Gig work as migrant work: The platformization of migration infrastructure

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Abstract
With markets concentrating predominantly in and around large cities, gig platforms across the globe seem to depend as much on the cheap labor of migrants and minorities as on investment capital and permissive governments. Accordingly, we argue that there is an urgent need to center migrant experiences and the role of migrant labor in gig economy research, in order to generate a better understanding of how gig work offers certain opportunities and challenges to migrants with a variety of backgrounds and skill levels. To fill this research gap, this article examines why migrant workers in Berlin, Amsterdam, and New York take up platform labor and how they incorporate it into their everyday lives and migration trajectories. Additionally, it considers the extent to which gig platforms are emerging as actors in the political economy of migration, as a result of how they absorb migrant labor and mediate migrant mobilities. We move beyond the existing parameters of gig economy research by engaging with two strands of literature on migration and migrant labor that, we feel, are particularly useful for framing our analysis: the autonomy of migration approach and the migration infrastructures perspective. Combining these conceptual lenses enables us not only to critically situate migrant gig workers' experiences but also to identify a broader development: the platformization of low-wage labor markets that are an integral component of migration infrastructures.

Keywords
Migrant labor, platforms, autonomy of migration, migration infrastructure, migrant mobility

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Introduction

What drives gig economies around the world? What factors may account for their growth? The answer to these questions should surely include the deep financialization of the platform economy and how gig platforms have been—and continue to be—able to attract investment capital, enabling them to undercut their competitors and continue operating despite often mind-boggling losses (Rahman and Thelen, 2019). Investment capital also bankrolls this industry's litigation costs and lobbying efforts, which have allowed gig economy companies to frame and manipulate legislative proposals in by and large already lax regulatory environments (Pinto et al., 2019). Indeed, the global failure to properly regulate gig platforms is another factor that should be included in our answer. Yet there is a third major driver behind the gig economy's success that has so far received less scholarly attention, even as media outlets are slowly catching on: migration (Alderman, 2019; Bandeira, 2019; Markham, 2018).

With markets concentrating predominantly in and around large cities, it increasingly appears that gig platforms across the globe depend as much on the labor of migrants and minorities as on investment capital and permissive governments. While reliable statistical data on the share of migrant workers in the gig economy is hard to obtain, researchers have begun to document their prevalence as well as their plight. Recent scholarship has focused especially on on-demand food delivery and domestic cleaning work across cities in Europe (Altenried, 2019; Altenried et al., 2020; Tassinari and Maccarrone, 2020), Latin America (Velasco and Martínez, 2020), and North America (Lam and Triandafyllidou, 2021). In China and India too, rural to urban migration supplies a steady flow of platform workers in the care, food delivery, and logistics sectors (Chen, 2019; Iqubbal, 2021; Rathi and Tandon, 2021; Raval, 2020; Sun and Chen, 2021). Platforms tap into this readily available supply of migrant labor to service market demand in a flexible manner, extracting surplus value by keeping labor costs low and providing minimal labor protections (Holtum et al., 2021; Veen et al., 2020). The movement of people within and across borders in search of work and a better future thus seems to constitute a critical condition ensuring the existence of urban gig economies. So what may account for this situation? What makes migrants try their luck on gig platforms, despite the well-documented precarity of gig work? And how do they incorporate these platforms into their everyday lives and migration trajectories? These are some of the questions we will tackle in this article.

Research on gig economies and platform labor have greatly contributed to our understanding of the business models, legal arrangements, and management techniques that enable platform companies to extract maximum value from gig workers while taking little to no responsibility for their physical, mental, or economic security (e.g. Chen, 2018; Vallas and Schor, 2020; Wood et al., 2019). While we are indebted to this body of literature, it generally offers us little guidance when trying to comprehend the appeal of gig platforms for migrants navigating new or already deeply familiar urban environments. There is an urgent need to center migrant experiences and the role of migrant labor in gig economy research, in order to generate a better understanding of how gig work offers certain opportunities and challenges to migrants with a variety of backgrounds and skill levels (Van Doorn, 2020). Additionally, it is important to investigate whether and how gig platforms are emerging as new players in the political economy of migration, for instance by absorbing migrant labor and mediating migrant mobilities in a way similar to low-wage employers operating in migrant-dominated sectors. Building on the scarce scholarship on migrant gig workers referenced above, this article takes on these tasks by presenting findings from 2 years of ethnographic fieldwork among app-based delivery workers and domestic cleaners in three cities: New York, Amsterdam, and Berlin. To conceptually frame these empirical findings and derive a theoretical argument from them, we move beyond the existing parameters of gig economy research by engaging with two strands of literature on migration and migrant labor that, we feel, are

particularly illuminating when applied to gig platforms: the autonomy of migration (AoM) approach and the migration infrastructures perspective.

While these are not the only strands of research we draw on, we highlight them as two key critical frameworks that help us place migrant gig workers' experiences, motivations, and trajectories in their broader economic, regulatory, and material contexts. By "context" we mean the specific (infra)structures that enable as well as constrain migrant mobilities and their ability to survive. The strength of the AoM literature is how it places migrants' agency and subjectivity at the center of its theoretical and political concerns while simultaneously accounting for the borderscapes and political economies of transnational capital that shape migrant lives (Casas-Cortes et al., 2015; Mezzadra, 2011; Olmos, 2019; Papadopoulos and Tsianos, 2013; Scheel, 2019). Meanwhile, the strength of the migration infrastructures perspective is its detailed attention to the distributed nature of agency within the "various socio-technical assemblages" that mediate migration trajectories (Lin et al., 2017; Lindquist and Xiang, 2018: 13; Xiang and Lindquist, 2014). Migrants do not just move by themselves; they are moved as well. While their conceptual focus differs, both approaches are essentially concerned with interrogating the tensions between agency and structure, or determination, and between mobility and immobility—both of which are pivotal to the analysis presented here.

To be sure, this combination of critical approaches has previously been utilized to study the dynamic between the practices through which migrants assert their rights and mobility, and the administrative and regulatory mechanisms that try to channel and control them (Altenried et al., 2018; Amelung et al., 2020). Our specific aim is to mobilize these approaches from migration studies to advance gig economy research, situating them in a novel empirical context (cf. Altenried et al., 2020). As we will argue based on our research findings, gig platforms are now part of a "multitude of 'platforms of arrival and take-off' within, against, and beyond the infrastructures of the state" (Meeus et al., 2019: 2). Compared to other types of actors that "select, give direction to, and retain or accelerate certain migratory subjects" (ibid.: 15), platform companies are less beholden to state apparatuses than to international finance capital, which affords them relatively more leeway to engage in regulatory arbitrage. Still, it would be a mistake to blame the gig economy's predatory practices on the state's inability to govern it. Gig platforms do not just operate against and beyond the state; they navigate *within* its regulatory purview and respond to the racialized and gendered logics of subordination, stratification, and exclusion embedded in existing laws and policies. Accordingly, as we show, they generate new chances and risks for migrant workers whose mobility is often regimented and/or curtailed, resulting in the formation of an app-based alternative to—or extension of—existing urban "arrival infrastructures" (Meeus et al., 2019). Like other components of arrival infrastructures that enable migrants to generate an income, this app-mediated segment is "Janus-faced": "On the one hand, it welcomes newcomers and contributes to making the city hospitable. On the other hand, it rejects, deceives and disappoints them, forcing them to remain mobile" (Felder et al., 2020: 55)—or, as we also demonstrate, contributing to their immobility.

The remainder of this article is divided into four sections. The following section frames our analysis conceptually, by surveying the AoM and migration infrastructures literatures and highlighting their most relevant insights for the study of platform-mediated gig work. We then situate our analysis within the context of a larger comparative study on platform labor and account for the empirical research that grounds our argument. This is followed by a three-part section that presents our analysis of migrant workers' experiences with platform labor. Finally, the last section offers some concluding reflections on the potential repercussions of a partial and uneven platformization of migrants' urban arrival infrastructures.

Framing the analysis: Migration scholarship as conceptual lens to study platform labor

In this section, we review recent migration scholarship on the interplay between the mobility of migrant labor and the state- and capital-governed regimes that attempt to control this mobility in the pursuit of profit and order, in order to build the analytical framework for the interpretation of our own research findings. As we will argue, two strands of scholarship are especially relevant for the study of platform-mediated gig work: the AoM approach, which takes migrants' subjectivity and agency as an entry point into studying the structural conditions that shape migration; and the migration infrastructure perspective, which examines how migration is accomplished through assemblages of interconnected actors, processes and technologies. Whereas the former highlights the forces that drive people to move, the latter thus emphasizes how such mobility is made possible.

Moving: The mobility of labor and capital

Migrant agency and mobility are central to the AoM approach as it was developed by critical migration and border studies scholars in the 1990s (Scheel, 2019). AoM scholars criticized migration studies' fixation on sovereignty, securitization, and border control regimes that framed migrants as a threat. Rejecting this view, AoM instead examines "migratory movements and conflicts in terms that prioritize the subjective practices, the desires, the expectations, and the behaviors of migrants themselves" (Mezzadra, 2011: 121). This has more recently influenced scholars to consider migrants' desires, aspirations, and emotions as factors that drive migration, rather than conceptualizing migration solely in terms of macroeconomic dynamics or reading migrant behaviors as expressing economically rational choice (Carling and Collins, 2018; Collins, 2018). While recognizing that migrant practices often exceed capture mechanisms deployed to manage migration, AoM also holds that such mechanisms evolve and result in new strategies for the containment and regulation of migrants. The constant negotiation between affectively charged forms of migrant agency and the institutional forces that shape their (labor market) mobility is of particular interest to our own study, as will become clear below.

Emerging from the autonomous Marxist tradition, the foundational tension that AoM explores is that between the mobility of labor vis-à-vis that of capital (Olmos, 2019). Control over labor's mobility is recognized as an instrumental force in the development of global capitalism (Mezzadra, 2011), whereby migrant labor, in particular, becomes an object of intense logistical control, calculation, and valorization at the service of local and national labor markets (Altenried et al., 2018). Phrased differently, capital tries to channel migrant mobility by rendering "the speed of absorption [of migrant labor] into the local labour markets compatible with the speed of flows of mobile populations" (Papadopoulos and Tsianos, 2013: 180). As recent gig economy research has suggested, on-demand platforms have emerged as critical infrastructures for such absorption, integrating migrants into low-wage labor markets based on principles of efficiency, self-dependency, and flexibility (Altenried et al., 2020; Lam and Triandafyllidou, 2021). Additionally, scholars have analyzed how these platforms accommodate not only the speed of contemporary migrant flows but also that of global finance capital (Van Doorn and Badger, 2020; Langley and Leyshon, 2017).

Despite AoM's sustained attention to the global "multiplication of labor" (Mezzadra and Neilson, 2013), or the way that labor's "radical heterogeneity" is stratified in (border) regimes of regulation and exploitation (Mezzadra, 2016: 35), it has been less explicitly concerned with the racialized/ing and gendered/ing aspects of such stratification (Olmos, 2019; Scheel, 2019). Furthermore, as is the case for migration studies more generally, its critical focus on mobility tends to obstruct a more fine-grained account of how migrant mobility is not just managed and

monitored but "blocked, stuck, and constrained in gender-specific ways that intersect with nationality, citizenship, race, ethnicity, sexuality, and socio-economic class" (Bélanger and Silvey, 2020: 3424). In other words, the space between mobility and immobility is a continuum at once thoroughly classified and rife with ambiguity. At each end "lies a wide range of experiences and degrees of ability to choose one's path, as well as a wide spectrum of desires and conditions under which people stay or leave" (ibid.: 3428). Accordingly, our own analysis seeks to account for forms of im/mobility that impact migrant lives not just from the top-down (i.e. crafted by state and capital) but also sideways and from the inside out (i.e. social relations, affective dispositions).

Finally, a related limitation of the AoM literature is how its political economy lens isn't quite trained to grasp the sociotechnical infrastructures of migration, or the manner in which migrant im/mobility is actually accomplished in practice. While sociological approaches to migration have already tackled how individual employers and labor market intermediaries shape migrants' trajectories, we believe that there is much to gain by supplementing AoM's insights with a migration infrastructure perspective that examines the concatenated "middle space" of migration (cf. Altenried et al., 2018).

Being moved: Distributed agency in medias res

Drawing inspiration from science and technology studies, the anthropological research that has pioneered the migration infrastructure perspective turns our attention to how migration is enacted through "systematically interlinked technologies, institutions, and actors that facilitate and condition mobility" (Xiang and Lindquist, 2014: S124). Rather than studying migration simply as the movement of migrants, it reveals the "back-stage" operations of this assemblage through which migrants are moved. Agents, brokers, visa regimes, bureaucratic processes, and record-keeping all *mediate* migration, routing migrants' movements from one locality to the next to meet a variety of (institutional and interpersonal) objectives. So far, this perspective has been most prevalent in research examining the operations of labor brokers and agents matching migrants with employers in the South-East Asian context (Deshingkar, 2019; Picherit, 2019). These migration intermediaries are shown to frequently act in ways that exacerbate and exploit migrants' precarity (Wee et al., 2019).

While the migration infrastructure perspective aids our understanding of the various actors entangled in the transnational management of migration, it risks decentering migrants and their experiences from the analysis (Carling and Collins, 2018). The concern with the procedural and exploitative dimensions of intermediation can elide considerations of how migrants may leverage the infrastructures composed to control their movement. For instance, refugees have been shown to track the progress of their asylum applications and maintain contact with family members using their smartphones, while utilizing apps to generate an income (Gough and Gough, 2019; Xie and Witteborn, 2019). Moreover, a logistical focus on how migrants are deployed by others can obscure not just their agency but also how migration trajectories are marked by moments of (planning for) arrival, departure, and transit—all of which frequently occur in urban environments. The complementary literature on "arrival infrastructures" is welcome in this regard. Arrival infrastructures constitute the "parts of the urban fabric within which newcomers become entangled on arrival, and where their future local or translocal social mobilities are produced as much as negotiated" (Meeus et al., 2019).

Importantly, such infrastructures are not equally accommodating to all migrants, whose ability to find some measure of stability upon arrival depends on the uneven accessibility of existing resources (Felder et al., 2020). Gig platforms, as we show in our analysis below, have proven to be readily accommodating to migrants looking for a quick income stream. Nearly all our

interviewees found it relatively easy to sign up with platform companies and could usually start working shortly after "onboarding". This was true even for migrant workers who faced substantial impediments, such as language barriers and the absence of required documentation. We found that platforms companies' low and (initially) scantly enforced entry requirements, peer support, and extra-legal workarounds have all contributed to the emergence of gig platforms as accessible components of migrant workers' arrival infrastructure in the cities included in our study.

In close proximity to the migration and arrival infrastructure literature, Collins' (2020) recent theorization of "platform migration" likewise invites attention to the technologically mediated middle spaces and pathways of migration. "Platforms", for Collins, are the multitude of actors, networks, and institutions that enact migration, with varying impacts on migrant trajectories. Although this multitude includes gig platforms, she is careful not to limit her platform notion to digital infrastructures, instead opting to explore the full conceptual range of the term (cf. Guyer, 2016). While appreciative of this take, we believe that the study of gig platforms and app-based work can contribute significantly to our understanding of the range and nature of urban migration/arrival infrastructures—particularly with respect to low-wage labor markets and how these are becoming increasingly mediated by software, datafication, and finance capital. Phrased differently, in this article we argue that urban migration/arrival infrastructures are increasingly, albeit partially and unevenly, subject to platformization. According to Plantin et al. (2018: 301), "the rise of ubiquitous, networked computing and changing political sentiment have created an environment in which platforms can achieve enormous scales, co-exist with infrastructures, *and in some cases compete with or even supplant them*" (emphasis in original). This has resulted in a dual movement combining the "infrastructuralization of platforms" with a "platformization of infrastructure" (ibid.). Applied to migration, we should ask what happens when gig platforms, with their particular accumulative/extractive logics driven by investment capital and datafication, come to function as extensions of—or provide alternatives to—existing infrastructures mediating migrant labor.

This, finally, returns us to AoM and its attention not only for the structural tensions between labor and capital but also for the subjective experiences of migrant workers. Together with the migration/arrival infrastructure perspective, AoM inspires us to investigate how migrants' constrained opportunities intersect with the low institutional and practical barriers to app-based gig work, generating an abundant labor supply for platform capitalism to exploit. At the same time, AoM also enjoins us to highlight how migrants from various walks of life take up platform labor in efforts to meet their short-term needs and long-term goals.

Situating the study: Research design and methodological issues

We derive our argument and analysis from the findings of a comparative research project that investigates how digital platforms are transforming low-wage labor markets in Amsterdam, Berlin, and New York City, focusing specifically on "on-demand" food delivery and domestic work. Both industries have historically been characterized by informality and exemption from—or absence of—regulatory frameworks, which perpetuates the gendered and racialized exploitation of the immigrants and minorities who frequently take up these types of jobs (Gutiérrez-Rodríguez, 2010; Lee, 2018; McGrath and DeFilippis, 2009). Although regulatory conditions vary across national settings, gig economy companies have taken advantage of this overall *status quo* to quickly scale their businesses. The three cities were chosen because they are each prominent tech hubs with thriving startup cultures and were early testbeds for a variety of gig and sharing economy platforms, making them suitable sites for studying the long-term developments and impacts of platformization. At the same time, these cities can be usefully compared given their different socio-spatial characteristics as well as their distinct cultural, political economic, and legal climates—which are differently governed on urban, regional, and national scales.

In each city, Van Doorn conducted 8 months of ethnographic fieldwork, resulting in a total of 151 semi-structured in-person interviews with app-based food delivery workers and cleaners (among other types of data, such as field notes). Fieldwork started in New York City in February of 2018 and proceeded in Berlin from October 2018 onwards. The final leg of the fieldwork period took place in Amsterdam between May 2019 and January 2020. The empirical research thus took place before the advent of the COVID-19 pandemic, although Van Doorn did follow-up with several interviewees to inquire how the pandemic affected them—mostly via private messaging apps. Recruitment for the interviews took place offline as well as online. In public locations across the three cities, Van Doorn distributed flyers that explained the aims of the study and offered a $15/euro gift card as compensation for participants' time. This method proved to have a limited yield, especially for recruiting domestic workers, so more effort was put into online recruitment, primarily via gig work-themed Facebook groups, LinkedIn, Craigslist, and other online markets for goods and services.

While the research did not start out with a focus on migrant labor, Van Doorn specifically increased recruitment efforts in Facebook groups dedicated to immigrant communities in Berlin and Amsterdam once it became apparent that a large share of the gig workers in these cities was migrants. They also engaged in snowball sampling, relying on the migrant social networks that they had access to. Although a large number of non-White and migrant food delivery workers had already been salient during fieldwork in New York, Van Doorn had at that time not yet structurally thematized migration in relation to gig work. Moreover, it proved to be very difficult to include members of the city's Latino, Chinese, Indian, Bangladeshi, and West African gig worker communities in the study, due to language barriers and a general apprehension among (undocumented) migrants to disclose personal information to outsiders. Only on one occasion was Van Doorn able to interview two Mexican delivery workers in Spanish, with the help of an interpreter. In all other instances, the interviews were conducted in English. Language barriers were much less of an issue in Berlin and Amsterdam, where most migrants spoke some workable level of English, German, or Dutch (the three languages spoken by Van Doorn).

In Berlin, 24 out of 25 interviewed cleaners and 24 out of 30 interviewed food delivery workers were migrants, the majority having arrived from eastern and southern European countries as well as Chile and Argentina. In Amsterdam, 11 out of 12 interviewed cleaners and 21 out of 28 interviewed delivery workers were migrants, again mainly from countries in eastern and southern Europe but also from Brazil as well as India, Pakistan, and Bangladesh (mostly international students). In New York, 6 out of 34 interviewed couriers were immigrants from Central America and West Africa, with the sample consisting mainly of African American and Latino participants. Similarly, 19 out of 22 interviewed cleaners were African American and Latino/a, with no immigrants featured in this part of the sample. This absence can be attributed to how the abovementioned language barriers intersected with the general difficulty of recruiting app-based domestic cleaners, who are much less publicly visible than delivery workers. All research participants were formally interviewed once, but in many cases, these were followed up by informal conversations both on- and offline.

Multiple platforms were included in the larger study, but in this article, we concentrate on domestic services platform Helpling in Amsterdam and Berlin, and food delivery platform Relay in New York City. Helpling was founded in Berlin, in 2014, and operates in over 200 cities in 10 countries across 3 continents. Since its inception, it has raised a total of $95M in funding from 12 investors. Relay was founded in New York, also in 2014, and operates in several cities along the East Coast of the United States. Like Helpling, it is privately traded and has received funding from a small number of investors, yet more details regarding its financial history and status are not publicly available. We focus on Helpling and Relay because these were the main platforms used by the three migrants whose trajectories we document below. Navigating between our

recognition of inevitable space constraints and our desire to flesh out—and thereby do justice to—the stories and experiences of those who participated in our research, we selected these three migrant gig workers based on how they (1) represented diverging backgrounds and migration trajectories, (2) offered detailed accounts that have allowed us to generate a nuanced analysis of gig platforms' impact on migrant mobilities, and (3) addressed issues and concerns that were salient in our data. Despite the heterogeneity of the research participants' demographic composition as well as their experiences across cities, platforms, and types of work, the purpose of this article is to highlight some overarching dynamics and concerns, which we have narratively organized into the three thematic sections presented below: "Platforms for arrival", "Platforms of precarity", and "Graduating from the gig?".

Platforms for arrival

Rita, 40, moved to Amsterdam from Portugal about 4 years ago. She dropped out of college, in Lisbon, 2 years into her fine arts program. Since then, she has meandered from one menial job to the next. In general, she finds social interaction stressful and prefers work that involves limited contact with customers and bosses. Before Rita's arrival, her boyfriend had already settled in Amsterdam a few months earlier, after finding an entry-level job as a software developer. While he has the means to support her financially, like her parents had done back in Portugal, Rita had a strong desire to finally be economically independent. As a college dropout who did not speak Dutch, however, she struggled to find employment and eventually accepted an informal job at a hotel, where she lasted only a few days because the strenuous work and low pay weren't worth the potential legal trouble. At the time she had started her formal "Inburgering" (integration) trajectory and signed up for a Dutch language course. Through someone in the course she learned about a mentorship program organized by Zij aan Zij (Side by Side); an initiative of the Salvation Army that provides shelter and labor market support for precarious women. Although she was not financially destitute, like some of the other immigrant women in her group, she decided to join the program because she figured it would help her find a suitable job.

While Rita felt disappointed that Zij aan Zij ultimately did not really improve her position on the Dutch labor market, she was happy that a program manager introduced her to Helpling. Besides pointing her to the platform, this person also assisted her during the "onboarding" process by calling the company to inquire about the Statement of Conduct document that was requested and then sorting out the administrative process when Rita felt too overwhelmed:

> They called them [Helpling] because I was struggling with it and I was a little like "I can't make it, could you help me?" I was kind of, I was actually ready to give up but I think they knew I really wanted to work and they helped me with that.

As it turned out, Helpling was not as interested in her past conduct as Rita had feared. While she worried that an incident back in Portugal would perhaps turn up in the company's background check, she was relieved to receive quick access to the platform after submitting a copy of her ID card and answering some questions over the phone about her cleaning experience. She admitted to hardly having experience, but again the Helpling representative did not seem to mind. Setting up her user account was likewise "easy and straightforward" and, once she accumulated some regular clients, she found the work quite comfortable due to its relative lack of social contact: "I have the client's keys, I enter in the house, I do my stuff and leave. I can spend days without speaking to anyone." Helpling thus presented a low-fuss income opportunity that offered Rita a measure of financial independence and mental peace, which helped her feel more at ease in a

new city. With Helpling, she managed not just to cope but to coast through life like she had frequently desired, not having to worry about demanding bosses or customers.

Zij aan Zij and Helpling should be understood as two distinct components of the urban arrival infrastructure that Rita traversed after moving to Amsterdam, whereby the former's humanitarian logic of operation intersected with the latter's commercial and technological rationalities (Meeus et al., 2019; Xiang and Lindquist, 2014). Infrastructure, as Collins (2020: 5) notes, "is not simply a background to migration but rather [an assemblage of] dynamic, shifting and affective platforms that are involved in the ongoing production of migrant mobilities." We want to foreground the affective dimension of these platforms in particular, given that both Zij aan Zij and Helpling impacted Rita's migration trajectory by alleviating her trepidations with respect to "integrating" into Dutch society, navigating its labor market, and becoming financially independent. Without them, Rita admitted, she would have felt worse about her situation in Amsterdam and might have already moved back to Portugal. While, as we address below, she soon became critical of Helpling's business model and management, Rita has stayed active on the platform also because she experienced her employment options in the Netherlands to be extremely limited.

Compared to Rita, Natalia (39) was feeling much more confident about her labor market position when she arrived in Berlin for the first time. She enjoyed an upper-middle-class upbringing, is well-educated, and has built up a solid CV. Natalia is from Brazil, where she completed a law degree and started working for a large consultancy company, but soon grew disillusioned with the corporate environment. After taking a break for a couple of years, supported financially by her parents, she decided to switch to a career in journalism. She completed a journalism program, interned at a reputed travel magazine, and maintained a blog about her sex life. As her blog grew in readership, she got more invested in the topic, which encouraged her to complete two certificate programs in Sex Education and Gender and Sexuality. However, Natalia had a hard time finding work in Sex Education in Brazil. Being of Portuguese descent, she decided to come to Portugal and arrange dual citizenship, so that she could move to the UK on an EU passport. She was sure that in London she'd find more suitable employment options. Then Brexit happened, complicating her plans and—after submitting her paperwork in Lisbon—she decided to try her luck in Berlin for a while. The plan was to look for jobs in her field while learning German and getting to know the city, yet the language turned out to be harder than she had anticipated—as was finding decent work.

When none of her job applications resulted in a callback and rent was due, she decided to respond to one of the Helpling ads she had seen repeatedly while participating in Berlin-focused Facebook groups. Whereas Rita could count on the material support of her boyfriend and Zij aan Zij, Natalia's arrival infrastructure was largely virtual. Like Rita, she was surprised that the company did not meet with her in person and expected very little from her in terms of documentation or work experience. But far from jumping at this low-threshold income opportunity, Helpling felt like a last-ditch option to Natalia, who considered the idea of cleaning people's homes deeply unappealing—similar to other highly educated migrant Helpling cleaners we interviewed (and see Wu, 2016):

> [W]ithin myself I was feeling horrible to be cleaning someone else's foyer […] I was a spoilt white woman from Brazil cleaning other people's, like I saw like the tables in all the office stables and I was like 'I should be sitting there'.

She quit right after that first cleaning and returned to Brazil disillusioned and depressed. Still, she did not delete her account because she wanted to hold open the possibility of coming back to Berlin and knew Helpling would offer a quick way to pay rent. Two months later, Natalia was back already and this time she pushed herself to get over her misgivings and try again:

> It was a switch in the middle of like, I was studying about women all the time and we are like so patron-
> ising, talking about poor women, you know poor women they have to do this, you know, like they
> should be saved you know… It was so white privilege you know, and then I realised I'm not white.
> I have no privilege, and I can't find a job in my area. So yeah that's what I have to do.

The realization that she was no longer White in Berlin, because the privileges associated with
Whiteness were not available to her there, made her painfully aware not only of her racialized
class identity but also of her condescension toward poor women of color doing domestic work.
Only once she stopped pitying these women could she stop pitying herself and do what was necessary
to survive in a foreign city. Natalia's experience with Helpling echoes Rita's encounter with Zij aan
Zij, to the extent that both attend us to how arrival infrastructures are embedded in gendered/ing and
racialized/ing social relations which they themselves co-shape. Despite marketing itself as a conveni-
ent side gig for whoever may need some extra cash, our research confirms Altenried et al.'s (2020)
finding that Helpling primarily functions as a platform for migrants with varying backgrounds and
migration trajectories but few income opportunities. As an ambiguous migrant "apportunity"
(Guyer, 2016), the company has thus become part of a broader industry consisting of formal and
informal intermediaries that connect migrants to feminized and racialized temp/gig work.

José, 37, has been navigating this industry for over two decades, as an undocumented immigrant.
He was born in Mexico, where, at the age of 13 years, he dropped out of school and started working as
a mechanic to help his parents make a living. Like many of his peers, he desired a fresh start in the
United States where, he imagined, he could work hard for about 5 years before returning to Mexico
and building a house with the money earned. When he was 17, some friends who were already in the
U.S. paid for a smuggler to help him cross the border. After a long and hazardous journey, he arrived
in New York and found jobs first in construction and then as a busboy in a restaurant. He then quickly
worked himself up to the position of line cook and he eventually ended up running the kitchen. When
José tried to initiate a strike to demand higher wages, however, he was fired on the spot. A rocky
period followed, during which he returned to Mexico for a while and relocated to different parts of
the deep south. He met his wife there and had two kids, but was forced to leave his home in
Alabama as a new administration there started cracking down on undocumented immigrants. He
moved back to New York and picked up where he left off, managing deliveries at the restaurant
where he used to work, until he got into a serious bike accident that took him out for some
months. After his convalescence, he found another job, this time at a bagel shop.

By then, José was expecting the birth of his third child and had learned that he had a son with an
ex-girlfriend in Mexico, making him realize that he urgently needed an additional source of income
to provide for all his dependents. So when the delivery guys at his shop told him about a company
called Relay that offered food delivery work via an app and required only a state-issued tax ID—
instead of a social security number—he decided to give it a try. He liked how this app-based work
not only boosted his income but enabled him to schedule his hours around his other job, allowing
him to improve his work-life balance despite having to work so much:

> I need to have something… I have to have, how do you call it? When you have everything organized?
> [Interviewer: Stability?] Yes, stability and something that you do every… a routine, I have to have a
> routine. Because I wanted to organize myself to work hard, work a lot, but still have time for my
> kids and this is very crucial.

Platform of precarity

Yet stability was difficult to achieve in José's life. The specter of deportation in Trump's America
hung over his head, informing everyday calculations of risks and opportunities. Despite New York

City's status as a sanctuary city, which helped to shield José from the most immediate dangers presented by ICE raids, the city administration has nonetheless engaged in targeted raids of its own, as part of its efforts to crack down on supposedly reckless food delivery workers—most of whom are (undocumented) migrants and minorities (Anzilotti, 2018). Adding to these compounded vulnerabilities, New York State's failure to regulate food delivery work and the platform companies that increasingly dominate this industry consolidated José's position as prey for Relay (DeVault et al., 2019). Meanwhile, Relay obviously makes its own calculations of risks and opportunities. Observing, on the one hand, the un(der)regulated growth of New York City's food delivery industry and, on the other, the potential labor supply embodied in the city's large population of undocumented migrants, the company saw a business opportunity just like scores of other low-road employers and intermediaries. Accordingly, it recruits couriers mostly among Mexican and other Central American social networks and classifies them as independent contractors to evade New York's labor and employment laws.

However, Relay's estimation that the structural vulnerability of this workforce would ensure their docility was proven erroneous, having been sued twice, in 2016 and again in 2017, when two Relay couriers accused the company of wage and overtime violations as well as tip theft (Aponte and Velasquez, 2020; Shaak, 2017). While the case was settled out of court and had no repercussions for Relay's business model, it did impact how it manages its couriers. Whereas José could previously work up to 60–70 h per week, nowadays the company caps his weekly hours at 40. Working more has become impossible (unless you borrow someone else's account, as other undocumented migrants in NYC did), yet working less can get him into trouble because it may delay his weekly access to the app-based work reservation system. As he explains: "The amount of hours you have is what's going to impact your time of reservation on Thursday […] If you are very close on the spot for 40 h [you get] the best time and choose when to work." If, conversely, you have worked fewer hours, your chances of choosing when to work the following week decrease and you may end up with only a small batch of leftover hours or no work at all. Additionally, this workload-based hierarchy is augmented by a stratification technique based on courier ratings (Relay uses a scale of 1–100):

> Okay, so if I'm reserving at nine in the morning but I get a 75 – and you could get a 75 if you do a good job, okay, because the app is not fair. But yeah, right, so I'll get a 75 and then we close week, and I didn't do 40 hours. Guess what? I'm not going to reserve […] at nine in the morning. They say I'm going to reserve maybe at 12 or 1pm but at that time, you've got no schedule. [*Interviewer*: not a good schedule?] Not even hours.

Complaining to Relay is unlikely to change anything, as the company just points to the objectivity of its algorithmic system: "It's the program, no responsibilities, so you fucked up but guess what? You could still work your way up to 99 again and then [we] will give you a good schedule." José's frustration with Relay's reservation system is palpable and widely shared among other research participants, especially because the company refuses to engage with couriers and avoids any accountability. This problem also pertains to how it handles complaints about tips couriers claim are due to them. Despite the lawsuits, Relay apparently still does not always process tips correctly and their response varies between disregard and retaliation. As José illustrates:

> One day I went, big order, he gives me the receipt. I go deliver it, I'm doing [unintelligible]. No tip, but I saw on the receipt a $10 tip. Every now and then, he [Relay] fucks you up like that […] Sometimes they fix it, sometimes they don't pay attention to it and [crosstalk] if you keep pressuring they would wait for a mistake and then ban you completely, but sometimes they just don't pay attention to you. They ignore you, they won't fix it. If you don't like it, whatever, they don't give a shit.

Problems such as limited scheduling autonomy, tip theft, and the threat of sudden dismissal remind José of earlier restaurant jobs, but whereas he could previously take things up with a manager, allowing him to at least negotiate and state his case in person, he now faces a more impersonal and impervious apparatus. Although not having a boss breathing down your neck surely has its benefits, Relay has outsourced this surveillance and evaluation to partnered restaurants, making José's scheduling autonomy and indeed his livelihood conditional not only on his output but also on the whims of a whole sequence of ephemeral bosses. Remediating and optimizing the exploitation of informal workers, this form of "digital Taylorism" (Altenried, 2019) is particularly pernicious for how it pits precarious migrants against each other in a quest for hours while depriving them of employment protections because—as independent contractors—they are ostensibly free to work whenever they want. Essentially, such app-based "experimentation with cost-cutting" treats José and his peers as fungible day laborers whose work is degraded through a "combination of low wages, poor working conditions, and frequent employer violations of labor laws" (Doussard, 2013: ix). Moreover, this experimentation is both driven by and productive of data, which is another source of value extracted from migrant gig workers at the point of production—one for which they are not remunerated (Van Doorn and Badger 2020).

While digitally mediated and data-driven, Relay's work arrangements have been foreshadowed by "the immigrant workplaces at the margins of the brick and mortar economy" (Saucedo, 2017: 2). In both cases, the deportability of immigrants facilitates the extraction of predatory value as a central logic of accumulation under racial capitalism (Byrd et al., 2018; Olmos, 2019). De Genova (2002) has noted how the illegalization of undocumented migrants and the ever-present threat of deportation is a deliberate and historically specific intervention by state institutions not to exclude migrants but to include them under specific conditions. Likewise, as McMillan Cottom writes (2020: 4), the gig economy is where "surplus labor is nominally included in the 'digital economy' on extractive terms" and "platform capitalism generates the logic, incentives, and capital for these predatory inclusion practices." It should be reiterated here that capitalist accumulation always—and opportunistically—deploys logics of differentiation and stratification rooted in race, class, gender, and citizenship status. How gig platforms benefit from this stratified and, importantly, *state-sanctioned* order becomes clear when we look at Helpling's operations in Berlin and Amsterdam.

It took Natalia many months to find out that her required paperwork was not in order and that she had been working illegally for the entire period, even though Helpling didn't notify her and allowed her to service customers. A roommate eventually explained to her that, in Germany, self-employed workers like can only obtain a "Gewerbeschein" (business license) after they complete an in-person "Anmeldung" (address registration) at an office of the Berlin municipality:

> And then I realized I never did it properly, because I thought that you could file online. I really thought, I really honestly thought that it was, everything like here in Germany right, like things should be online because even in Brazil you can do that kind of stuff online. And I sent them [Helpling] like the document that I filled, and they said, okay you're good to go.

Apparently, the fact that the completed online documents Natalia submitted were only the first step toward obtaining a Gewerbeschein did not matter to Helpling, whose negligence put her in a vulnerable position. Not having a proper business license meant not having a "Steuernummer" (Tax ID), which meant that she wasn't on the radar of Berlin's tax office: "I didn't have anything, so for the government I don't exist"

How was Natalia able to work in these circumstances? As Alberti (2019: 350) has argued, "Labour recruitment and staffing agents […] must no longer be seen, as economists would, solely in their role of matching labour demand and supply […] but as an integral part of the

system of governance of migration covering an ambivalent position vis-à-vis both migrants and the state." We hold that the same is true for gig platforms, which have become "key actors in remaking contingent markets by providing and facilitating a series of 'intermediated employment practices and forms of labour contingency that otherwise would be logistically and socially unfeasible'" and that chiefly target migrants (ibid., citing Coe et al., 2009: 61). However, where Alberti sees such actors primarily as "agents of casualization" (ibid.), Wee and colleagues draw on their research on employment agents recruiting migrant domestic workers in Singapore to highlight the essential work of translation that these intermediaries engage in. They contend that "the purpose of brokerage is not to automate, quicken, or replicate processes but to bring together and activate the overlapping regulatory frameworks and dominant sociocultural modes of understanding that underpin the transnational migration industry" (Wee et al., 2020: 3). We find it interesting to think about these claims in the context of companies like Helpling, which would deny any link to a transnational migration industry and persistently avoid being identified as employment or staffing agents. Indeed, such disavowals explain the restricted translation work provided by these platforms, which customarily "automate, quicken, or replicate processes" that would otherwise require more effort and knowledge.

While Helpling and other platform companies do offer migrant workers basic information about pertinent regulatory frameworks and required paperwork/permits, they stop short of ensuring that those who are onboarded indeed understand and comply with existing laws and requirements (e.g. taxation of self-employed workers). Because Helpling does not see personalized explication and compliance monitoring as its responsibility, migrants like Natalia can get into legal trouble with the German government, whose misclassification of Helpling as a "platform" and of Natalia as "self-employed" sanctions the former's labor casualization and the latter's precarity. Indeed, we should view Natalia's situation as co-produced by the German state's ongoing *institutionalization of precarity*, which has a particularly negative impact on migrants and other labor market outsiders.

As Floros and Jørgensen (2020: 1) note, "institutionalization shows an active turn of labour market policies towards a broader restructuring of labour characterised by generalised insecurity." In the German context, this has been most prominently articulated through the rollout of the so-called "Hartz reforms" between 2003 and 2005. While these workfare reforms reduced national unemployment rates, they also increased income inequality and stratified job insecurity by deregulating temporary and nonstandard work arrangements while leaving the core labor market untouched (Chih-Mei, 2018). This period saw a massive rise of publicly subsidized low-wage jobs—so-called "mini-jobs"—followed more recently by the growth of self-employment—also in the domestic work sector (Lutz and Palenga-Möllenbeck, 2010). Regarding this sector, Lutz and Palenga-Möllenbeck write that there are "inconsistencies and paradoxes between the [German state's] *official welfare state policy* on domestic work and the *unofficial reality* of a feminized work sector which lacks rules on workers' and clients' protection" (ibid.: 420, emphasis in original). It is this institutionally sanctioned space of inconsistencies and paradoxes that offers platforms like Helpling the opportunity to classify its cleaners as self-employed, with potentially dire consequences for migrant workers not fully informed about the associated administrative procedures and/or unable to shoulder the financial responsibilities.

Like Natalia, Rita trusted that Helpling would not allow her to work illegally but otherwise, she admitted, "the [Dutch] bureaucracy scares me a little and I don't know how it works here." Helpling had informed her that it was not her employer, but when I asked if this means she's self-employed, Rita said she was unsure. In fact, Rita's work as a Helpling cleaner falls under the *Regeling Dienstverlening Aan Huis* [Arrangement for Home-Based Service Provision], a special employment regulation intended to stimulate the formal market for personal domestic services by reducing households' administrative and financial burdens. As long as her workload does not exceed 3 days a week per household, neither Helpling nor Rita's clients are required to take on full employer

responsibilities, while Rita does not have to register herself as an independent contractor. Consequently, she finds herself in an exceptional space where she lacks labor protections and social insurances, instead having the option to voluntarily purchase insurance through the national Employee Insurance Agency—an option she is unaware of. Although Helpling promotes itself as a responsible alternative to informal domestic work, this legal arrangement has in reality therefore functioned as an "exclusionary policy that essentially tolerate[s] informal employment by relieving household employers from any obligation to pay taxes or social security contributions" (Van Hooren, 2018: 13). Despite the inclusion of nominal requirements concerning minimum wage, paid holiday leave, and sick leave, a 2013 survey suggested that "in practice, three-quarters of employers are not aware of these obligations and only one in ten households complies fully" (ibid.: 8).

It thus becomes clear how Helpling's "selective formalization" (Van Doorn, 2020) of domestic work forms a strategic response to the Dutch government's institutionalization of precarity. The special employment regulation for home-based services effectively renders official what, in the German context, Lutz and Palenga-Möllenbeck (2010: 420) described as the "*unofficial reality* of a feminized work sector which lacks rules on workers' and clients' protection.*" The absence of such protections *is* Dutch government policy. As Van Hooren (2018: 13) argues, the low political salience of—and lack of resistance to—this piece of legislation is not just due to the consistent privileging of household employers' needs over the well-being of domestic workers, but, more pertinently, "reflects how intersecting inequalities contributed to limited political representation of the low-educated female workers involved." Although, as we have seen, Helpling has increased the accessibility of domestic work also for higher educated migrant women, the company continues to benefit from gendered and racialized devaluation of the sector they operate in.

Graduating from the gig?

Over time, the busy routine José had arranged for himself started to weigh on him, as it was challenging to combine the fickle demands of his bagel store manager with Relay's demand that he keep his hours close to 40 and his rating close to 100. Ultimately, he chose to stick with Relay and transfer from the bagel place to an Italian restaurant that paid him more without requiring extra chores. The whole point of a routine is to more or less know what you can expect on any given day and, despite all its constraints, Relay allows him to focus on deliveries and manage his schedule in a way that would be impossible at a restaurant:

> It's less stress because I still pick when I want to work even though there is a box of the 40 hours. There's ways to also cheat the system just like they do. They cheat me, I cheat them and then we even it out.

While José was vague about how he cheats Relay, his words illustrate his desire to highlight his agency, however, compromised. He was also clear that, in the long run, he considered food delivery a dead-end gig that had always been a means to an end—a *quid pro quo* of sorts in which both parties exploit each other until the inevitable departure or deactivation. It was therefore important to have an exit strategy:

> I think I'm going to wait five years just as a delivery boy and then I'm going to put in my own business. I want to open a restaurant. I'm saving and I have two other brothers and then I have two sisters that are in this country and then, we're thinking of - my sisters, they are born in this country, they got credit. […] I know how to do it, but I need to do some labor first.

As his initial goal of building a house back in Mexico had faded, a new aspiration was taking its place, bringing together family, enterprise and the wish to treat future employees better than Relay treats him (as a "disposable object"). In contrast, José's business would strive to make immigrants like himself "part of the project" of prosperity and upward social mobility, fulfilling the American promise that for over two decades has been kept out of his reach.

In Berlin, Natalia was finally about to follow through on her plans to move to London. Berlin had always been a temporary destination; a place for exploration, work, and saving money until she could sort out the legal requirements of immigrating to the UK amid Brexit-induced uncertainty. Helpling, accordingly, had served its purpose and she was eager to leave the platform behind. She had been thinking about starting a cleaning company, one that would treat its cleaners better than Helpling, but then reconsidered because she worried about bureaucratic obstacles. More concretely, the first thing she planned to do after arriving in London was to get a job so she could afford rent and food. Natalia had been sending out resumes and already received one callback, but knew that she needed to make money right away so, again, she was thinking about doing app-based work. During one conversation, we discussed a new app she had discovered recently, called JOB TODAY: "Then you put here 'All jobs in London' and then you see, kitchen porter, okay, you're going to wash dishes. You see? So it aggregates all kinds of jobs."

Although they may switch platforms, the gig economy will continue to provide transitional "apportunities" that sustain the aspirations and trajectories of migrants like Natalia. This is because gig platforms form plug-and-play arrival infrastructures offering immediate income streams that can function as financial stopgaps and, potentially, a stepping stone to something better. Yet, due to their mix of accessibility and "generative entrenchment" (Bratton, 2015), they also have a penchant to ensnare migrants who already face structural barriers to the labor markets and welfare provisions of host countries. In other words, it's easier to access a gig platform than to leave it. Leave it for what? What does it take to graduate from the gig and move on to something more sustainable and rewarding? Helpling may have lost its appeal among members of Natalia's migrant social circle, but, as she notes:

> There are always Brazilians on the Facebook group saying, 'oh, I'm looking for a job, I accept anything, I can be a cleaner, I can do babysitting, I can do this and that' […] I think that happens a lot in London. But I found it really interesting to see that when someone puts up, oh, this app, JOB TODAY, people will go like nuts.

As long as there are few better alternatives and migrants are, in Rita's words, "desperate for work", platform labor will feel like a step up, rather than down, because it promises to lift them out of their supplicant position and circuits of informality—even as it reproduces many of the most pressing problems associated with informal labor markets.

Concluding reflections

While the three migrant workers whose experiences we have documented here have very different backgrounds and motivations for migrating (reflecting the heterogeneous composition of our larger participant sample), their "migratory capability" was both enabled and conditioned by a "multitude of 'platforms of arrival and take-off' within, against, and beyond the infrastructures of the state" (Meeus et al., 2019: 2). As we have shown, gig companies offered a particularly appealing type of platform, insofar as app-based work enabled these migrants to quickly bridge their distance to local labor markets and start making money in a way that other types of (informal) employment could not accommodate. Operating outside of the migration industry's conventional boundaries, these intermediaries capture disaggregated migrant labor and render it productive not through

highly regimented and regulated supply chains but via relatively open yet platform-governed marketplaces where millions of ultra-short-term (i.e. gig-based) contracts stipulate the risks and responsibilities of service "requesters" and "providers". As such, gig companies accelerate the "multiplication of labor" (Mezzadra and Neilson, 2013) and deploy new strategies for its valorization.

Importantly, this multiplication of labor simultaneously results in its renewed segmentation, updating what has previously been described in terms of a migrant division of labor (May et al., 2007). Despite being differently positioned in terms of race, class, gender, and legal status, our study finds that migrants in Amsterdam, Berlin, and New York City are taking up precarious gig work in large numbers, just like they previously accepted—and continue to accept—other kinds of racialized and feminized service work with low pay and little protection (ibid.). Although gig platforms highlight the entrepreneurial freedom of app-based work and the influx of migrants into the gig economy could be construed as the outcome of people "making independent decisions, exploring new paths" (Xiang and Lindquist, 2014: S125), such actions are clearly constrained by labor market logics and state controls. How the outcome of such decisions is subsequently evaluated by migrants themselves is, as we have demonstrated, contingent on their backgrounds and attendant expectations. For Rita and José, the relatively uninvolved nature of gig work offered a feeling of autonomy that they had previously lacked in other jobs, which at least initially compensated for its precarious aspects. In contrast, Natalia's upbringing and education had shielded her from the kind of cleaning work she reluctantly convinced herself to accept in light of her deteriorated economic situation. All of them, however, negotiated the gig economy only for as long as they needed to make their next move—physically and/or professionally. Gig work, for the migrants who participated in our study, was supposed to be a stepping stone to something better, even as it in some cases turned into a dead end.

Combining the conceptual lenses of the AoM and migration infrastructure approaches has also enabled us to speculatively identify a broader development: the platformization of the low-wage labor markets that form an integral part of migration and arrival infrastructures. Migrants do not just use social media platforms to support and plan their migration trajectories, they also increasingly turn to gig platforms for work once they arrive in a foreign city. The analysis presented above, rooted in ethnographic fieldwork, has shown how these moves are experienced by migrants themselves. Yet the role of gig platforms as extensions of or alternatives to established income-generating migration/arrival infrastructures also has broader political economic repercussions that, in closing, we would like to briefly reflect on.

Again, gig platforms augment these sections of established migration infrastructures both technologically and commercially—that is, in terms of capital accumulation. Although not usually associated with the state-governed apparatuses of managed migration, gig platforms are increasingly taking on an important macroeconomic role as absorbers of migrant labor: because they do not have gig workers on their payroll, their "onboarding" (i.e. hiring) practices are eminently "compatible with the speed of flows of mobile populations" (Papadopoulos and Tsianos, 2013: 180). Furthermore, as investment vehicles for capital looking for potentially high returns, gig platforms likewise absorb global flows of finance capital. Crucially, what links gig platforms' ability to absorb both migrant labor and finance capital is how they leverage data. Datafication, on the one hand, allows for the algorithmic management of migrant gig workers at scale, while, on the other hand, it allows platform companies to deploy this data for (1) the optimization of its operations, (2) the development of new products, and (3) the sourcing of new funding rounds. Investors, after all, love data-rich tech companies and gig platforms have managed to promote themselves as such for about a decade now. But where does this data come from? As noted above, it is captured from migrant gig workers once they've logged into their app; an involuntary process of "dual value production" wherein the monetary value of the service provided is complemented by the use and

speculative value of the data produced during the gig (Van Doorn and Badger 2020). The mechanisms of exploitation and commodification that support capital accumulation in traditional migrant-dominated industries are, in the gig economy, thus augmented by—and indeed *predicated on*—platforms' extractive data-driven operations (cf. Mezzadra and Neilson, 2015).

Accordingly, future research should examine how the platformization of low-wage service sectors, which form an important part of global migration infrastructures, stimulates the financialization and assetization of migrant labor. To the extent that migrant gig workers generate an abundance of data on the job, they form a valuable asset class that helps to secure an influx of investments from shareholders looking for big returns at the moment of a company's IPO or acquisition (cf. Van Doorn and Badger 2020). Without the supply of migrant labor, after all, such data-intensive services would be more expensive to procure, disincentivizing investments. While migrant labor has previously been subject to financialization, as when migrants' remittances become incorporated into financial markets (Canterbury, 2012), never before has this process been mediated by platform companies whose rigid fealty to shareholder interests and money-hemorrhaging business models pose a direct threat to the livelihoods and well-being of migrant workers across the globe. As an asset class, migrant labor may have financial value, but as a workforce it is, in José's words, composed merely of "disposable objects".

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Notes

1. Our participant sample included migrants who had recently moved to one of the three cities from abroad, as well as those who had already been living there for multiple years.
2. Source: https://www.crunchbase.com/organization/helpling/company_financials (last accessed 23 September 2021).
3. Source: https://www.crunchbase.com/organization/relay-delivery/company_financials (last accessed 23 September 2021).

References

Alberti G (2019) The expansion of the labour market and the politics of migration. In: Gregor Gall (ed), *Handbook of the Politics of Labour, Work and Employment*. Cheltenham: Edward Elgar Publishing, 339–356. Available at: https://www.elgaronline.com/view/edcoll/9781784715687/9781784715687.00025.xml (accessed 23 October 2020).

Alderman L (2019) Food-delivery couriers exploit desperate migrants in France (Published 2019). *The New York Times*, 16 June. Available at: https://www.nytimes.com/2019/06/16/business/uber-eats-deliveroo-glovo-migrants.html (accessed 15 December 2020).

Altenried M (2019) On the last mile: Logistical urbanism and the transformation of labour. *Work Organisation, Labour & Globalisation* 13(1): 114–129.

Altenried M, Bojadžijev M, Höfler L, et al. (2018) Logistical borderscapes: Politics and mediation of mobile labor in Germany after the "summer of migration". *South Atlantic Quarterly* 117(2): 291–312.

Altenried M, Bojadžijev M and Wallis M (2020) Platform (im)mobilities. *Routed Magazine*, 20 June. Available at: https://www.routedmagazine.com/platform-immobilities (accessed 16 December 2020).

Amelung N, Gianolla C, Solovova O, et al. (2020) Technologies, infrastructures and migrations: Material citizenship politics. *Citizenship Studies* 24(5): 587–606.

Anzilotti E (2018) New York Is Confiscating Delivery Bikes, Hurting Immigrants, And Helping No One. *Fast Company*, 8 March. Available at: https://www.fastcompany.com/40537103/new-york-is-confiscating-delivery-bikes-hurting-immigrants-and-helping-no-one (accessed 30 November 2021).

Aponte CI and Velasquez J (2020) NYC food delivery workers band to demand better treatment. Will New York listen to Los Deliveristas Unidos? *The City*, 6 December. Available at: https://www.thecity.nyc/work/2020/12/6/22157730/nyc-food-delivery-workers-demand-better-treatment (accessed 19 February 2021).

Bandeira L (2019) The gig economy is a double-edged sword for migrant workers. *BBC*, 2 July. Available at: https://www.bbc.com/worklife/article/20190701-the-gig-economy-is-a-double-edged-sword-for-migrant-workers (accessed 20 August 2020).

Bélanger D and Silvey R (2020) An Im/mobility turn: Power geometries of care and migration. *Journal of Ethnic and Migration Studies* 46(16): 3423–3440.

Bratton BH (2015) *The Stack: On Software and Sovereignty*. Cambridge, MA: MIT Press.

Byrd JA, Goldstein A, Melamed J, et al. (2018) Predatory value: Economies of dispossession and disturbed relationalities. *Social Text* 36(2): 1–18.

Canterbury DC (2012) *Capital Accumulation and Migration*. Leiden: Brill.

Carling J and Collins F (2018) Aspiration, desire and drivers of migration. *Journal of Ethnic and Migration Studies* 44(6): 909–926.

Casas-Cortes M, Cobarrubias S and Pickles J (2015) Riding routes and itinerant borders: Autonomy of migration and border externalization. *Antipode* 47(4): 894–914.

Chen JY (2018) Technologies of control, communication, and calculation: Taxi drivers' labour in the platform economy. In: Moore P, Upchurch M and Whittaker X (eds) *Humans and Machines at Work: Monitoring, Surveillance and Automation in Contemporary Capitalism. Dynamics of Virtual Work*. London: Palgrave Macmillan, 231–252. DOI: 10.1007/978-3-319-58232-0.

Chen JY (2019) *Digital Platforms for Ride-Hailing and Food-Delivery Services in China*. Ottawa: IT for Change, IDRC Canada.

Chih-Mei L (2018) Are labour market reforms the answer to post-Euro-crisis management? Reflections on Germany's Hartz reforms. *European Review* 26(4): 738–754.

Collins FL (2018) Desire as a theory for migration studies: Temporality, assemblage and becoming in the narratives of migrants. *Journal of Ethnic & Migration Studies* 44(6): 964–980.

Collins FL (2020) Geographies of migration I: Platform migration. *Progress in Human Geography* 45(4): 866–877.

De Genova N (2002) Migrant "illegality" and deportability in everyday life. *Annual Review of Anthropology* 31(1): 419–447.

Deshingkar P (2019) The making and unmaking of precarious, ideal subjects – migration brokerage in the global south. *Journal of Ethnic and Migration Studies* 45(14): 2638–2654.

DeVault IA, Figueroa M, Kotler FB, et al. (2019) On-demand platform workers in New York State: The challenges for public policy. Available at: https://ecommons.cornell.edu/handle/1813/74348 (accessed 19 February 2021).

Doussard M (2013) *Degraded Work: The Struggle at the Bottom of the Labor Market*. Minneapolis: U of Minnesota Press.

Felder M, Stavo-Debauge J, Pattaroni L, et al. (2020) Between hospitality and inhospitality: The Janus-faced 'arrival infrastructure'. *Urban Planning* 5(3): 55–66.

Floros K and Jørgensen MB (2020) Tracing the future of migrants' labour relations. Experiences of institutionalised migrant precarity in Denmark and Greece. *Political Geography* 77: 102120.

Gough HA and Gough KV (2019) Disrupted becomings: The role of smartphones in Syrian refugees' physical and existential journeys. *Geoforum; Journal of Physical, Human, and Regional Geosciences* 105: 89–98.

Gutiérrez-Rodríguez E (2010) *Migration, Domestic Work and Affect: A Decolonial Approach on Value and the Feminization of Labor*. London: Routledge.

Guyer JI (2016) *Legacies, Logics, Logistics: Essays in the Anthropology of the Platform Economy*. Chicago and London: The University of Chicago Press.

Holtum JP, Irannezhad E, Marston G, et al. (2021) Business or pleasure? A comparison of migrant and non-migrant Uber drivers in Australia. *Work, Employment and Society*: 09500170211034741. DOI: 10.1177/09500170211034741.

Iqubbal A (2021) *Food delivery workers in India: Emerging entrepreneurs or informal labour*. April. Digital Empowerment Foundation. Available at: https://defindia.org/wp-content/uploads/2021/04/swiggy-zomato-delivery-workers-india-entrepreneurs-labour.pdf.

Lam L and Triandafyllidou A (2021) An unlikely stepping stone? Exploring how platform work shapes newcomer migrant integration. *Transitions: Journal of Transient Migration* 5(1): 11–29.

Langley P and Leyshon A (2017) Platform capitalism: The intermediation and capitalization of digital economic circulation. *Finance and society* 3(1): 11–31.

Lee DJ (2018) *Delivering Justice: Food Delivery Cyclists in New York City*. New York: City University of New York. Available at: https://academicworks.cuny.edu/gc_etds/2794.

Lin W, Lindquist J, Xiang B, et al. (2017) Migration infrastructures and the production of migrant mobilities. *Mobilities* 12(2): 167–174.

Lindquist J and Xiang B (2018) The infrastructural turn in asian migration. In: Gracia Liu-Farrer and Brenda S.A. Yeoh (eds), *Routledge Handbook of Asian Migrations*. London: Routledge, 152–161. DOI: 10.4324/9781315660493-11.

Lutz H and Palenga-Möllenbeck E (2010) Care work migration in Germany: Semi-compliance and complicity. *Social Policy and Society* 9(3): 419–430.

Markham L (2018) The immigrants fueling the gig economy. *The Atlantic*, 20 June. Available at: https://www.theatlantic.com/technology/archive/2018/06/the-immigrants-fueling-the-gig-economy/561107/ (accessed 20 August 2020).

May J, Wills J, Datta K, et al. (2007) Keeping London working: Global cities, the British state and London's New migrant division of labour. *Transactions of the Institute of British Geographers* 32(2): 151–167.

McGrath S and DeFilippis J (2009) Social reproduction as unregulated work. *Work, Employment and Society* 23(1): 66–83.

McMillan Cottom T (2020) Where platform capitalism and racial capitalism meet: The sociology of race and racism in the digital society. *Sociology of Race and Ethnicity* 6(4): 441–449.

Meeus B, van Heur B and Arnaut K (2019) Migration and the infrastructural politics of urban arrival. In: Meeus B, Arnaut K and van Heur B (eds) *Arrival Infrastructures: Migration and Urban Social Mobilities*. Cham: Palgrave Macmillan, 1–32. DOI: 10.1007/978-3-319-91167-0_1.

Mezzadra S (2011) The gaze of autonomy: Capitalism, migration and social struggles. In: Vicki Squire (ed), *The Contested Politics of Mobility*. London: Routledge, 141–162. DOI: 10.4324/9780203839829-15.

Mezzadra S (2016) MLC 2015 Keynote: What's at stake in the mobility of labour? Borders, migration, contemporary capitalism. *Migration, Mobility, & Displacement* 2: 1.

Mezzadra S and Neilson B (2013) *Border As Method, Or, the Multiplication of Labor*. A Social Text Book. Durham: Duke University Press Books.

Mezzadra S and Neilson B (2015) Operations of capital. *South Atlantic Quarterly* 114(1): –9.

Olmos D (2019) Racialized im/migration and autonomy of migration perspectives: New directions and oppor-
    tunities. *Sociology Compass* 13(9): e12729.
Papadopoulos D and Tsianos VS (2013) After citizenship: Autonomy of migration, organisational ontology
    and mobile commons. *Citizenship Studies* 17(2): 178–196.
Picherit D (2019) Labour migration brokerage and Dalit politics in Andhra Pradesh: A Dalit fabric of labour
    circulation. *Journal of Ethnic and Migration Studies* 45(14): 2706–2722.
Pinto M, Smith R and Tung I (2019) Rights at risk: Gig companies' campaign to upend employment as we
    know it. 25 March. National Employment Law Project. Available at: https://www.nelp.org/publication/
    rights-at-risk-gig-companies-campaign-to-upend-employment-as-we-know-it/ (accessed 19 February
    2021).
Plantin J-C, Lagoze C, Edwards PN, et al. (2018) Infrastructure studies meet platform studies in the age of
    Google and Facebook. *New Media & Society* 20(1): 293–310.
Rahman KS and Thelen K (2019) The rise of the platform business model and the transformation of
    twenty-first-century capitalism. *Politics & Society* 47(2): 177–204.
Rathi A and Tandon A (2021) *Platforms, Power, & Politics: Perspectives from Domestic and Care Work in
    India*. June. Bengaluru/ New Delhi: The Center for Internet and Society and The Domestic Workers Rights
    Union. Available at: https://cis-india.org/raw/platforms-power-and-politics-pdf.
Raval N (2020) *Platform-Living: Theorizing Life, Work, and Ethical Living After the Gig Economy*. Irvine,
    CA: University of California. Available at: https://www.proquestcom/openview/3f22f0e0dc3d4107bd2f
    5e9be63ff91f/1?pq-origsite=gscholar&cbl=51922&diss=y (accessed 26 September 2021).
Saucedo LM (2017) The legacy of the immigrant workplace: Lessons for the 21st century economy. *Thomas
    Jefferson Law Review* 40: 1.
Scheel S (2019) *Autonomy of Migration?: Appropriating Mobility Within Biometric Border Regimes*. London:
    Routledge. DOI: 10.4324/9781315269030.
Shaak E (2017) Couriers drive wage and hour lawsuit against Relay delivery. *ClassAction.org*, 4 October.
    Available at: https://www.classaction.org/news/couriers-drive-wage-and-hour-lawsuit-against-relay-delivery
    (accessed 19 February 2021).
Sun P and Chen JY (2021) Platform labour and contingent agency in China. *China Perspectives* 2021(1):
    19–27.
Tassinari A and Maccarrone V (2020) Riders on the storm: Workplace solidarity among gig economy couriers
    in Italy and the UK. *Work, Employment and Society* 34(1): 35–54.
Vallas S and Schor JB (2020) What do platforms do? Understanding the gig economy. *Annual Review of
    Sociology* 46(1): 273–294.
Van Doorn N (2020) Stepping Stone or Dead End? The Ambiguities of Platform-Mediated Domestic Work
    under Conditions of Austerity. Comparative Landscapes of Austerity and the Gig Economy: New York
    and Berlin. In D. Baines and I. Cunningham (eds) *Working in the Context of Austerity: Challenges and
    Struggles*, 49–69. Bristol: Bristol University Press.
Van Doorn N and Badger A (2020) Platform capitalism's hidden abode: producing data assets in the gig
    economy. *Antipode*, 52(5). John Wiley and Sons Ltd.: 1475–1495. https://doi.org/10.1111/anti.12641.
Van Hooren FJ (2018) Intersecting social divisions and the politics of differentiation: Understanding exclu-
    sionary domestic work policy in the Netherlands. *Social Politics: International Studies in Gender, State
    & Society* 25(1): 92–117.
Veen A, Barratt T and Goods C (2020) Platform-capital's 'app-etite' for control: A labour process analysis of
    food-delivery work in Australia. *Work, Employment and Society* 34(3): 388–406.
Velasco SÁ and Martínez LP (2020) Intervention – "Pandemic and (im)mobility in the Americas". *Antipode
    Online*. Available at: https://antipodeonline.org/2020/08/11/pandemic-and-immobility-in-the-americas/
    (accessed 4 September 2021).
Wee K, Goh C and Yeoh BSA (2019) Chutes-and-ladders: The migration industry, conditionality, and the pro-
    duction of precarity among migrant domestic workers in Singapore. *Journal of Ethnic and Migration
    Studies* 45(14): 2672–2688.
Wee K, Goh C and Yeoh BSA (2020) Translating people and policy: The role of maid agents in brokering
    between employers and migrant domestic workers in Singapore's migration industry. *International
    Migration Review* 54(4): 992–1015. DOI: 10.1177/0197918319897570.

Wood AJ, Graham M, Lehdonvirta V, et al. (2019) Good gig, bad gig: Autonomy and algorithmic control in the global gig economy. *Work, Employment and Society* 33(1): 56–75.

Wu T (2016) More than a paycheck: Nannies, work, and identity. *Citizenship Studies* 20(3–4): 295–310.

Xiang B and Lindquist J (2014) Migration infrastructure. *International Migration Review* 48(1): S122–S148.

Xie Z and Witteborn S (2019) The mobility–migration nexus: The politics of interface, labor, and gender. In: Kevin Smets, Koen Leurs, Myria Georgiou, Saskia Witteborn and Radhika Gajjala (eds), *The SAGE Handbook of Media and Migration*, 453–464. Thousand Oaks, CA: Sage Publishing.