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Platform Capitalism's Hidden Abode: Producing Data Assets in the Gig Economy

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Abstract: In this article, we argue that the governance of gig work under conditions of financialised platform capitalism is characterised by a process that we call “dual value production”: the monetary value produced by the service provided is augmented by the use *and* speculative value of the data produced before, during, and after service provision. App-governed gig workers hence function as pivotal conduits in software systems that produce digital data as a particular asset class. We reflect on the production of data assets and the unequal distribution of opportunities for their valorisation, after which we survey a number of strategies seeking data-centric worker empowerment. These strategies, we argue, are crucial attempts to push back against platform capitalism's domination, bankrolled by what we term “meta-platforms”. Ultimately, it is the massive wealth and synergetic capacities of meta-platforms that constitute the most formidable obstacle to worker power and social justice in increasingly data-driven societies.

Keywords: gig economy, platform capitalism, datafication, data assetisation, finance capital, meta-platform

Introduction

What kind of work is platform-mediated “gig work”? Phrased differently, what kinds of value are created through platform labour? To answer this question, it may be strategically useful to momentarily accept the position defended by “gig economy” companies in various court cases, namely that they merely provide the technical platform on which service providers find access to their customer base (e.g. Tomassetti 2016). From this perspective, these companies provide an “informational service” that is categorically distinct from the service provided by the gig worker and as such they should not—indeed *cannot*—be legally held accountable as employers. In return for this service, the argument continues, gig economy companies charge a commission on each service transaction conducted via their platform. Crucially, however, besides extracting rent from each transaction they orchestrate, platforms also extract data *about* these transactions and usually about a lot more, which means that gig workers can likewise be understood to

provide an “informational service” to the platforms they use.¹ The fact that *this* service is neither optional nor remunerated suggests that such data extraction “continues to open up new frontiers for the expansion of the logics of property and to blur the borders between processes of governance and dynamics of capitalist valorization” (Mezzadra and Neilson 2017:195).

In other words, gig work is, among other things, essentially data work and the gig economy should be understood as but one salient phenomenon within the more comprehensive constellation that is financialised platform capitalism (Srnicsek 2017). In our view, the digital platform is one of capital’s “new frontiers” in its fight to counter declining profitability rates, allowing it to expand into previously uncharted areas of life through data- and finance-driven modes of accumulation. To be sure, we realise that data-generative activities occur across gig platforms’ multi-sided markets (i.e. valuable data is generated when customers browse their apps and rate the services provided, or when restaurants fulfil orders). However, the analytical scope of our contribution limits itself to the data work undertaken by (under)paid gig workers, even if this work cannot be neatly disentangled from the data generated by other “partners” in a platform’s ecosystem.

This analytical focus follows the contours of our respective research projects, which both examine platform-mediated labour. We have each spent substantial periods conducting (auto-)ethnographic research, during which we not only studied gig workers but also engaged in gig work ourselves. Van Doorn spent two years studying app-based food delivery and domestic cleaning services in New York, Berlin and Amsterdam (spending eight months in each city), also working as a courier and cleaner in the latter two cities.² Badger has similarly done food delivery work for two platforms in London over a period of nine months, in addition to doing 18 months of ethnographic research within a grassroots trade-union responsible for organising gig workers.³

Besides our long-term ethnographic studies of gig workers’ everyday experiences, we each have also conducted extensive desk research on the institutional, financial/economic, and technological conditions enabling the platformisation of low-wage service work across local and national settings. These analyses extended beyond the “global North” purview of our respective ethnographies and allowed us to identify similar dynamics and developments in other parts of the world. Our shared interest in the political economy of low-wage gig work, crystallised in app-based food delivery, is what brought us together and pushed us to jointly examine in more detail the role that data plays in the daily operations and business models of gig platforms. We focus on data extraction in low-wage gig work because this is a phenomenon that spans several quickly growing global industries, where it serves to increase the rate of exploitation of often vulnerable, migrant workers who have no say over how their data is used and valorised.

Accordingly, in this article we argue that gig work under conditions of platform capitalism is characterised by a process that we call “dual value production”: the monetary value produced by the service provided is augmented by the use *and* speculative value of the data produced before, during, and after service provision. As noted above and further explained below, platforms capture part of this monetary value by charging rent, in the form of a commission, while capturing all the

value of the data produced by gig workers. That is to say, using Sadowski's (2020:571) pithy formulation, "platforms collect monetary rent and data rent". Yet whereas the value of this monetary rent can be dynamically determined by the platform, the value of data rent is fundamentally indeterminate insofar as it derives from speculative and performative practices. Platforms engage in constant data accumulation because of the *potential* value this data, once processed by their analytics software, might embody or give rise to.⁴ As we will discuss, this value derives in part from data's expected or actual practical utility in operational processes (i.e. achieving functional goals and systems optimisation). Yet captured data also attracts venture capital and grows financial valuations, to the extent that investors expect data-rich platform companies to achieve competitive advantages by creating data-driven cost efficiencies, cross-industry synergies, and new markets. In this way, it becomes possible "to convert data into money" (Sadowski 2020:572), which is then again invested in activities and technologies that increase the capture of data.

While data may at first seem like a supplementary component of the service provided, it is thus actually key to understanding what gig platforms are about. Focusing on datafication allows us to grasp how app-governed gig workers function as pivotal conduits in software systems that combine distributed data generation and centralised analytics, depending on layers of existing (public and private) urban infrastructure—from free Wi-Fi networks to roads and bike lanes (Shapiro 2017). In practice, a courier's phone and physical labour become a site of translation through which complex urban environments are formatted into machine-readable data streams. These apparatuses thereby produce digital data as a particular asset class (Sadowski 2019, 2020), one that is central to platform capitalism "as a mode of accumulation that is simultaneously a system of domination" (Fraser 2016:164–165). As we will show, one way in which such domination articulates itself is through the unequal distribution of opportunities for exploiting proprietary data assets, an issue of scale that is obfuscated by discourses framing this asset class as the basis for a new form of human capital that can be strategically accumulated by entrepreneurial gig workers.

Before elaborating on the specific qualities of the data asset, we start with a brief discussion of the sociotechnical architecture in which it is produced. That is, we explain how low-wage service work has become subject to *platformisation* (Helmond 2015), by building on Philip Agre's work on the computational capture of human activity and taking food delivery as our leading example. We then offer our reflections on the constitution of the data asset as well as its conditions of possibility, after which we examine the shortcomings of the human capital approach to data asset-based worker welfare and survey a number of collectivist strategies seeking data-centric worker empowerment. These strategies, we argue, are crucial attempts to achieve alternative architectures geared toward worker equity and durability, even though some initiatives have more potential than others when it comes to forging a successful pushback against platform capitalism's domination. Ultimately, this discussion returns us to the problem of scale, and we close our argument by expanding our critical purview from the platform to what we term the "meta-platform", whose massive scaling capacities and

capitalisation should make them the primary object of concern for those defending worker power and social justice in increasingly data-driven societies.

The Platformisation of Low-Wage Service Work

Platforms, according to Helmond (2015:5), “enact their programmability to decentralize data production and recentralize data collection”. Platformisation, in turn, refers to “the rise of the platform as the dominant infrastructural and economic model” established through the strategic distribution and control of application programming interfaces (APIs) and software development kits (SDKs) (ibid.). As data-driven connective interfaces, APIs are crucial tools enabling platform companies to construct and govern their markets insofar as—like other interfaces (e.g. user screens and service agreements)—they communicate the rules each market participant should follow.

APIs, however, are not the type of interface Richardson (2020) seems to have in mind when making a case for the need to push the critical analysis of platform-mediated markets beyond the interface. In a recent article published in this journal, Richardson (2020:619) offers an insightful examination of what we would term service market platformisation, focusing on how Deliveroo produces the delivered meal as “a flexible arrangement of riders, restaurants, and customers” that is continuously and contingently calculated. Yet such contingency, she argues, is impossible to discern through the neoclassical economic lens of “interface markets”, which fixes the identities of market participants in advance and black-boxes the calculations and labour involved in producing the delivered meal each time anew. Instead, to really grasp how Deliveroo and other on-demand platforms construct their markets and goods, Richardson (2020:624–625) suggests we take cues from economic sociology and consider how they at once encourage and enforce flexibility as a critical condition for successful marketisation.

While we appreciate Richardson’s incisive analysis, we also find that it does not give sufficient attention to the role of data and datafication in gig platforms’ calculative and coordinating activities—which, to be sure, reach beyond the markets they govern.⁵ Interfaces are frequently equated with representational screens, while the notion of calculation takes on a much broader meaning than the analytics practices we are primarily interested in here. Moreover, whereas Richardson seeks to move beyond the labour of delivery workers by embedding it in platforms’ more extensive market-making techniques, we aim to keep this labour at the forefront of our analysis even as we ultimately move beyond the construction of service markets and toward an integrated analysis of datafication and financialisation. To help us in this endeavour, we turn to the prescient work of Philip Agre, whose background in computer science made him acutely sensitive to the increasingly important role of data in socio-economic transactions and workplaces.

In a pioneering contribution to the study of computer-supported work environments, Agre (1994:109) introduced his “capture model” of surveillance to describe “the situation that results when grammars of action are imposed upon human activities, and when the newly reorganized activities are represented by computers in real time”. Importantly, these reorganised activities comprise a novel

“activity system” whose discrete elements can be automatically tracked while the data this generates is stored and parsed for information that can be used to further optimise the system. Here, we follow the five stages of Agre’s recursive model, which aptly anticipates the platformisation of low-wage service work and resonates with our own (field)work experiences. In this model, “traditional” food delivery is understood as an activity system that has to be methodically deconstructed, mapped, and modelled in linguistic terms in order to become susceptible to a process of platform-mediated capture.

During the first stage, called “Analysis”, startups study food delivery as “an existing form of activity” and identify “its fundamental units in terms of some ontology” (Agre 1994:109). In this case, the ontology will describe the basic entities (restaurants, customers, couriers, orders), relations between these entities (e.g. restaurants and couriers are related because the courier delivers a restaurant’s meals in return for a wage), functions of each entity (e.g. the function of the courier is to deliver the food as soon as possible), and basic actions (i.e. order processing, cooking, packaging, biking/driving, money transaction, tipping). According to Agre (1994:110), “the resulting ontologies are sometimes standardized across whole institutions, industries, or markets”, which is to a large extent the case for food delivery ontologies. In the second stage, “Articulation”, operations and product managers work together with engineers to “articulate a grammar of the ways in which those units can be strung together to form actual sensible stretches of activity” (Agre 1994:110). In other words, once an ontology of discrete elements has been composed, a food delivery startup can operationalise these elements into a model that represents “a complete, closed, formally specified picture of the activity” (ibid.). This model thus functions as a blueprint for the newly reorganised activity system that is platform-mediated food delivery, which has its own specific grammar of action.

This grammar “is then given a normative force” during stage three, “Imposition”, when “[t]he people who engage in the articulated activity are somehow induced to organize their actions so that they are readily ‘parseable’ in terms of the grammar” (Agre 1994:110). For example, while their movements through urban space are now constantly tracked, couriers are still expected to notify the platform via an app on their smartphone each time they: (1) accept an order; (2) arrive at the restaurant; (3) pick up the food; (4) arrive at the customer’s address; and (5) drop off the food and complete the order. Customers are, in turn, expected to monitor and sometimes rate couriers, whose journey is visualised on their apps. As this example suggests, the process of Imposition would not be possible without the fourth, largely parallel stage of “Instrumentation”, during which the “[s]ocial and technical means are provided ... for maintaining a running parse of the ongoing activity” (Agre 1994:110). Once a food delivery startup has equipped its partnered restaurants, customers, and couriers with their respective user applications and has instructed them on how to properly deploy these instruments, “the participants begin, of necessity, to orient their activities toward the capture machinery and its institutional consequences” (ibid.).

The final stage in the capture cycle, which tends to run concurrently with the previous analytical stages, is what Agre terms “Elaboration”: “captured activity

records [i.e. data], which are in economic terms among the products of the reorganised activity, can now be stored, inspected, audited, merged with other records [and] subjected to statistical analysis [or data analytics]" (Agre 1994:110, emphasis added). It is this process of Elaboration that provides food delivery platforms with such flexible control over their activity systems, allowing them to use captured data to frequently adjust the labour process of their courier fleets while also modulating their on-demand labour supply through various monetary incentives. As we explain in the following section, such data composes a peculiar asset class that can be capitalised in diverging and unequal ways.

The Data Asset

What kind of asset is captured data? In asking this question, we move alongside recent inspiring scholarship on the impact of new technologies on practices of assetisation and rentiership (e.g. Birch 2020; Fields 2018, 2019; Sadowski 2020). Importantly, for gig platforms, captured data is *not merely* an asset generating economic rent for its owner, who monetises third parties' controlled access to this asset. Rather, data can potentially become a "catalysing" asset insofar as it enables the optimisation of a platform company's software assets (e.g. its algorithms), which enhances its capacity to govern and extract rent from platform-mediated transactions. As noted earlier, this subsequently allows the company to attract more investment capital.

Furthermore, a main distinguishing feature of the data asset is its high value elasticity, meaning that both its operational use value and its speculative financial value tend to increase significantly as it scales. To elucidate this elasticity, it is helpful to return to our notion of dual value production and our example of food delivery platforms. On the level of service provision, a platform company's "bottom line" (i.e. net income) consists of the rent the platform extracts from each completed food order (i.e. the commission it takes from the restaurant plus the delivery fee it charges the customer, together forming its top line revenue) minus the piece-rate labour costs associated with each order (from which some platforms extract another service fee) and other expenses. In traditional Marxist analyses, this is the scene of exploitation: "recompensed only for the socially necessary cost of their own reproduction, ... [food delivery workers] have no claim on the surplus value their labour generates, which accrues instead to the ... [platform company]" (Fraser 2016:164).

However, as Nancy Fraser (2016:165)—responding to Michael Dawson—argues, the problem with this perspective is that, by focusing on "capital's exploitation of wage labour in commodity production", it marginalises another fundamental process that is at once entangled with exploitation and operates as its racialised condition of possibility: *expropriation*, or what David Harvey (2005) has called accumulation by dispossession. Essentially, expropriation "works by *confiscating* capacities and resources and *conscripting* them into capital's circuits of self-expansion" (Fraser 2016:166), which rather accurately describes the globe-spanning capture of data assets derived from platform-mediated food delivery work performed largely by (im)migrant men who lack ownership or meaningful

control over these assets (cf. Couldry and Mejias 2019). Computational data expropriation makes it possible for food delivery platforms to continually optimise their accumulation strategies based on exploitation, for instance by dynamically adjusting—while progressively decreasing—riders' delivery fees based on aggregated market data in order to increase profit margins (cf. Mezzadra and Neilson 2017).

As such, captured data expropriation is a practice characterised by alienation and unfreedom, which forms the condition of possibility for the exploited free labour of food delivery workers and in this sense constitutes platform capitalism's true hidden abode.⁶ While independent contractors can nominally choose when/how much they work and which orders they accept, it is precisely these sequences of decision-making activities from which data assets can be derived. This means that couriers' freedom of choice can be strategically leveraged as a behavioural "informational service" that is not freely provided and that can be used against their best interests.

Yet whereas the unit economics of courier exploitation expands in a linear fashion, the captured data assets expropriated from each courier only become actionable—and thus valuable—once their accumulation reaches a particular threshold, known as "reaching scale", after which their value grows exponentially. This, then, is what it means to say that captured data is a highly elastic asset class, which renders its expropriation much more sensitive to the qualities of scale than labour's exploitation. To be sure, the aforementioned threshold is a constantly moving target: it is a dynamic site of experimentation that is contingent not just on a company's evolving operational goals but also on environmental variables such as the nature, prevalence, or relative significance of the activity being captured and datafied. Data analytics is not an exact science and although the accumulation of more data generally increases the accuracy and versatility of predictive calculations, it is impossible to predict in advance at which threshold an expanding data set—or combination of data sets—will increase in value by becoming more actionable.

Still more should be said here, in order not to naturalise the notion of scale and to avoid conflating it with volume or size. Scale is actually *an effect* of a platform company's capture apparatus; an assemblage consisting of data collection, processing, and analytics technologies that together enable its product and operations teams to grasp a circumscribed, modular totality (i.e. Agre's "activity system").⁷ In other words, ownership and control over the computational architecture built for data capture is the essential precondition not only for a platform's rentiership but also for achieving "scale as institutional or boundary level" (Collinge 2006:245). Again, to be sure, this level forms a threshold pertaining not so much to volume as to the ability to govern an "obligatory passage point" that "operates in terms of a translation strategy posited on an incommensurability" between different realities and the languages used to describe them (Bowker 1993:122).

In order to translate between the messy physical reality of food delivery work and the discrete reality constructed by the grammars of action used to manage this work, platform companies engage in perpetual acts of data (dis)aggregation,

(re)composition, calculation, and commensuration that produce “scalable” courier subjects. According to Luke Stark (2018:207), the “subject of digital control is not only plastic but also scalable: shaped and made legible at different orders of technical analysis”, whose juxtaposition and integration can generate new insights and applications. By rendering scalable courier subjects intelligible from different angles and at varying levels of granularity, food delivery platforms enact algorithmically induced “classification situations” that give rise to “consequential forms of social categorization and price-differentiated opportunities” affecting the livelihoods of each enrolled courier (Fourcade and Healy 2017:10).

For instance, Deliveroo’s UK Rider Privacy Policy states that the company analyses data on courier activities “to make the most efficient decisions when offering you [price-differentiated] orders based on factors like your location, ... to determine your level of priority access to [shift] booking using your ‘Statistics’ data”, and “to make certain assumptions about the types of promotional offers that may be particularly beneficial for you when providing services to Deliveroo”.⁸ These lines may help to illustrate Fourcade and Healy’s (2017:14) suggestion that classification situations enable some individuals to “accrue ‘übercapital’ [or ‘eigencapital’, as they also call it], a form of capital arising from one’s position and trajectory according to various scoring, grading, and ranking methods”. In their view, übercapital consists of various data derivatives (e.g. scores, rankings, ratings, and other identifiers) “bestowed upon individuals algorithmically, often in a manner opaque to them” (ibid.), but which can nevertheless be leveraged to gain status or income opportunities. That is to say that these data derivatives are subject to an “*asset-becoming* process: a process through which something becomes an object of investment and, therefore, an object that is considered primarily from the angle of capitalization” (Doganova and Muniesa 2015:120). Yet to what extent, and in what ways, are scalable subjects of platform capitalism actually able to capitalise on their data assets?

Any answer to this question, which we elaborate below, will have to first acknowledge that there is nothing truly “eigen” (i.e. “own”) about the “eigencapital” accrued on digital platforms, given that the data on which such capital is predicated is expropriated at the moment of production. Moreover, scalable subjects are deprived of the means to grasp and exploit their own scalability because they lack meaningful access to another form of capital; the software systems that track, measure, and frame their activities in the pursuit of value extraction. Another look at Deliveroo’s Privacy Policy offers some insight into the scope of this pursuit. Deliveroo⁹ captures a courier’s activities:

to understand from your data (such as your order progress swipes and other Rider App usage, feedback you give about orders and your location data) as well as the data of other riders, what attributes to a positive or negative customer, restaurant or rider experience with Deliveroo and what might cause inefficient deliveries or damage to Deliveroo, and use this data to responsibly design, develop, test and implement new tools, processes, and relationships to improve our business, systems and services ...

It should be emphasised here that the success of Deliveroo’s “business, systems and services” is contingent on a wider “value ecosystem” composed of partnered

couriers and restaurants, customers, and third party service providers. In contrast to Deliveroo's couriers, however, restaurants and other third parties such as "IT service providers", "Operational service providers", and "Insurance companies" can all receive or purchase varying levels of access to the platform's carefully curated data assets. For instance, Deliveroo "shares" data on operational (in)efficiencies as well as relevant food ordering trends with its partnered restaurants, which is supposed to justify the increasingly high commission the company charges.

Such services notwithstanding, this asset class is ultimately most valuable to Deliveroo itself, insofar as captured data's high value elasticity is structurally coupled to another type of highly elastic intangible asset: algorithms. These two kinds of assets essentially relate to each other through a positive feedback loop, in which algorithms become more useful and accurate—and thus more valuable—when they are fed more training data, while growing data sets can in turn only be rendered meaningful and actionable when parsed by useful algorithms. This positive feedback loop is at the heart of machine learning and its promise of full automation, which drive the operational practices and investor pitch decks of food delivery startups and other gig economy companies worldwide. In this vision, the real value proposition of these platforms is that they will eventually be able to automate all fungible forms of gig work out of existence, thus diminishing contracted labour costs to zero. The platform to first accomplish this goal will subsequently conquer the market and reach *de facto* monopoly status. Gig workers—again, within this speculative framework—will have (unwittingly) contributed to their own inevitable obsolescence.

From Data Assets to Human Capital?

But is this all? What is missing from this Silicon Valley-divined eschatology? If nothing else, gig workers everywhere are evidently trying their best to make these digital platforms work for them, seemingly agnostic with respect to the professed "end times" of this type of labour. It is not that people engaged in gig work do not care about its future but rather that the everyday exigencies of on-demand labour produce a contracted temporal experience that contrasts starkly with automation's *longue durée*. That is to say that gig workers generally do not have time to worry about distant "no future" scenarios and are more concerned with reaching their daily or weekly income goals without being adversely affected by the platform and its customer base—for instance through poor ratings, demotion, or (temporary) deactivation. So how best to leverage these platforms as a gig worker?

While it is true that gig platforms enable workers to capitalise on their cars, bikes, or other physical assets they may use during service provision, the wear and tear that comes with repeated (often intensive) use actually *depreciates* these assets over time and such depreciation is not properly accounted for in platform-governed service pricing. Uber and Lyft drivers are responsible for repairs and maintenance costs, to which many have to add monthly interest-bearing car payments because they do not own the high value assets they ostensibly "rent out"

to customers. Meanwhile, the (e)bikes and scooters used by large groups of food delivery workers are relatively low value assets that do not generate rent and are frequently subject to theft or (in New York City) confiscation (Anzilotti 2018). In the face of such insecurity and financial strain, what are low-income and asset-poor gig workers to do? Are there other resources they could meaningfully use to their advantage?

This returns us to the notion of “über-” or “eigencapital” and the question regarding the extent to which—and ways in which—scalable subjects of platform capitalism are able to capitalise on their data assets. While it is true that there is nothing fully “eigen” about these assets insofar as the data from which they are derived is expropriated from platform workers, these workers are not completely stripped of data assets to the extent that their accounts become associated with a variable set of platform-specific performance metrics that could directly or indirectly be of value to them. Captured data thus forms an ambivalent and opaque “hyper-object” (Morton 2013) that out-scales and outlasts gig workers who nevertheless have to work with it in a pragmatic, aspirational fashion, because it is translated into dynamic and potentially consequential reputational information—only part of which is made public on a platform’s front end. As such, these data-derived assets constitute a volatile measure of human (“über-”)capital gig workers cannot afford *not* to cultivate.

As Michel Feher (2009:27) has argued, the neoliberal logic of human capital mirrors a mode of corporate governance beholden to the imperative of shareholder value, to the extent that it is preoccupied with “capital growth or appreciation rather than income, stock value rather than commercial profit”. Instead of seeking to maximise returns on investments made, the subject of human capital defers concrete returns in favour of raising the value of “the capital to which he or she is identified” (ibid.; see also Van Doorn 2014). In Feher’s (2009:27) view, then, “insofar as our condition is that of human capital in a neoliberal environment, our main purpose is not so much to profit from our accumulated potential as to constantly value or appreciate ourselves—or at least prevent our own depreciation”.

Yet it should be stressed here that, food delivery workers cannot afford to defer the more immediate returns on their investment, particularly income, in favour of the ongoing appreciation of “the capital to which he or she is identified” on the platform (Feher 2009:27). This is due to the fact that, as mentioned above, most couriers are low-income and asset-poor workers who only signed up for this job because they have bills to pay and mouths to feed. If they wouldn’t get paid bi-weekly and did not have the additional option to “cash out” instantly whenever they need their money,¹⁰ they wouldn’t work so hard at learning when and where to go online, which delivery offers to reject, what restaurants to avoid, what routes to take, where to wait in between deliveries, and how to approach a customer to increase the chance of a cash tip. All these investments in their human capital (i.e. the knowledge and skills that are needed to make a halfway decent living from this work) are only worth the effort and the strain on both bike and body as long as there are concrete monetary returns. In other words, you satisfy the platform’s algorithms and improve your metrics only for as long as this satisfies your needs.

More fundamentally, initiatives seeking to enhance the data-derived assets of platform workers, such as efforts to create portable reputation systems (Robinson 2018), problematically disavow a reality that can hardly be overlooked: the human capital of low-wage workers performing fungible labour has been structurally depreciated across the board. This ongoing devaluation is rooted in a long history of racialised, gendered, and classed subordination that originated when capitalism first sought to scale globally, one that continues to cast a long shadow over today's gig economy despite its protagonists' best efforts to re-brand menial service work as a colourblind site of entrepreneurial opportunity (Van Doorn 2017a). Moreover, it is crucial to reiterate that the systems of evaluation and assetisation enabling data-derived self-appreciation on labour platforms are owned by venture-backed corporations that set the terms and conditions determining what can be valued, how, and for how long.

We therefore fear that the range of progressive demands and aspirations that can be expressed within this framework will be severely limited, given that these remain tethered to practices, logics, and languages rooted in platform capitalism's stark inequalities with respect to wealth, information, and power. As platform workers continue to self-appreciate in order to optimise their competitive edge, their makeshift efficiencies are captured as new app-governed work routines to be performed by subsequent waves of increasingly exchangeable workers whose data assets have an afterlife haunting the labour process long after they have left the platform.

Reclaiming the Data Asset

However, the afterlife of platform workers' data assets has come to feature as a new frontier for organised resistance. No longer satisfied with the rewards of individual self-appreciation supported by data-derived assets such as performance metrics and reputation systems, workers are seeking new ways to *directly* leverage their data in efforts to gain control over their position and counter the massive inequalities discussed above. It is important to note here that labour organising in the gig economy is no longer a novel phenomenon and neither is it short-lived, despite high rates of worker turnover (Cant 2019). Over time, gig workers are finding new, more sophisticated avenues for organising their resistance efforts, as they learn which tactics are most effective. Moreover, recent efforts focused on gig workers' data-rights are part of a wider range of data-based struggles, which includes the use of data obfuscation techniques such as "fake GPS", where workers disguise their actual location.

In this penultimate section, we discuss three examples of such resistance efforts in order of their relative efficacy and collectivising ambition: (1) the tactical use of Subject Access Requests (SARs) under the EU's General Data Protection Regulation (GDPR) to contest the sudden deactivation of worker accounts; (2) the weaponisation of such SARs in court cases against platform companies, to push back against pervasive information asymmetries; and (3) the creation of a federation of platform cooperatives that seeks to scale a worker-owned software infrastructure and treats data as an asset to be deployed for the benefit of workers rather than

platform capitalists. In advance, however, we feel it is important to briefly comment on the nature of our limited optimism regarding these efforts. Insofar as they defy the kind of “reflexive impotence” outlined by Fisher (2009:21), whereby the dispossessed feel paralysed by the magnitude of the challenge ahead, the cultivation of resistance initiatives among gig workers gives us cause for political optimism.¹¹ However, as addressed below, we remain aware that significant challenges lie ahead for any struggle to improve conditions for platform workers. Many of these challenges pertain to the limited sustainability of collective actions in the face of resource scarcity and persistent asymmetrical power relations.

SARs Against Deactivation

Just before Christmas 2018, over 100 UK-based Deliveroo couriers received an email declaring that they were no longer able to work through the platform because their “supplier agreements” had been terminated. In the same email, Deliveroo provided the following reason for the termination:

We’ve noticed that a number of recent orders on your rider account were incorrectly marked as “delivered” in your app ... This activity is fraud. As a result your Supplier Agreement [contract] will be terminated with immediate effect. (quoted in Andrews 2018)

As news of these accusations of fraud spread and were vehemently denied by riders, strategies to combat the decision also began to emerge. Realising that Deliveroo captures and stores vast quantities of data on their every move once they log into the app, riders began to explore the potential of the recently introduced GDPR. By submitting a SAR under this legislation, European citizens are able to retrieve all personal data a company has collected on them—an opportunity which has also been seen as a boon for platform workers. Since it was asserted that their culpability was reflected in the data Deliveroo held on them, terminated riders believed that by getting their hands on this data they could prove their innocence. As January came and went, riders eagerly awaited their data while looking for other work to fill acute income gaps.¹² Yet once they finally received their data sets, these were soon discovered to be highly formatted and there were only limited ways in which riders could act on this data. They were also unable to retrieve the redacted data that Deliveroo claimed was commercially sensitive and therefore need not be supplied. This problem again highlights how Deliveroo riders are scalable subjects who are themselves incapable of achieving scale “as institutional or boundary level” (Collinge 2006:245)—i.e. the level on which large data sets can become actionable and meaningful—because they lack ownership and control over the computational architecture that allows for multi-scalar data analysis. Without such control over their data assets, it becomes virtually impossible for gig workers to challenge a platform company’s allegedly data-based decisions. Ultimately, there have been no reports of riders being able to leverage their SARs to force or convince Deliveroo to allow them back on the platform.¹³

Moreover, Deliveroo also informed riders that, regardless of what their data shows, it still has the right to terminate its Supplier Agreement “at any time and

for any reason".¹⁴ In other words, even *if* riders were able to disprove allegations of fraud by drawing on their SAR data, this would still not necessarily grant them the right to be reinstated on the platform. While the GDPR holds a certain emancipatory potential on paper, this case thus shows that the deeply asymmetrical contractual relation between Deliveroo and its freelance rider "partners" largely suppresses any such potential. It is clear, then, that this regulatory framework—by itself—does not provide the level of support some labour advocates had hoped it would offer. However, when leveraged in tandem with other resources and strategies, the GDPR-sanctioned SAR may help to challenge exactly those contractual stipulations which currently repress data-supported worker power. This is the wager central to our next example.

The Worker Info Exchange: Scaffolding and Scaling the SAR

The Worker Info Exchange (WIEx)¹⁵ is an initiative led by former Uber driver James Farrar, who is also a lead claimant in an ongoing UK court case against the company's alleged misclassification of its workforce. WIEx brings together workers, academics, lawyers, and computer scientists in an effort to not only gain legal access to driver-generated data, but also to build a computational infrastructure capable of mining this data for useful insights. To accomplish this, Uber drivers are encouraged to submit SARs and then contribute the data they receive to a larger data pool collected, managed, and analysed by the WIEx. Although the computational power available will remain vastly limited in comparison to Uber's capture apparatus, the hope is that the collected data will nevertheless reveal information on topics such as payment, management of driver supply, worked hours, and the company's use of reputational data. This information could then be utilised in court to establish inconsistencies and falsehoods in Uber's claims, thereby poking holes in its legal defence and challenging the contractual arrangement that currently deprives drivers of (collective) power (Holder 2019). The key move forward here, in comparison to our first example, is not just the computational analysis of SAR-acquired data sets, but *the organised collection of these data sets at a scale previously unseen*.

WIEx's efforts, while enabled by Europe's GDPR, are inspired in-part by New York City's pioneering new ride-hail legislation, whose license cap and accompanying minimum wage regulations could not have been accomplished without the city government's sustained pressure on Uber and Lyft to turn over detailed trip data (Holder 2019). In both cases, data is understood as integral to challenging corporate platform power and ensuring public welfare, especially the welfare of precarious ride-hail drivers who have seen their wages decrease over the past few years. However, as was the case for our first example, a critical limitation of such efforts is their reliance on access and transparency, both of which are dependent on private companies' readiness to accommodate requests and their compliance with existing regulatory frameworks—something these companies do not have a great track record on. Meanwhile, the fundamental power imbalance that subtends (platform) capitalism, predicated on asset ownership, is left intact.

Coopcycle: From Data Access to Ownership

The issue of ownership brings us to our final example. Coopcycle, based in France, describes itself as “the European federation of bike delivery coops. Governed democratically by coops, it enables [these coops] to stand united and to reduce their costs thanks to resources pooling. It creates a strong bargaining power to protect the bikers [sic] rights”.¹⁶ The resources it pools include services such as a software platform (distributed under Coopcycle’s custom-made “Coopy-Left” license, which prohibits use by non-cooperative businesses), a delivery app, administrative and legal support, and shared drafting of funding proposals. Whereas WIEx focuses on the piecemeal collection of driver data made accessible by GDPR legislation, Coopcycle moves several steps ahead, taking the production, analysis, and monetisation of delivery data into its own hands by building a collectivised computational architecture that could grant durability and scale to associated bike delivery coops. This endeavour begins to address a problem that has so far hindered the success of individual platform coops, namely their struggle to compete with the scaling capacities and seemingly unlimited resources of corporate platforms (Van Doorn 2017b).¹⁷

Sidestepping conditional and/or limited access to private data assets, Coopcycle prioritises collective ownership of data assets as a means to achieve worker power and autonomy. Such commonly owned data assets can be leveraged in various operational and commercial activities, from the optimisation of the delivery process to the negotiation of transactions with clients, funders, and other third parties. At the moment, however, the key challenge is market penetration, given that one large group of potential clients—restaurants—remains tied to API connections and service contracts with corporate delivery platforms. This is further hindered by the continual update cycle of mobile operating systems (i.e. iOS and Android). In short, each time these operating systems are updated, the apps that rely on them need to be updated accordingly. Whilst this is a relatively simple task for companies with large tech teams such as Deliveroo and Uber, it poses a more substantial challenge when sustained access to technical resources is limited. The resulting impact on user experience, combined with a minimal operating budget, are likely to have a negative impact on user retention and growth.¹⁸ Without a growing portfolio of clients that can be served on a daily basis, data assets cannot be accumulated or exploited in the first place.

From Platform to Meta-Platform

Ultimately, as valuable as Coopcycle’s efforts to socialise bike delivery coops undoubtedly are, its development of worker-owned economies of scale and collaborative software synergies pales compared to the kind of massively bankrolled synergetic activities taking place elsewhere, at a scale that exceeds the purview of any individual platform company. In this final section before our conclusion, we address these activities, as well as their impact on the working conditions and livelihoods of gig workers, by departing from the following observation: Whereas entrepreneurial platform workers and coops require short-term returns on their investments in order to survive, the lack of economic sustainability is much less of

an acute problem for private platform companies whose profitability is secondary to their market capitalisation, or the appreciation of their total stock value.

Revenues only need to be ample enough to provide existing and potential investors with a “proof of concept” regarding the platform’s ability to scale, gain market share, and thus to become profitable *at some stage in the future*. As long as investors can be assured that a platform will at one point attain monopoly-like status and can thereby start extracting monopoly rents, its founders can expect new capital injections that subsidise the company’s continuing efforts at improving its financial performance, which should lead to a further inflation of its financial value. Crucially, as we’ve noted before, the data assets that a platform company has managed to accumulate and operationalise along the way can play a critical role in this trajectory, to the extent that these are leveraged in analytics-driven cost-cutting/revenue-optimising strategies intended to boost investor confidence. For instance, during Lyft’s recent IPO roadshow, the company maintained its assertion that prioritising data-driven growth and innovation—especially with respect to its autonomous vehicle project—is the right strategy. Consequently, the lack of profitability in the present and, according to its SEC filings, potentially well into the future, should not dissuade investors from purchasing shares (Lyft 2019).

Moreover, Lyft’s IPO, like the recent IPO of its main competitor Uber, reminds us that the aforementioned cycles of capital appreciation are punctuated by so-called “liquidity events”, when founders and early investors get an opportunity to “exit” by cashing out a portion of their shares. Reminiscent of food delivery workers’ refusal to forfeit their income in exchange for the speculative appreciation of their “human capital”, these investors are likewise unwilling to indefinitely absolve a platform company from its obligation to generate monetary returns on investments made—returns often paid out at the expense of workers’ wages. As Langley and Leyshon (2017:24) suggest, “the platform business model performs the temporal structure of venture capital funds”, which is an observation that pushes us to expand the purview of our analysis beyond the realm of the platform.

Ultimately, the origins of its data-driven monopolistic aspirations can be traced up one level, to the top tier of the rent-seeking value chain constitutive of financialised platform capitalism. This tier is the domain of what we call “meta-platforms”: venture capital firms and investment funds looking to exploit the network effects and synergetic possibilities that emerge when managing a large and varied portfolio of investments in platform companies and other data-centric businesses, each intent on “disrupting” different industries by leveraging their analytics capacities. We use the term “meta-platform” because the growing power of these financial institutions stems from how they effectively operate as higher-order platforms whose profits are constituted by the rents extracted every time it matches investors, including institutional investors such as pension funds and sovereign wealth funds, with tech companies looking for capital injections that will allow them to continue to scale quickly. Paying critical attention to meta-platforms also moves us beyond a narrow concern with “shareholder value”, insofar as the stakes of our analysis do not just pertain to the influence of shareholder objectives on a company’s daily operations but demand that we account for the strategic governance of mutually reinforcing monopoly formations across sectors.

The meta-platform *par excellence* is SoftBank, the conglomerate that manages the \$100 billion Vision Fund, nearly half of which is financed by Saudi Arabia's sovereign wealth fund. According to SoftBank's founder and CEO, Masayoshi Son, Vision Fund's portfolio companies control 90% of the ride-hailing market worldwide (Alpeyev 2019), which is a percentage that should surely give us pause. Son's approach, especially since the inauguration of the Vision Fund, has been to "over-invest" in particular platform companies and thereby aim to pre-ordain a winner in various competitive markets. This then sets up Son's "cluster of number ones" strategy, which revolves around the creation of productive synergies between portfolio companies "whose whole is theoretically greater than the sum of its parts—an added value derived from the partnerships and business opportunities that come with being a part of the SoftBank family" (Medeiros 2019). Such partnerships and business opportunities largely centre on finding ways to actualise the potential of immense amounts of data captured from a great variety of sources. As a recent Wired article summarises Son's vision:

a future where every time that we use our smartphone, or call a taxi, or order a meal, or stay in a hotel, or make a payment, or receive medical treatment, we will be doing so in a data transaction with a company that belongs to the SoftBank family. And, as Son likes to say: "Whoever controls data controls the world." (ibid.)

Meta-platforms seek to control the world, or at least the platform ecosystems that increasingly reshape the world in their image. Having learned expensive lessons in the wake of the dot.com collapse, during which Son suffered a stunning \$70 billion loss (Sherman 2019), meta-platform executives now aim to construct data-centric architectures of durability that will protect them in case the next tech bubble bursts—a bubble that they themselves will have helped to create. Even in the event that Uber would fold (for instance because governments around the world finally agree that the company is in fact an employer and investors would consequently lose interest in its shares), its IPO has offered SoftBank an opportunity to cash out some of its equity and use these returns to invest in—and thereby anoint—the next Uber.

It seems more likely, however, that Softbank would abstain from further investments in risky gig economy companies, instead opting to invest in the next Palantir (Peter Thiel's data-mining firm), or a startup that would complement its current investee Arm (a British semiconductor and software design company that has become a major player in AI development). While Softbank's shock-and-awe investment strategy has generated both frustration and marvel among investors and analysts, its recent handling of the WeWork debacle—which resulted in the cancellation of the firm's IPO—painfully illustrated the fallibility of its model/vision (Alpeyev et al. 2019). Since then, Softbank and its Vision Fund have been under increased financial pressure and scrutiny, as the firm seeks to stay afloat by selling up to \$41 billion in assets at a discount in order to buy back its shares (Nussey 2020). In this shift "from long-term domination to short-term survival" (Sherman 2019), Softbank demonstrates its fealty to shareholders at the expense of its startup portfolio, as platform companies are increasingly expected to show a road to profitability by cutting costs, laying off employees, and selling off operating units (Ongweso 2020).

Conclusion

While platforms come and go, meta-platforms allocating the wealth of nations are becoming too big to fail. It is this massive privatisation of public wealth that returns us, one more time, to the position and plight of gig workers under conditions of financialised platform capitalism. While it is true that finance capital subsidises a large share of gig workers' daily wages, it is equally true that it ultimately seeks to render their labour obsolete. Meanwhile, its investment comes with stipulated expectations and constraints with respect to how a platform company can run its business, pushing a high risk/high gain model that has valued rapid growth and limited liability. In times of crisis, as this model becomes destabilised, we see how platforms that cannot weather the strain become expendable in a manner that mimics the disposability of gig workers—just further upstream.

Despite becoming subject to increasing public scrutiny and legislative challenges in some jurisdictions, this risk-offloading and labour squeezing model thus continues to be hegemonic. Accordingly, it is crucial that scholars of platform-mediated gig economies develop a more comprehensive critique of the structural relation between finance capital, data assetisation, and job precarisation. Conceiving of gig work as data work and elucidating its dual value production helps to bring this relation into clearer view, by entering platform capitalism's hidden abode: the capture and valorisation of data expropriated from disposable workers.

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Endnotes

¹ Our understanding of rent and its extraction, which we elaborate on below, follows Birch's (2020:3) conceptualisation of rentiership under technoscientific capitalism as "the appropriation of value through ownership and control rights", as differentiated from more traditional "entrepreneurial strategies based on commodity production".

² This fieldwork consisted of participant observation on city streets, in homes and offices, and in online spaces (e.g. subreddits, Facebook groups, and WhatsApp groups maintained by gig workers). It also resulted in 158 formal semi-structured interviews, primarily with couriers and cleaners but also with some entrepreneurs in food delivery, cleaning, and adjacent industries in the three cities. Many more informal conversations took place during this two-year period.

³ This fieldwork consisted of participant observation across a range of digital and urban spaces. Beyond regular informal workplace conversations, 14 formal semi-structured interviews were conducted. Research in the Trade Union allowed for the development of

personal contacts with a broad range of workers and afforded a deep understanding of both delivery work and the work of labour organising. Beyond participant observation and interview methods, data collection included a mix of video, photography, audio recordings, creating multi-media diary entries that express the complexity of the workplace.

⁴ As Sadowski writes (2020:571), “the value of data is uncertain; the valuation of data is complex.” Moreover, as he notes elsewhere, “[t]he conditions needed to convert data capital into economic capital may never arrive, but that does not stop the cycle of accumulation” (Sadowski 2019:5).

⁵ This is also an issue we identify in some of the recent literature on “algorithmic management” (e.g. Griesbach et al. 2019; Wood et al. 2019), which usefully focuses on the operations of algorithms in platform-mediated labour process control but tends to lack a clear analysis of how these software assets are functionally dependent on the accumulation of various kinds of data. What we add to this literature is an examination of how data capture structurally ties labour process/market control *through* platforms to the market capitalisation of platforms.

⁶ In a recent article on the emergence of—and resistance to—what they call “platform managerialism”, Moore and Joyce (2019) likewise use Marx’s notion of the hidden abode. They do so in an effort to counter “the uncritical black box approach” (associated with the field of science and technology studies, or STS) which they argue “does not go far enough to expose intentionality in management practices” (Moore and Joyce 2019:15). Instead, their approach follows Marx’s lead by entering the hidden abode of platform labour and uncovering the exploitative conditions enabling the production of surplus value. While our article is driven by a similar critical desire to uncover the conditions that allow platforms to produce surplus value, in this case the abode of production ultimately remains largely hidden, or “black boxed”, to the extent that our object of analysis is data expropriation and assetisation rather than the more directly graspable management of gig workers. For a very different critique of black box-thinking, which rejects its impulse to reveal what’s “inside” and instead opts for the mapping of “urban-digital interfaces”, see Fields et al. (2020).

⁷ This is illustrated most clearly in the IPO filings of established gig-economy companies. For example, Uber’s (2019:155–156) filing states, “Managing the complexity of our massive network and harnessing the data from over 10 billion trips exceeds human capability, so we use machine learning and artificial intelligence, trained on historical transactions, to help automate marketplace decisions. We have built a machine learning software platform that powers hundreds of models behind our data-driven services across our offerings and in customer service and safety”. In this constellation, data capturing sensors, machine learning algorithms, and gig workers do not function in isolation. Rather, they form vital components that converge into one system and allow it to (operate at) scale. Here, the whole is certainly greater than the sum of its parts.

⁸ See <https://rider.deliveroo.co.uk/rider-privacy#information-use>

⁹ See <https://rider.deliveroo.co.uk/rider-privacy#information-use>

¹⁰ Instant cash-out has been introduced by the majority of platforms in the food-delivery market. This is a direct response to the precarity of riders who have demanded the ability to cash-out their earnings instantly, in order to increase payment flexibility and cover their expenses in time. Instant cash-out is an optional feature. If not used, riders will be paid weekly.

¹¹ Our political optimism is mirrored by the pessimism of platform companies. Returning to Uber’s (2019:35) IPO filings, the company foresees “difficulties in managing, growing, and staffing international operations, including in countries in which foreign employees may become part of labour unions, employee representative bodies, or collective bargaining agreements”. It also identifies “challenges relating to work stoppages or slowdowns” as a risk factor for future operations (ibid.). These confessions to (potential) shareholders reveal the efficacy of labour organising efforts, which may not be able to bring down corporate platforms but can at least disrupt business as usual.

¹² Indeed, a primary challenge precarious workers face is this time-lag between submitting a SAR request and receiving their data. By the time this data become accessible, many

workers will have been forced to move on to other jobs, rendering the original aim of the SAR—trying to get reinstated—largely obsolete.

¹³ This has been confirmed with affected couriers through rider and trade-union networks the authors are a part of. At the time of writing, we are not aware of any courier who has directly benefited from his/her SAR, with respect to reinstatement or reimbursement by Deliveroo or any other platform company.

¹⁴ This information was disclosed to one of the authors by a rider who shared an email from Deliveroo, in which the company stipulated the nature of their Supplier Agreement and the rights it ostensibly has with respect to the termination of this agreement.

¹⁵ See <https://workerinfoexchange.org/> for more information

¹⁶ See <https://coopcycle.org/en/> for more information.

¹⁷ Coopcycle shares this function and mission with the Platform Cooperativism Consortium, an international “hub that starts, grows, and converts platform coops” (see <https://platform.coop/who-we-are/pcc/>).

¹⁸ We would like to thank one of the anonymous referees for pointing us to this issue.

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