment". *Center for New York City Affairs and Center on Wage and Employment Dynamics.* Retrieved from:

https://static1.squarespace.com/static/53ee4f0be4b015b9c3690d84/t/5b3a3aaa0e2e72ca74079142/1530542764109/Parrott-Reich+NYC+App+Drivers+TLC+Jul+2018jul1.pdf

[79] King, David, Deborah Salon, and Matthew Conway. 2018. "Trends in Taxi Use and the Advent of Ridehailing, 1995-2017: Evidence From the U.S. National Household Travel Survey". *Urban Science,* 2(3). Retrieved from: https://www.mdpi.com/2413-8851/2/3/79/pdf

[80] Duranton, Gilles, Geetika Nagpal, and Matthew Turner. 2020. "Transportation Infrastructure in the U.S." *National Bureau of Economic Research*, Working Paper 27254. Cambridge, MA. Retrieved from: https://www.nber.org/system/files/working_papers/w27254/w27254.pdf

[81] Cordina, Renzo, Jingjian Feng, Gwen Hannah, and David M. Power. 2020. "The IPO of Uber – a Classroom Case". *International Journal of Teaching and Case Studies,* 11(3). Retrieved from: https://discovery.dundee.ac.uk/ws/portalfiles/portal/51790798/uber_accepted_manuscript.pdf

[82] Santora, Joseph C. 2020. "Dara Khosrowshahi: Changing the Company Culture at Uber". *Sage Business Cases.* Retrieved from: https://sk.sagepub.com/cases/dara-khosrowshahi-changing-the-company-culture-at-uber

[83] Yousif, Marilyn. 2019. "The [Mis]Classification Issue: Should Federal Laws Preempt State Statutes That Classify Gig Economy Workers as Independent Contractors?" *Journal of Law in Society,* 19(1-2). Retrieved from: https://heinonline.org/HOL/LandingPage?handle=hein.journals/jls19&div=9&id=&page=

[84] Boeri, Tito, Giulia Giupponi, Alan B. Krueger, and Stephen Machin. 2020. "Solo Self-Employment and Alternative Work Arrangements: A Cross-Country Perspective on the Changing Composition of Jobs". *Journal of Economic Perspectives,* 34(1), 170-195. Retrieved from: https://pubs.aeaweb.org/doi/pdf/10.1257/jep.34.1.170

[85] Gloss, Mareike, Moira McGregor, and Barry Brown. 2016. "Designing for Labour: Uber and the On-Demand Mobile Workforce". *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems, Association for Computing Machinery.* Retrieved from: http://www.mobilelifecentre.org/sites/default/files/uber%20final%20camera%20ready.pdf; Uber, 2022. *Using a Third Party Navigation App.* Retrieved from: https://help.uber.com/driving-and-delivering/article/using-a-third-party-navigation-app?nodeId=36a70c53-4bb0-4e17-a044-d91c2d1ff080

[86] Angrist, Joshua D., Sydnee Caldwell, and Jonathan V. Hall. 2017. "Uber vs. Taxi: A Driver's Eye View". *National Bureau of Economic Research,* Working Paper 23891. Cambridge, MA. Retrieved from: https://www.nber.org/system/files/working_papers/w23891/w23891.pdf

[87] Chandar, Bharat, Uri Gneezy, John A. List, and Ian Muir. 2019. "The Drivers of Social Preferences: Evidence From a Nationwide Tipping Field Experiment". *National Bureau of Economic Research,* Working Paper 26380. Cambridge, MA. Retrieved from: https://www.nber.org/system/files/working_papers/w26380/w26380.pdf

[88] Uber. 2022. *Introducing Uber Pro.* Retrieved from: https://www.uber.com/us/en/drive/uber-pro/; Lyft, 2022. *Acceptance Rate.* Retrieved from: https://help.lyft.com/hc/e/articles/115013077708-Acceptance-rate

[89] Kramer, John E., and William H. Mellor. 1995. "Opening Boston's Taxicab Market". *Institute for Justice.* Retrieved from: http://www.taxi-library.org/boston1.htm

[90] Ambinder, Loren P. 1996. "Dispelling the Myth of Rationality: Racial Discrimination in Taxicab Service and the Efficacy of Litigation Under 42 U.S.C. 1981". *The Journal of Blacks in Higher Education,* 13. Retrieved from: https://www.jstor.org/stable/2963194

[91] Rosenblat, Alex, and Luke Stark. 2017. "Algorithmic Labor and Information Asymmetries: A Case Study of Uber's Drivers". *International Journal of Communication,* 10. Retrieved from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2686227

[92] Zipper, David. 2019. "Did Uber Just Enable Discrimination by Destination?" *Bloomberg.* Retrieved from: https://www.bloomberg.com/news/articles/2019-12-11/the-discrimination-risk-in-uber-s-new-driver-rule; Uber, 2019. *To California Drivers: Keeping You in the Driver's Seat.* Retrieved from: https://www.uber.com/blog/california/keeping-you-in-the-drivers-seat-1/

[93] Brown, Anne E. 2018. "Ridehail Revolution: Ridehail Travel and Equity in Los Angeles". *ProQuest Dissertations Publishing.* Retrieved from: https://escholarship.org/content/qt4r22m57k/qt4r22m57k.pdf

[94] Bartel, Emma, Ellen MacEachen, Emily Reid-Musson, Samantha B. Meyer, Ron Saunders, Philip Bigelow, Agnieszka Kosny, and Sharanya Varatharajan. 2019. "Stressful by Design: Exploring Health Risks of Ride-share Work". *Journal of Transport & Health,* 14. Retrieved from: https://www.sciencedirect.com/science/article/pii/S2214140519301392

[95] Competitive safety in uber versus the taxi industry Tacker, Thomas. 2021. "Competitive Safety in Uber Versus the Taxi Industry". *The Journal of Private Enterprise,* 36(3), 49-66. Retrieved from: http://journal.apee.org/index.php/ajax/GDMgetFile/2021_Journal_of_Private_Enterprise_Vol_36_No_3_Fall_parte3.pdf

[96] Kaltner, Jillian. 2018. "Employment Status of Uber and Lyft Drivers: Unsettlingly Settled". *Hastings Women's Law Journal,* 29(1). Retrieved from: https://repository.uchastings.edu/cgi/viewcontent.cgi?article=1403&context=hwlj

[97] Lee, Min K., Daniel Kusbit, Evan Metsky, and Laura Dabbish. 2015. "Working With Machines: The Impact of Algorithmic and Data-Driven Management on Human Workers". *Association for Computing Machinery.* Retrieved from: https://ischool.utexas.edu/~ml48959/materials/Publication/2015-CHI_algorithmic_management.pdf

[98] Kaltner, 2018. *Ibid.*

[99] Feeney, Matthew. 2015. "Is Ridesharing Safe?" *Cato Institute.* Retrieved from: https://static1.squarespace.com/static/60af8b20a6408b307f40f642/t/618d74cbde3df46a31c90ebd/1636660429162/Cato-Institute-on-Ridesharing.pdf

[100] Bagchi, Sutirtha. 2018. "A Tale of Two Cities: An Examination of Medallion Prices in New York and Chicago". *Review of Industrial Organization,* 53, 295-319. Retrieved from: https://www.researchgate.net/profile/Sutirtha-Bagchi/publication/322711633_A_Tale_of_Two_Cities_An_Examination_of_Medallion_Prices_in_New_York_and_Chicago/links/5aef54c7a6fdcc8508b95261/A-Tale-of-Two-Cities-An-Examination-of-Medallion-Prices-in-New-York-and-Chicago.pdf

[101] Bagchi, Sutirtha. 2018. *Ibid.*

[102] Cetin, Tamer, and Elizabeth Deakin. 2019. "Regulation of Taxis and the Rise of Ridesharing". *Transport Policy,* 76, 149-158. Retrieved from: https://www.sciencedirect.com/science/article/pii/S0967070X17300409?casa_token=0Bypt21LEa4AAAAA:2fgIS2h27crRZaKVOFLrQsPvAq7AyA1IRU4cJ20qV2-s-bqLTuUWIxIG_jsLodGEZ9Vvwyl1--w

[103] Lowell, Chloe. 2020. "How New York City Has Failed its Taxi Drivers". *Columbia Political Review.* Retrieved from: http://www.cpreview.org/blog/2020/4/how-new-york-city-has-failed-its-taxi-drivers

[104] Uber, 2022. *Driver Requirements.* Retrieved from: https://www.uber.com/us/en/drive/requirements/

[105] Flores-Guri, Daniel. 2003. "An Economic Analysis of Regulated Taxicab Markets". *Review of Industrial Organization,* 23, 255-266. *Kluwer Academic Publishers.* Retrieved from: https://link-springer-com.proxy.library.ucsb.edu:9443/content/pdf/10.1023/B:REIO.0000031368.93775.0a.pdf; Seymour, Clara. 2008. "NLRB v. Friendly Cab Company: Entrepreneurialism and the Independent Contractor/Employee Distinction". *Berkeley Journal of Employment and Labor Law,* 29(2). Retrieved from: https://www.jstor.org/stable/pdf/24052536.pdf?refreqid=excelsior%3A194bcb317913f395ae83d0b50c149342

[106] Blasi, Gary, and Jacqueline Leavitt. 2006. "Driving Poor: Taxi Drivers and the Regulation of the Taxi Industry in Los Angeles". *UCLA Institute of Industrial Relations.* Retrieved from: http://www.medallionholders.com/docs/driving-poor.pdf

[107] Buchak, Gary. 2019. *Financing the Gig Economy.* Retrieved from: https://wpcarey.asu.edu/sites/default/files/gregory_buchak_seminar_march_6_2020.pdf

[108] Einav, Liran, Mark Jenkins, and Jonathan Levin. "The Impact of Credit Scoring on Consumer Lending". *RAND Journal of Economics,* 44(2), 249-274. Retrieved from: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.419.5353&rep=rep1&type=pdf

[109] Majeske, Karl D., and Thomas W. Lauer. 2013. "The Bank Loan Approval Decision From Multiple Perspectives". *Expert Systems with Applications,* 40(5), 1591-1598. Retrieved from: https://www.sciencedirect.com/science/article/pii/S095741741201055X

[110] Uber, 2022. *Weekly Rentals as Low as $260/Week.* Retrieved from: https://www.uber.com/us/en/drive/vehicle-solutions/; Lyft, 2022. *Lyft Express Drive: Your Make-it-Happen Rental Car.* Retrieved from: https://www.lyft.com/expressdrive

[111] Helling, Brett. 2022. "Your Complete Guide to Fair App in 2022". *Ridester.* Retrieved from: https://www.ridester.com/fair-app/

[112] Uber, 2022. *Vehicle Inspections: Los Angeles.* Retrieved from: https://www.uber.com/us/en/drive/los-angeles/inspections/
[113] Uber, 2022. *Vehicle Requirements: Los Angeles.* Retrieved from: https://www.uber.com/us/en/drive/los-angeles/vehicle-requirements/
[114] Jordan, John M. 2017. "Challenges to Large-Scale Digital Organization: The Case of Uber". *Journal of Organization Design,* 6. Retrieved from: https://link.springer.com/article/10.1186/s41469-017-0021-2
[115] Littlefield, Alice, and Larry T. Reynolds. 1990. "The Putting-Out System: Transitional Form or Recurrent Feature of Capitalist Production?" *The Social Science Journal,* 27(4). Retrieved from: https://www.sciencedirect.com/science/article/pii/036233199090013A
[116] Uber, 2022. *Vehicle Requirements. Ibid.*
[117] Berger, Thor, Carl B. Frey, Guy Levin, and Santosh R. Danda. 2019. "Uber Happy? Work and Well-Being in the 'Gig Economy'". *Economic Policy,* 34(99), 429-477. Retrieved from: https://academic.oup.com/economicpolicy/article-abstract/34/99/429/5536871; Bates, Lisa K. 2019. "Gigs, Side Hustles, Freelance: What Work Means in the Platform Economy City". *Planning Theory & Practice,* 20(3), 423-446. Retrieved from: https://www.tandfonline.com/doi/pdf/10.1080/14649357.2019.1629197
[118] Ma, Ning, and Benjamin Hanrahan. 2019. *Ibid.*
[119] Malin, Brenton J., and Curry Chandler. 2016. *Ibid.*
[120] Tabner, Isaac T. 2016. "Buying Versus Renting: Determinants of the Net Present Value of Home Ownership for Individual Households". *International Review of Financial Analysis,* 48, 233-246. Retrieved from: https://www.storre.stir.ac.uk/bitstream/1893/24605/1/Tabner_IRFA_2016.pdf
[121] Tec, Mauricio, Natalia Zuniga-Garcia, Randy B. Machemehl, and James G. Scott. 2019. "How Likely Are Ride-Share Drivers to Earn a Living Wage? Large-Scale Spatio-Temporal Density Smoothing With the Graph-Fused Elastic Net". *ArxIV.* Retrieved from: https://arxiv.org/pdf/1911.08106.pdf
[122] Chen, Le, Alan Mislove, and Christo Wilson. 2015. "Peeking Beneath the Hood of Uber". *Proceedings from the 2015 Internet Measurement Conference.* Retrieved from: https://www.ccs.neu.edu/~amislove/publications/Uber-IMC.pdf
[123] Scheiber, Noam. 2022. "How Uber Uses Psychological Tricks to Push its Drivers' Buttons" in *Ethics of Data and Analytics,* edited by Kirsten Martin. New York: Auerbach Publications. Retrieved from: https://ceo.usc.edu/wp-content/uploads/2019/02/2_How_Uber_Uses_Psychological_Tricks_to_Push_Its_Drivers_w_Perf_Mgmt.pdf
[124] Uber, 2022. *Driving Time.* Retrieved from: https://help.uber.com/driving-and-delivering/article/driving-time?nodeId=a50a72e1-d315-4154-ac66-b17bd5bd050a
[125] Rosenblat, Alex, Tim Hwang, and Patrick Davison. 2016. *Ibid.*
[126] Malin, Brenton J., and Curry Chandler. 2016. *Ibid.*
[127] Bartel, Emma, et al. 2019. *Ibid.*
[128] Chan, Ngai K. 2019. "The Rating Game: The Discipline of Uber's User-Generated Ratings". *Platform Surveillance,* 17(1). Retrieved from: https://ojs.library.queensu.ca/index.php/surveillance-and-society/article/view/12911/8493
[129] Uber, 2022. *Ratings, Rider Feedback, and What it Means.* Retrieved from: https://www.uber.com/blog/rider-feedback/
[130] Kaufman, Adam, and Nicole Li. 2019. *Rate Your Lyft.* Retrieved from: https://static1.squarespace.com/static/5bb3ba5093a6326a100c929d/t/5c765aa2652dea58da94c87b/1551260328560/Documentation.pdf
[131] Raval, Noopur and Paul Dourish. 2016. *Ibid.*
[132] Uber. *Uber Application (Android Smartphone).* Accessed April 5, 2022.
[133] Uber. *Uber Application (Android Smartphone).* Accessed October 11, 2021.
[134] Kaltner, Jillian. 2018. *Ibid.*
[135] Wood, Alex J., and Vili Lehdonvirta. 2021. "Platform Precarity: Surviving Algorithmic Insecurity in the Gig Economy". *Conference Presentation, AI at Work: Automation, Algorithmic Management, and Employment Law.* Retrieved from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3795375
[136] Lyft, 2022. *Driver and Passenger Ratings.* Retrieved from: https://help.lyft.com/hc/e/articles/115013079948-Driver-and-passenger-ratings

[137] Epseland, Wendy N., and Michael Sauder. 2007. "Rankings and Reactivity: How Public Measures Recreate Social Worlds" *American Journal of Sociology* 117(1). Retrieved from: https://openresearch-repository.anu.edu.au/bitstream/1885/30995/2/01_Espeland_Rankings_and_Reactivity:_How_2007.pdf
[138] Christin, Angele. 2018. "Counting Clicks: Quantification and Variation in Web Journalism in the United States and France". *American Journal of Sociology,* 123(5), 1382-1415. Retrieved from: http://www.angelechristin.com/wp-content/uploads/2022/05/Counting-Clicks_AJS_AChristin.pdf
[139] Adams, Thomas Jessen. 2006. "Making the New Shop Floor: Wal-Mart, Labor Control, and the History of the Postwar Discount Retail Industry in America". In *Wal-Mart: The Face of Twenty-First-Century Capitalism* edited by Nelson Lichtenstein. New York: The New Press.
[140] Edelman, Benjamin G., and Damien Geradin. 2015. "Efficiencies and Regulatory Shortcuts: How Should We Regulate Companies Like Airbnb and Uber?" *Stanford Technology Law Review,* 19, 293-328. Retrieved from: https://www.benedelman.org/publications/efficiencies-and-shortcuts-2015-11-24.pdf
[141] Hodges, Graham R. G. 2020. *Ibid.*
[142] Luedke, Tracy. 2010. "Driving Lives: An Ethnography of Chicago Taxi Drivers". *Industry Studies Association Working Paper Series.* Retrieved from: http://isapapers.pitt.edu/179/1/wp-2010-03-Luedke.pdf
[143] Mitra, Dididi. 2012. "Social Capital Investment and Immigrant Economic Trajectories: A Case Study of Punjabi American Taxi Drivers in New York City." *Journal of International Migration,* 50(4), 67-84. Retrieved from: https://onlinelibrary-wiley-com.proxy.library.ucsb.edu:9443/doi/full/10.1111/j.1468-2435.2009.00567.x
[144] Reynolds, Lori. 2010. "Aging and Disability Awareness Training for Drivers of a Metropolitan Taxi Company". *Activities, Adaptation, & Aging*, 1, 17-29. Retrieved from: https://www.researchgate.net/publication/233068886_Aging_and_Disability_Awareness_Training_for_Drivers_of_a_Metropolitan_Taxi_Company
[145] Sherer, Peter, and Nikolai Rogovsky. 1998. "What Drives Employment Relationships in Taxicab Organizations? Linking Agency to Firm Capabilities and Strategic Opportunities". *Organization Science*, 29(4). Retrieved from: https://www.researchgate.net/publication/247827009
[146] Cherry, Miriam A. 2016. "Beyond Misclassification: The Digital Transformation of Work". *Comparative Labor Law & Policy Journal,* 2016-2. Retrieved from: https://scholarship.law.slu.edu/cgi/viewcontent.cgi?article=1009&context=faculty
[147] Rennstam, Jens, and Karen L. Ashcraft. 2013. "Knowing Work: Cultivating a Practice-Based Epistemology of Knowledge in Organization Studies". *Human Relations,* 67(1), 3-25. Retrieved from: https://journals.sagepub.com/doi/abs/10.1177/0018726713484182
[148] Manning, Peter K. 2008. "Goffman on Organizations". *Organization Studies,* 29. Retrieved from: https://www.researchgate.net/profile/Peter-Manning/publication/240279748_Goffman_on_Organizations/links/54dbca790cf28d3de65cf5ee/Goffman-on-Organizations.pdf
[149] Goffman, Erving. 2021*. The Presentation of Self in Everyday Life.* Anchor Publishing.
[150] Josserand, Emmanuel, and Sarah Kaine. 2019. *Ibid.*
[151] Quinn, Floyd F., Erik S. Thorsteinsson, and Nicolina L. Weaver. 2020. "U.S. Workers Weigh in on the Issue of Portable Benefits". *Journal of Public Affairs,* 21(1). Retrieved from: https://onlinelibrary.wiley.com/doi/epdf/10.1002/pa.2140; Lee, Min K., Daniel Kusbit, Evan Metsky, and Laura Dabbish. 2015. *Ibid.*
[152] "UP: Uber People Forum". 2022. *VerticalScope Inc.* Retrieved from: https://www.uberpeople.net/forums/
[153] Collier, Ruth B., Veena B. Dubal, and Christopher Carter. 2017. "Labor Platforms and Gig Work: The Failure to Regulate". *UC Berkeley Institute for Research on Labor and Employment*, #106-17. Retrieved from: rhttps://escholarship.org/content/qt4c8862zj/qt4c8862zj.pdf
[154] Fletcher-Tomenius, Leon, and Andreas Vossler. 2009. "Trust in Online Thereapeutic Relationships: The Therapist's Experience". *Counselling Psychology Review,* 24(2), 24-34. Retrieved from: http://oro.open.ac.uk/17204/3/873ef4b0.pdf
[155] Chan, Ngai K. 2019. "Becoming an Expert in Driving for Uber: Uber Driver/Bloggers' Performance of Expertise and Self-Presentation on YouTube". *New Media & Society,* 21(9). Retrieved from: https://journals.sagepub.com/doi/abs/10.1177/1461444819837736; YouTube. 2022. *The RideShare Guy.* Retrieved from: https://www.youtube.com/channel/UCCwyU2RqlalzpKIrUhYWHfw; *The RideShare Guy*. 2022. Retrieved from: https://theridesshareguy.com/

[156] Uber. 2022. *Quality Improvement Courses.* Retrieved from: https://help.uber.com/driving-and-delivering/article/quality-improvement-courses/?_ga=2.29190649.454420488.1612206135-428445573.1610577741&nodeId=9deed9cc-6221-43f8-b699-aaf0d0653569&uclick_id=7aa36d14-1501-4cd7-aedf-ff041951c955; 7 X 7 Experience. 2022. "Improve Your Ratings and Get Back on the Road with 7x7's Quality Improvement Course". Retrieved from: https://www.7x7experience.com/virtual

[157] Edelman, Benjamin G., and Damien Geradin. 2015. "Efficiencies and Regulatory Shortcuts: How Should We Regulate Companies Like Airbnb and Uber?" *Stanford Technology and Law Review,* 19. Retrieved from: https://www.benedelman.org/publications/efficiencies-and-shortcuts-2015-11-24.pdf; Borowiak, Craig. 2019. "Poverty in Transit: Uber, Taxi Coops, and the Struggle Over Philadelphia's Transportation Economy". *Antipode,* 51(4).

[158] Dubal, Veena B. 2017. *Ibid.*

[159] Roscigno, Vincent J., and Randy Hodson. 2004. "The Organizational and Social Foundations of Worker Resistance" *American Sociological Review,* 69(1). Retrieved from: https://www.researchgate.net/profile/V-Roscigno/publication/272559943_Media_and_Mobilization_The_Case_of_Radio_and_Southern_Textile_Worker_Insurgency_1929_to_1934/links/581206fa08aeda05f0a56c7a/Media-and-Mobilization-The-Case-of-Radio-and-Southern-Textile-Worker-Insurgency-1929-to-1934.pdf

[160] Uber. 2022. *Deactivations: Understanding Why Drivers and Delivery People Lose Account Access.* Retrieved from: https://www.uber.com/us/en/drive/safety/deactivations/

[161] Uber. 2022. *Deactivations: Altercations.* Retrieved from: https://www.uber.com/us/en/drive/safety/deactivations/; Uber. 2022. *Deactivations: Unsafe Vehicles.* Retrieved from: https://www.uber.com/us/en/drive/safety/deactivations/

[162] Uber. 2022. *Account and App Issues: I Have Another Account Issue.* Retrieved from: https://help.uber.com/driving-and-delivering/article/i-have-another-account-issue?_ga=2.204754901.454420488.1612206135-428445573.1610577741&nodeId=2e6d094d-a487-41de-b911-d4fc80c4a659&uclick_id=7b31b2ed-4ea1-4264-b31f-95482c74051f

[163] Uber. 2022. *Driver App: Phone Support.* Retrieved from: https://www.uber.com/us/en/drive/driver-app/phone-support/

[164] Ma, Ning F., Chien W. Yuan, Moojan Ghafurian, and Benjamin V. Hanrahan. 2018. "Using Stakeholder Theory to Examine Drivers' Stake in Uber". *CHI Conference on Human Factors in Computing.* Retrieved from: http://acm.mementodepot.org/pubs/proceedings/acmconferences_3173574/3173574/3173574.3173657/3173574.3173657.pdf; Mohlmann, Mareikie and Lior Zalmanson, 2017. *Ibid.*

[165] Akerlof, George A., and Rachel E. Kranton. 2008. "Identity, Supervision, and Work Groups". *American Economic Review: Papers & Proceedings 2008,* 98(2), 212-217. Retrieved from: https://sites.duke.edu/rachelkranton/files/2018/11/identitysupervisionworkgroups-aer-pandp-akerlof-and-kranton.pdf

[166] Park, Jungsun, and Yangho Kim. 2021. "Factors that Affect Depression and Anxiety in Service and Sales Workers Who Interact with Angry Clients." *Safety and Health at Work* 12(2). Retrieved from: https://www.sciencedirect.com/science/article/pii/S2093791120303516; Soderlund, Magnus. 2016. "Employee Display of Burnout in the Service Encounter and its Impact on Customer Satisfaction". *Journal of Retailing and Consumer Services,* 37. Retrieved from: https://www.sciencedirect.com/science/article/pii/S0969698916301898?casa_token=iKDERq6A9j8AAAAA:sqtuHWxj1yQyOUsrSi-3Hd99vuWWQLrtXAbjaJhhFkHeSiPo-8GoHHu5rTR9y4cvYnPlAYLeo98#bib70

[167] Chan, Ngai K. 2019. "The Rating Game: The Discipline of Uber's User-Generated Ratings." *Platform Surveillance* 17(1). Retrieved from: https://ojs.library.queensu.ca/index.php/surveillance-and-society/article/view/12911

[168] Higgins, E. Tory. 1996. "Activation: Accessibility, and Salience." *Social Psychology: Handbook of Basic Principles,* (133-168).

[169] https://archive.nyu.edu/bitstream/2451/14961/2/USEDBOOK19.pdf; Hu, Hanyang, Shaowei Wang, Cor-Paul Bezemer, and Ahmed E. Hassan. 2019. "Studying the Consistency of Star Ratings and Reviews of Popular Free Hybrid Android and iOS Apps". *Empirical Software Engineering.* Retrieved from: https://www.researchgate.net/profile/Cor-Paul-Bezemer/publication/323858294_Studying_the_Consistency_of_Star_Ratings_and_Reviews_of_Popular_Free_Hybrid_Android_and_iOS_Apps/links/5ab0140a0f7e9b4897c1d32d/Studying-the-Consistency-of-Star-

Ratings-and-Reviews-of-Popular-Free-Hybrid-Android-and-iOS-Apps.pdf; Luca, Michael. 2016. "Reviews, Reputation, and Revenue: The Case of Yelp". *Harvard Business School, Working Paper 12-016.* Retrieved from: https://www.hbs.edu/ris/Publication%20Files/12-016_a7e4a5a2-03f9-490d-b093-8f951238dba2.pdf

[170] Lizardo, Omar. 2017. "Improving Cultural Analysis: Considering Personal Culture in its Declarative and Nondeclarative Modes". *American Sociological Review,* 82(1), 88-115.

[171] Collins, P. Hill, and Sirma Bilge. 2020. *Intersectionality*. John Wiley & Sons.

[172] Goffman, Erving. 2021. *Ibid.*

[173] Li, Yuan, Haowen Chen, Yi Liu, and Mike W. Peng. 2014. "Managerial Ties, Organizational Learning, and Opportunity Capture: A Social Capital Perspective". *Asia Pacific Journal of Management,* 31. Retrieved from: https://personal.utdallas.edu/~mxp059000/documents/Peng14APJM_LiChenLiu_31.pdf

[174] Mahoney, Martha R. 1995. "Segregation, Whiteness, and Transformation". *University of Miami School of Law Institutional Repository,* 1659. Retrieved from: https://repository.law.miami.edu/cgi/viewcontent.cgi?article=1389&context=fac_articles

[175] Lipsitz, George. 1995. "The Possessive Investment in Whiteness: Racialized Social Democracy and the 'White' Problem in American Studies". *American Quarterly,* 47(3), 369-387. Retrieved from: https://www.history.ucsb.edu/wp-content/uploads/PossessiveInvestmentInWhiteness.pdf

[176] Meghji, Ali. 2017. "A Relational Study of the Black Middle Classes and Globalised White Hegemony: Identities, Interactions, and Ideologies in the United States, United Kingdom, and South Africa". *Sociology Compass,* 11(9).

[177] Dedrick, Asante-Muhammad, and Sally Sim. 2020. "Racial Wealth Snapshot: Immigration and the Racial Wealth Divide". *National Community Reinvestment Coalition.* Retrieved from: https://ncrc.org/racial-wealth-snapshot-immigration-and-the-racial-wealth-divide/; Burton, Linda M., Eduardo Bonilla-Silva, Victor Ray, Rose Buckelew, and Elizabeth H. Freeman. 2010. "Critical Race Theories, Colorism, and the Decade's Research on Families of Color". *Journal of Marriage and Family,* 72, 440-459. Retrieved from: https://asset-pdf.scinapse.io/prod/2039830625/2039830625.pdf

[178] Edlund, Lena, and Wojciech Kopczuk. 2007. "Women, Wealth, and Mobility". *National Bureau of Economic Research, Working Paper 13162.* Retrieved from: https://www.nber.org/system/files/working_papers/w13162/w13162.pdf

[179] Chandar, Bharat, Uri Gneezy, John A. List, and Ian Muir. 2019. "The Drivers of Social Preferences: Evidence From a Nationwide Tipping Field Experiment". *National Bureau of Economic Research, Working Paper 26380.* Retrieved from: https://www.nber.org/system/files/working_papers/w26380/w26380.pdf

[180] Kern, Julie H., and Alicia A. Grandey. 2009. "Customer Incivility as a Social Stressor: The Role of Race and Racial Identity for Service Employees". *Journal of Occupational Health Psychology,* 14(1), 46-57. Retrieved from: https://psycnet.apa.org/record/2008-19186-005; Cottingham, Marci D., Austin H. Johnson, and Rebecca J. Erickson. 2018. "'I Can Never Be Too Comfortable': Race, Gender, and Emotion at the Hospital Bedside". *Qualitative Health Research,* 28(1), 145-158. Retrieved from: https://journals.sagepub.com/doi/pdf/10.1177/1049732317737980

[181] Rogers, Brishen. 2017. "The Social Costs of Uber". *University of Chicago Law Review,* 82(1). Retrieved from: https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1037&context=uclrev_online

[182] Raval, Noopur and Paul Dourish. 2016. *Ibid.*

[183] Lin, Chia-Ying, and Ruiyun Fang. 2021. "The Potential of Gig Economy in the Area of Gender Equality". *Advances in Social Science, Education and Humanities Research,* 632. Retrieved from: https://www.atlantis-press.com/article/125968652.pdf; Piracha, Awais, Rachel Sharples, Jim Forrest, and Kevin Dunn. 2019. "Racism in the Sharing Economy: Regulatory Challenges in a Neo-Liberal Cyber World". *Geoforum,* 98, 144-152. Retrieved from: https://www-sciencedirect-com.proxy.library.ucsb.edu:9443/science/article/pii/S0016718518303373

[184] Hanrahan, Benjamin V., Ning F. Ma, and Chien W. Yuan. 2017. "The Roots of Bias on Uber". *Proceedings of the 15th European Conference on Computer-Supported Cooperative Work.* Retrieved from: https://arxiv.org/ftp/arxiv/papers/1803/1803.08579.pdf

[185] Uber. 2022. *Welcoming All Immigrants and Races.* Retrieved from: https://www.uber.com/us/en/community/diversity-and-inclusion/immigrants-and-race/

[186] Sapse, Alfred T. 1997. "Cortison, High Cortisol Diseases, and Anti-Cortisol Therapy". *Psychoneuroendocrinology,* 22(1), 3-10. Retrieved from: https://www.sciencedirect.com/science/article/pii/S0306453097000243

[187] Richman, Laura S. and Charles Jonassaint. 2008. "The Effects of Race-Related Stress on Cortisol Reactivity in the Laboratory". *Annals of Behavioral Medicine,* 35(1), 105-110. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763623/?TB_iframe=true&width=370.8&height=658.8; Dickerson, Sally S., and Margaret E. Kemeny. 2004. "Acute Stressors and Cortisol Responses: A Theoretical Integration and Synthesis of Laboratory Research". *Psychological Bulletin,* 130(3), 355-391. Retrieved from: https://www.proquest.com/docview/614394096?parentSessionId=9cu1wOLSdGBqaTyOwKtWcs0Eib07dSNyx%2FBP0ay0k1A%3D&pq-origsite=primo&accountid=14522

[188] Bartel, Emma, Ellen MacEachen, Emily Reid-Musson, Samantha B. Meyer, Ron Saunders, Philip Bigelow, Agnieszka Kosny, and Sharanya Varatharajan. 2019. *Ibid.*

[189] Chandar, Bharat, Uri Gneezy, John A. List, and Ian Muir. 2019. *Ibid.*

[190] Belt, Vicki, Ranald Richardson, and Juliet Webster. 2002. "Women, Social Skill, and Interactive Service Work in Telephone Call Centres". *New Technology Work and Employment,* 17(1). Retrieved from: https://www.researchgate.net/profile/Vicki-Belt/publication/227545426_Women_Social_Skill_and_Interactive_Service_Work_in_Telephone_Call_Centres/links/5c9b45df299bf1116949c5ba/Women-Social-Skill-and-Interactive-Service-Work-in-Telephone-Call-Centres.pdf

[191] Greenwood, Brad, Idris Adjerid, Corey M. Angst, and Nathan L. Meikle. 2022. *Ibid.*; Glendon, Ian, Lisa Dorn, Roy Davies, Gerald Mathews, and Ray G. Taylor. 1996. *Ibid.*

[192] Cook, Cody, Rebecca Diamond, Jonathan Hall, John A. List, and Paul Oyer. "The Gender Earnings Gap in the Gig Economy: Evidence From Over a Million Rideshare Drivers". *National Bureau of Economic Research, Working Paper 24732.* Retrieved from: https://www.nber.org/system/files/working_papers/w24732/w24732.pdf

[193] Almoqbel, Mashael Y., and Donghee Y. Wohn. 2019. "Individual and Collaborative Behaviors of Rideshare Drivers in Protecting Their Safety". *Proceedings of the ACM on Human-Computer Interaction,* 3. Retrieved from: https://www.researchgate.net/profile/Donghee-Wohn/publication/333771805_Understanding_Safety_Concerns_and_Protection_Behaviors_of_Rideshare_Drivers/links/60de1a87a6fdccb745fbaee5/Understanding-Safety-Concerns-and-Protection-Behaviors-of-Rideshare-Drivers.pdf

[194] Gridwise. 2022. *Why Rideshare and Delivery Drivers Get Deactivated and How to Get Reactivated.* Retrieved from: https://gridwise.io/why-rideshare-and-delivery-drivers-get-deactivated-and-how-to-get-reactivated; Ladegaard, Isak, Alexandrea J. Ravenelle, and Juliet Schor. 2021. "'God is Protecting Me… And I Have Mace': Defensive Labour in Precarious Workplaces". *The British Journal of Criminology,* 20, 1-17. Retrieved from: https://drive.google.com/file/d/1dUDrWA5aQb4Ix3mSeLWxFN9q9mcsfd9n/view

[195] Almoqbel, Mashael Y., and Donghee Y. Wohn. 2019. *Ibid.*

[196] Comunello, Francesca, Mireia F. Ardevol, Simone Mulargia, and Francesca Belotti. 2016. "Women, Youth, and Everything Else: Age-Based and Gendered Stereotypes in Relation to Digital Technology Among Elderly Italian Mobile Phone Users". *Media, Culture & Society* 39(6). Retrieved from: http://openaccess.uoc.edu/webapps/o2/bitstream/10609/78725/7/women_youth_pre_editing_v2016.pdf; Liebe, Ulf, and Heiko Beyer. 2019. "Examining Discrimination in Everyday Life: A Stated Choice Experiment on Racism in the Sharing Economy". *Journal of Ethnic and Migration Studies,* 47(9). Retrieved from: https://www.tandfonline.com/doi/pdf/10.1080/1369183X.2019.1710118?casa_token=zIPJVgOxyrUAAAAA:_q-UthrQTbpKwX4EtjRir604OWLQ7zgnev2-DKNvterwIH1JQCQ1X5EAiLLUQ16foTzo2TrpgSscbQ

[197] Lee, Sooyeon, Bjorn Hubert-Wallander, Molly Stevens, and John M. Carroll. "Understanding and Designing for Deaf or Hard of Hearing Drivers on Uber". *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems.* Retrieved from: https://dl.acm.org/doi/fullHtml/10.1145/3290605.3300759

[198] Blasi, Gary, and Jacqueline Leavitt. 2006. *Ibid.*

[199] Pitt, Christine, Theresa Eriksson, and Kirk Plangger. 2019. "Customer Goodwill: How Perceived Competence and Rapport Influence eWOM's Diagnosticity of Peer-to-Peer and Professional Access-Based Services". In *Handbook on the Sharing Economy,* edited by Russell W. Belk, Giana M. Eckhardt, and Fleura Bardhi. Retrieved from:

https://kclpure.kcl.ac.uk/portal/files/105926221/Pitt_Eriksson_Plangger_Customer_Goodwill_Accepted_Version.pdf

[200] Hua, Julietta, and Kasturi Ray. 2017. "Beyond the Precariat: Race, Gender, and Labor in the Taxi and Uber Economy". *Journal for the Study of Race, Nation, and Culture,* 24(2). Retrieved from: https://www.tandfonline.com/doi/abs/10.1080/13504630.2017.1321721