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# At what price?

Labour politics and calculative power struggles  
in on-demand food delivery

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## ABSTRACT

This article asks what can be gained by making calculability a pivotal demand for wage politics in gig economies characterised by dynamic fee structures. It examines how a small group of Berlin-based food delivery workers attempted to challenge Deliveroo's market power by building their own makeshift calculative equipment to help them 'reverse engineer' the company's fee pricing algorithm. It then documents the difficulties these 'riders' experienced when attempting to translate their fight for calculable earnings into a more comprehensive labour politics. Finally, the article addresses the limits of market-based struggles over calculative power, against the background of a still pervasive 'platform exceptionalism': a socio-legal imaginary that treats platform companies as unique business entities, enabling them to engage in regulatory arbitrage while contractually enforcing the subordination and rightlessness of gig workers.

## KEY WORDS

gig economy, platforms, Deliveroo, Berlin, labour organising, wage politics, calculability, market power, dynamic pricing, economic sociology

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## Introduction

Between November 15 and December 20, 2018, the British food delivery platform Deliveroo set out to test a major 'update' to its payment system in Germany, after having introduced its 'distance based fees' scheme in other European markets. The trial period was announced shortly after I had signed up to become a 'rider' (as the company calls its bike couriers) and started my fieldwork in Berlin, where about 800

Deliveroo couriers use (e)bikes, scooters and cars to do deliveries throughout the city.<sup>1</sup> These couriers were given the choice to opt in to the trial, which would allow them to get more advance information on each delivery, such as the drop-off location (which had previously been withheld) and the total earnings. Importantly, however, whereas each order used to pay a set fee of €5 for bike and scooter riders, and €6 for drivers, earnings would now vary with each order. In the new distance-based fees system, the delivery fee is presented to the rider before s/he decides to accept or reject it and, according to Deliveroo, is calculated 'based on a combination of the distance an order will travel, as well as the time we expect it may take to complete.' Since '[e]very delivery you complete is different', the company reasons, 'the money you earn for this work should reflect that.'<sup>2</sup>

Riders' initial response to this change – which I gauged through informal conversations on the street and in WhatsApp groups – was generally positive: many liked the idea of receiving more money when they had to travel longer distances and were happy to get more advance information about a delivery. But what would happen after the trial? Would fees slowly start to drop in the new year, as had happened in France and the UK, according to riders who were active in international Facebook groups and/or labour organisations? This uncertainty about the future of Deliveroo's fees was a considerable source of concern among the riders I was getting acquainted with in Berlin. Moreover what irked many riders was the lack of information about how Deliveroo calculates its distance-based fees; no formula was communicated by the company, which also declined to disclose the new minimum payout per order – or whether there even *was* such a minimum. While everyone liked the newly gained order transparency, riders were very reluctant to accept the wage obfuscation that apparently came as part of this experimental deal.

As Melinda Cooper has suggested, '[u]nder post-Fordist conditions, the wage itself has become something of a speculative proposition', one that is contingent on 'unspecified hours of unpaid work readiness' and 'conditional on the achievement of performance indicators' (2012:646). On Deliveroo's platform, the contingency of a rider's wage is not just connected to unpaid, unpredictable waiting time (in between deliveries or at restaurants) and performance-based access to a shift-scheduling tool (Ivanova, Bronowicka, Kocher & Degner, 2018; Veen, Barratt & Goods, 2019), but is also intensified by pricing algorithms that turn this already 'speculative proposition' into a hyper-dependent variable whose process of determination is black-boxed as proprietary information. In this context, labour struggles for a fair wage thus become structurally tied to the need to 'unbox' this opaque calculative process that produces the delivery fees that appear on a rider's screen. Accordingly, this article asks what can be gained by positing calculability as a pivotal demand for wage politics in so-called 'on-demand' service industries that depend heavily on the flexible labour supply of

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1 This number was communicated by the General Manager of Deliveroo's German market during a closed multi-stakeholder workshop on fair work in Berlin's gig economy, held on May 27, 2019.

2 See <https://roocommunity.com/distance-based-fees/>.

workers classified as independent contractors.<sup>3</sup> Following Giamporcaro and Gond (2016:466), I approach calculability as itself a form of politics, given that ‘forms of power are *constituted by* but also deployed *through, over and against* calculative agencies’ in the process of market construction (emphasis in original). In this perspective, power struggles revolve around calculative asymmetries that result from the unequal distribution of ‘calculative equipment’ (Callon & Muniesa, 2005:1238), which does not just enable market control in the present but is also ‘central to ways of governing futures’ (Anderson, 2010:784). As I will detail below, a small group of activist riders decided to challenge Deliveroo’s market power in Berlin by devising their own makeshift calculative equipment with which they sought to ‘reverse engineer’ – or at least approximate, as best as they could – the company’s delivery pricing algorithm.<sup>4</sup>

This study contributes to three distinct yet interrelated bodies of scholarship. First, it builds on – yet ultimately shows the limitations of – research in economic sociology and social theory that has examined the role of calculation and pricing in the socio-material construction of markets (e.g. Muniesa, Millo & Callon, 2007; Çalışkan & Callon, 2010; Callon, 2016). Following Callon & Muniesa, I understand food delivery platforms as ‘algorithmic configurations’ whose proprietary calculative equipment allows them to unilaterally construct markets insofar as they ‘a) circumscribe the group of calculative agencies that are to be met, by making them identifiable and enumerable; b) organise the encounter, that is, their connection; and c) establish the rules or conventions that set the order in which these connections must be treated and taken into account’ (2005:1242). Here I am primarily concerned with the algorithmic *price-setting power* of food delivery platforms – a monopsonistic power that is not only market-making but also potentially livelihood-taking. Price should be understood as ‘a *productive force*, organising and shaping the relation between markets and persons’ (Moor & Lury, 2018: 501; emphasis in original) by engendering ‘incipient forms of inequality’ and inflecting ‘the relationship of the present to the future’ (Adkins & Lehtonen, 2018:109). While price is generally conceived as a signal that enables one to engage in calculative activities such as ‘imagining and estimating courses of action’ (Callon & Muniesa, 2005:1231), recently ‘the possibilities of understanding that signal in meaningful ways are changing’ under

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3 This article focuses on wage *calculability* rather than wage transparency, given that the latter generally pertains to situations in which workers receiving a fixed salary or hourly wage seek information about wages offered by competing employers or to other employees within the same firm (e.g. to guard against wage discrimination – see Estlund, 2014). In contrast, wage calculability becomes pertinent in situations where workers receive manipulated (i.e. dynamically priced) piece-rate wages, preventing them from estimating how much they will earn at the end of the day.

4 While struggles to counter calculative asymmetries are also fundamentally about gig workers’ data rights, given that such asymmetries are predicated on platform-governed data extraction and monopolisation, the riders I engaged with did not understand their efforts through this lens. Although they did collect delivery data that served as input for their improvised calculative activities, these activities were narrowly geared toward uncovering and reproducing the ‘formula’ behind Deliveroo’s distance-based fees system and were not connected to a critical data rights strategy. For a reflection on data extraction as a critical site of capital accumulation and labour organising, see Van Doorn and Badger, 2020.

the influence of dynamic pricing techniques (Moor & Lury, 2018:502). Accordingly, app-based food delivery workers are having a much more difficult time estimating their future income and the attendant courses of action required.

By examining how a few Berlin-based riders challenged the power of Deliveroo's black-boxed delivery pricing algorithm, this study also contributes new insights to the burgeoning research on platform-mediated gig economies, especially studies on 'algorithmic management' and gig workers' 'algorithmic competencies' (e.g. Lee, Kusbit, Metsky & Dabbish, 2015; Rosenblat & Stark, 2016; Shapiro, 2018; Jarrahi & Sutherland, 2019; Sun, 2019; Griesbach, Reich, Elliott-Negri & Milkman, 2019). It highlights the central role of dynamic pricing in the automated management of an 'on-demand' labour supply (cf. Shapiro, 2020), while providing further evidence supporting the argument that 'workers are not passive recipients of algorithmic management and control' (Jarrahi & Sutherland, 2019:8). Instead, I show how riders initiate 'sensemaking activities' that allow them 'to create a working understanding about algorithms and how they may affect their work' (Jarrahi & Sutherland, 2019:8; Sun, 2019). Yet whereas previous research positioned sensemaking and competency-building activities as a prerequisite for gig workers looking to gain a competitive edge, this study shows how such activities can also become enrolled in a solidaristic project seeking to collectivise rather than divide food delivery workers. The minor politics of calculability pursued by the riders I was following served as a means to a more ambitious end: recruiting new members for a radical union-led campaign to secure better working conditions for app-based food delivery workers.

Finally, then, this study contributes to a small but growing body of research on emerging and consolidating forms of platform worker protest, resistance and struggle (e.g. Scholz, 2017; Tassinari & Maccarrone, 2019; Cant, 2019; Moore & Joyce, 2019; Briziarelli, 2019; Van Doorn, 2019). Demonstrating the tenuous relation between the politics of calculability and a broader wage politics whose expanded purview includes workers' rights, protections and benefits, I examine the conditions under which the economic subjectivation of platform workers can shift towards their political subjectivation. I view the gig economy's proliferation of opaque dynamic pricing schemes as a critical frontier for platform worker struggles,<sup>5</sup> where the experimentation with calculative devices forms an alternative mode of resistance that can complement public protests, petitions or strikes. At the same time, this article also documents the difficulties that riders experienced when attempting to translate their fight for better and more transparent earnings into a more comprehensive labour politics. Moreover, and more fundamentally, I address the limits of struggles over calculative power against the background of a pervasive platform exceptionalism – a socio-legal imaginary that treats platform companies as unique business entities and enables them to engage in regulatory arbitrage. This imaginary is legally articulated through so-called 'clickwrap agreements',<sup>6</sup> which contractually enforce the subordination and rightlessness of gig workers while shoring up a platform's market-making power.

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5 See e.g. the #PayUp campaign led by the worker organisation Working Washington: <https://payup.wtf/>.

6 For an explanation of this term and its origins, see <https://en.wikipedia.org/wiki/Clickwrap>.

The next section sets the scene for what follows by providing a brief account of how the wage paid to food delivery workers had to be recomposed in order to optimise their labour supply according to the imperatives of on-demand platforms. The subsequent section then introduces Jaako, a Berlin-based rider who, together with some friends and fellow activists, organised an attempt to get a better grip on Deliveroo's distance-based fees system. After detailing how this makeshift effort came together and to what extent it managed to reduce the platform's engineered calculative asymmetries, I address the group's inability to move beyond a politics narrowly focused on wage calculability. Finally, the coda offers some concluding reflections on what Deliveroo's sudden departure from their German markets – shortly after my fieldwork in Berlin ended – can teach contemporary gig economy scholarship.

## Reconfiguring the courier's wage

Recent work on dynamic pricing in the fields of economics, information science and operations research has been grappling with questions regarding the optimisation of financial and behavioural incentives in order to achieve an on-demand platform's desired just-in-time service level in the most cost-efficient way possible (e.g. Chen & Sheldon, 2015; Allon, Cohen, & Sinchaisri, 2018; Guda & Subramanian, 2019; Benjaafar & Hu, 2019). Securing an optimal service capacity in a volatile marketplace remains a challenge for ride-hailing and food delivery platforms alike. After all, while the imposition of app-based management techniques can to a large extent shape *how* food delivery workers do their job, the used techniques provide less grip on *when* and *how much* they work, because this workforce is increasingly composed of independent contractors who – at least de jure and prima facie – determine their own schedules. In order to coax freelance couriers to log onto the app, start accepting orders and keep working as long as is needed, food delivery platforms have had to transform how they approach the notion of a wage and how it is paid out to their courier fleets. Whereas, traditionally, couriers have worked directly for a restaurant that pays them a set hourly or daily wage (often off the books), to which cash tips are expected to be added with each delivery, most food delivery platforms have not only formalised and automated these financial transactions through an electronic payment system that bypasses the courier (and thus makes it easier for customers not to tip), but have also switched to a piece-rate model in which couriers are paid per delivery. Paying couriers per delivery affords platform companies a much tighter grip on their flexible labour supply, allowing them to design data-driven financial incentives that respond to sudden fluctuations of service demand in a more granular and agile manner. In economic terms, it enables operations managers to better exploit positive wage elasticities (Allon, Cohen, & Sinchaisri, 2018; cf. Shapiro, 2020).

From a behavioural economics perspective, per-delivery payment schemes come with particular 'reward schedules' whose irregular 'hit frequency' can have a powerful effect on the behaviour of couriers who can no longer count on the security of an hourly wage (Schüll, 2012). When logged into the app and waiting for orders to be dispatched, which is often referred to as receiving a 'ping', couriers are faced with questions like 'When will I get my next ping?'; 'When I don't get one for a while, what

may be the reason?'; 'When I do get one, what happens if I reject the offer – how will it affect my future income opportunities?' These negotiations are then further complicated by the introduction of dynamic delivery pricing, which reconfigures the piece-rate wage into a dependent variable whose value is usually determined by a combination of the following components: a pickup fee, a drop-off fee, distance-based compensation, (estimated) time-based compensation and – in some cases/markets – order 'desirability'.<sup>7</sup> Crucially, these components are themselves variables whose values can constantly be adjusted, as can their relative weight in the calculation of the composite payout – which is regularly restructured.

In addition to the previous questions, couriers now also have to ask themselves 'When I get my next ping, *how much will they offer me?*'; 'If I reject the offer, will the next offer be *better or worse?*' As Schüll notes with respect to machine gambling, the most potent behavioural reinforcement can be achieved through schemes 'in which subjects never know when they will be rewarded, or how much' (2012: 108). Likewise, platform-orchestrated food delivery turns into a game-like experience in which couriers are constantly evaluating variable offers (substituting for set wages) intended to incentivise them to work. When an offer is deemed worth the effort, a courier accepts the 'deal' by swiping or tapping the screen and gets going. But to what extent are couriers able to determine if an offer is worth their effort – i.e. whether they should stay or go? When considering the kinds of (algorithmic) control and precarity enacted by food delivery platforms, more critical attention should be focused on the everyday conditions under which a wage can be earned and the loss of grip on these conditions, as well as on a controllable future more generally (cf. Alberti et al., 2018; Qi & Li, 2019).

The notion of grip usefully suggests that the politics of calculability, like the politics of precarity, is also an *affective* politics. Calculation, as Callon & Muniesa (2005) remind us, cannot be distinguished completely from judgment or conjecture, which are related ways of feeling out the present and future state of things. While such practices require information, they are not necessarily about (numerical) accuracy or precision – although, as we will see, they certainly can be – and may just as well involve a more tenuous concern with not being deceived or left in the dark. Grip is about intersubjective practices of sensemaking that strive to secure a calculable future in times of pervasive insecurity, following what Jacob Hacker has called 'the great risk shift' (2006). For Deliveroo riders, as independent contractors whose freedom comes at a steep price insofar as they are expected to absorb most of the work-related risks offloaded to them, one precondition for securing a calculable future is the capacity to calculate – or estimate, to the best of their abilities – their earnings for the next weeks or months. Some Berlin-based riders thus worried that Deliveroo's introduction of distance-based fees might further hinder this crucial capacity. They wanted to know more about how they were getting paid – yet how was it possible to get a grip on something as obscure as a proprietary pricing algorithm?

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7 E.g. the food delivery platform DoorDash includes a 'desirability' factor into its calculation of order prices, taking into account the number of times an order has been rejected by previous couriers. <https://www.theverge.com/2019/8/22/20828742/doordash-tipping-policy-change-drivers-earning-more-money>.

## 'Reverse engineering' Deliveroo's pricing algorithm

This is where Jaako comes in.<sup>8</sup> Jaako is a Finnish rider in his late thirties who moved to Berlin for an MA program in 2015 and started working for Deliveroo after running out of money in the summer of 2017. Together with three fellow riders, he has been intermittently collecting data on delivery fees and distances since the start of the trial period, using an open source web-based application that one of them built. While the app is very rudimentary and depends on the logging activity of participating riders, they nevertheless hoped that their experiment could 'reverse engineer' Deliveroo's pricing algorithm with modest means and thereby generate more knowledge about how they were getting paid in the new system. According to Jaako, their initiative started due to a mix of curiosity and self-interest:

*They weren't saying how the fees are being determined and of course we are curious. I was like 'oh but is there a way we can try to measure it somehow?' I want to know how the system works because it is in my interests, so you know, when I – it's a kind of game [ . . . ] When you are on the job, since we have the possibility to accept or decline an order, there's a lot of thinking around, okay, so what kind of order should you take? [ . . . ] You have to constantly be thinking about what your strategy of playing the game is and if you don't have the information of how the game works probably you can't be very . . . I mean the more you know about how the game works, the better informed you are to, you know, to make your own choices.*

Small-scale data collection and analysis was thus a way to uncover the obfuscated rules of Deliveroo's order pricing game. While the project may have been sparked by curiosity and self-interest, it also had a strong political dimension due to its incubation within the context of the Deliverunion campaign. Started by Deliveroo and Foodora riders in the second half of 2016, and soon gaining support from the FAU (a German anarcho-syndicalist union), this grassroots campaign had initially been quite prolific in its fight for better working conditions for food delivery workers but was increasingly struggling to retain active members and sustain a connection to the wider rider community in Berlin. As such, it quickly seized upon the controversy surrounding Deliveroo's new payment model as an opportunity to reassert its visibility and relevance, by reaching out to riders and motivating them to take action. The question, however, was what kind of action – and against what, exactly? To get some kind of grip on the new system and its impact on rider earnings, Deliverunion set out to organise an event where riders could come together to share experiences, ask questions and deliberate on what kinds of future response would be possible

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8 "Jaako" is a pseudonym. All Deliveroo couriers interviewed for this study gave their informed consent in advance of the interview and all personally identifiable information has been removed from the resulting transcripts. A total of 30 couriers participated in interviews during the fieldwork in Berlin, which took place between October 2018 and June 2019. Couriers were recruited on the street, in restaurants (while waiting for an order) and online via WhatsApp groups. Interviews took place in public locations. Interviews were semi-structured and open-ended, lasting anywhere between 50 and 140 minutes. Couriers were offered a €15 gift card as compensation for their time.

and appropriate. The idea was that Jaako could then use this gathering as a platform for the communication of the group's first findings.

While Jaako could not be 100% sure, the data they had managed to collect during the first weeks of the trial, based on about 130 deliveries, 'is so perfect in explaining the fees system' that he was confident enough to say it is 'highly likely' that Deliveroo's distance-based fees are calculated using only the GPS coordinates of the rider, the restaurant and the customer. He claimed that, in fact, Deliveroo does not look at any map at all: 'They let us do that job. We are the ones that have to look at the map, they just have to draw a direct line.' Jaako, who has a social science background and experience with statistical modelling, derived his confidence from a series of regression analyses he conducted on the delivery distances, which produced a model showing 'that there is a formula to transform those distances into the precise fees with very little remaining error between our predictions.' When I asked him what this formula looks like, I was impressed by the poised and rather meticulous manner in which he answered my question:

*The formula is, if I remember right by heart, 3.80 [euro], or actually the model results in precisely 3.79 [euro, as a base fee], plus something like 64 cents per kilometer up to two kilometers and then above two kilometers it is 1.20 or something like this, per extra kilometer on top of that.*

Consequently, he believed their calculations show that Deliveroo is disingenuous when it says that it cannot divulge information about how its distance-based fees are calculated because these fees also take into account a rider's estimated waiting time. In Jaako's view, this statement is very likely just a 'lie' that the company spreads as part of its consistent strategy of withholding information and thereby giving itself the opportunity to change its policies and pricing model whenever this is needed, without having to inform riders about it. Now that he and his friends had managed to produce a formula that – according to Jaako – closely approximated Deliveroo's pricing algorithm, this newfound calculative power gave them a sense of control insofar as future data analyses 'will at least show us when they change it [the fee structure]'. Yet this would require continued data collection and so far they had been struggling to find riders willing to go through the repeated effort of entering the price of each accepted delivery offer into the web-based app and logging their GPS coordinates. If the initiative was to remain relevant and effective, it obviously had to be scaled up and some kind of sustainable, distributed data-collecting routine organised. Jaako hoped that the presentation of their results at the coming event would help to energise riders and popularise the app.

## **From calculative power to organised labour**

Among the about 30 people attending that afternoon in December were 'senior' riders who usually did not engage with the Deliverunion campaign, newcomers who had not heard of the campaign before receiving a flyer, riders of different nationalities (mostly European) and, while young men still made up the majority, there were at least a handful of women present. It didn't take long before a rather unruly discussion about

the new payment system erupted from the group. Riders clearly needed to vent and wanted more information, frustrated as they were by their calculative incapacity, resulting in much heated speculation, conjecture and anecdotal evidence. I felt a palpable sense of dismay in the room as I listened to calls to rise up and strike, which were quickly rebuffed by other riders who pointed out that our numbers were far too low to pull off a successful strike and, ultimately, nobody really knew *what* was going to happen in the new system. It was in this tense setting that Jaako gave his presentation, calmly – as ever – showing us a graph visualising the results of his regression analyses. What we saw was a fairly plain-looking image depicting a succession of purple dots thickly plotted along two axes, the *x*-axis representing distance and the *y*-axis representing the fee in euros. As Jaako explained his experiment and findings, the crowd calmed down considerably and when I looked across the room I saw that most riders were listening attentively and trying their best to follow him, some faces revealing either limited comprehension or incredulity – or a mix of both. There were few questions after he finished, which could be interpreted in different ways. When I asked Jaako, a few months later, how he experienced his presentation, he reflected:

*I was happy to share what we learnt with people and I think I was kind of surprised that people actually pretty much took it. Like there was very few critical comments in a way in the meeting and even afterwards on the app or like most people are like 'ah okay, ah yeah, okay that's interesting'. I think maybe not everyone believes what I am saying about it, but nobody is like very loudly objecting and a lot of people seem to be trusting that okay this guy has done some work on it.*

When I suggested that the lack of response might reflect that people didn't really understand the graph or how his findings were produced, he added:

*This might be, that was also a little bit because the graph we showed in the meeting was a little bit confusing because we were [laughs] in the middle of doing it. If I had to do it now, I would show a little bit more refined picture that would be more clear and clean. I would be able to present it actually in a tiny bit more approachable and understandable way. I didn't want, I mean, I was afraid that I would have to speak about it more technically and defend it more and I would have been prepared to do it. But this was not where I wanted the meeting to go, because this was a meeting where you would talk about what do we actually want to do, something about working conditions, and not talk about how do you make regression modelling and is it a believable model.*

For Jaako, this presentation formed just a modest part of the event they staged, which also featured two Skype conversations with riders in Bristol and Toulouse, who were engaged in organised protests against decreased payouts in their markets and were pursuing similar efforts to decipher Deliveroo's local pricing algorithm. Still, he had been eager to share his findings and 'to tell people "look this is how the company determines your fees"'. Moreover, his intention was to inform riders about the availability and functionality of the tracker app, in the hope of encouraging more people to start using it during their shifts and thereby scaling the data collection efforts. This could, in turn, help Deliveroo's rider community to develop a more durable and

robust understanding of ‘what’s going on’ with respect to wage fluctuations in Berlin. Despite the welcoming reception of their initiative, however, Jaako and his co-conspirators didn’t see a substantial increase in volunteers after the event, and those who did offer their help were mostly riders already connected to the Deliverunion campaign. One of these riders was Oskar, a Polish rider in his early thirties who became involved in the initiative a little later but was very eager to contribute by collecting new data. Back in February 2018, he had been one of the driving forces behind a petitioning initiative coordinated by Deliverunion, which had motivated Jaako to join the campaign the following month. Instead of collecting signatures, this time he was out collecting data during the last weeks of December and again in the new year, accepting every order he received so that their sample would be as varied as possible. Echoing Jaako, he explained his motivation in the following way:

*We want people to have a proof. As we said, there’s a lot of theories, a lot of impressions [about the new payment system], but no one has a hard proof that something’s going on and we wanted to provide it. We want people to actually have a clear proof and then if people are angry, then they have a solid argument that something bad is going on.*

As Oskar realised, however, it is extremely difficult to reach and collectivise these ‘people’, or even to determine who they are and to what extent and why they are angry with Deliveroo, given that Berlin is a large city with hundreds of riders *and* drivers working more or less in isolation from each other.<sup>9</sup> Furthermore, the composition of ‘people’ changes constantly due to Deliveroo’s high rider/driver turnover, so that labour degrading measures which are upsetting to experienced riders/drivers may feel completely normal to newcomers. This was also one of Deliverunion’s main reasons for organising the rider event: to gather a wide variety of riders (and preferably drivers) and to provide ‘hard proof that something’s going on’, which would hopefully catalyse collective anger. Although anger was certainly part of the mix of negative emotions that had marked the event, it was nevertheless a kind of anger that comes in spurts and then seems to quickly dissipate when everyone resumes their daily business. It was also a kind of anger arising from uncertainty and strategically obstructed calculative agency, rather than a well-informed feeling of indignation that can be directed at a clearly identified problem and its causes. It is in this respect that Jaako and Oskar hoped that their initiative might still have offered a stepping stone. As Jaako sees it:

*The meeting wasn’t in every respect completely successful maybe, but right now I cannot think of a better way to actually kind of, to prepare the floor so to say. To have some kind of review of ‘here’s where we are now’ and some kind of prepared view for ‘so here are some ideas of what it might be becoming’ and then try to start a discussion from that. [ . . . ] And maybe that would also inspire people to get*

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9 According to my observations, Berlin’s Deliveroo drivers are usually first- or second-generation immigrant men with a Turkish, Indian or Pakistani background. They tend to be older than riders, who are commonly in their mid-twenties and most frequently hail from Eastern and Southern European countries (in addition to a Latin American contingent). During my fieldwork I experienced a deep division between riders and drivers, which is a topic beyond the scope of the current analysis but something I hope to return to in future publications.

*more into the campaign, the union campaign, if we are to show that if we do stuff we will have more information and maybe then we can decide our actions based on a bit more information.*

Ultimately, their calculative experiment produced a makeshift market device – in the form of a web-based tracker app – that not only offered riders more insight into how Deliveroo determines its distance-based fees, but was also mobilised as a magnetising device to attract riders whom Deliverunion had previously alienated or failed to reach. As such, it did not just contribute to a minor calculative power shift in a contested process of platform-dominated marketisation, but at the same time – in the same movement – sought to collectivise riders in an effort at union-centric *politicisation*. Yet this latter process had been challenging and tenuous, at least in part due to the campaign's perceived lack of efficacy within the larger rider community and FAU's explicitly far-left political signature, which many riders did not identify with. Berlin's rider community – not to speak of Deliveroo's many drivers – is very diverse, if not fragmented, and consequently many riders do not share Deliverunion's political diagnosis regarding the problematic working conditions of platform-mediated food delivery. What they *do* share, however, is an interest in securing a decent income, which is exactly the mobilising force Deliverunion decided to leverage in order to (momentarily) transcend the political differences hindering its organising goals. What started as an experiment to achieve more grip over wages, driven by curiosity and self-interest, thus proceeded to double as an instrument for scaling and collectivising such self-interest in order to build worker power. As Jaako acknowledged, 'the distance fee is something that everybody has a similar interest in', which cannot be said about issues pertaining to employment status and attendant questions concerning labour protections, rights and benefits. This is something he felt quite ambivalent about:

*I am personally feeling a little bit like: do we want to open that box [of other labour issues] or should we just concentrate now on this thing that we really agree on and not go to that box of things where there is no real agreement, actually, and we will again, like, divide the riders?*

While Jaako, Oskar and their fellow Deliverunion members were dedicated to the struggle for labour rights and social justice, they were also hesitant to alienate their newfound rider base, on whom the campaign depended for its legitimacy. For this reason, they tentatively agreed that it was best to keep 'that box' closed, at least for now. Yet this strategy of narrowing down the scope of their demands in return for more support is not without pitfalls. While the ability to understand how one's earnings are being calculated is certainly a necessary condition in the fight for a fair wage in platform-mediated gig economies, it is not sufficient without embedding the politics of calculability in a more capacious labour politics that includes workers' rights, protections and entitlements as major stakes to be gained. That such an expansive political project is indeed critical was illustrated by Deliveroo's sudden exit from its German markets, a few months after my fieldwork was completed. This event cast a sobering new light on the riders' struggle to gain calculative power – one that illuminated its limitations against the background of platforms' market-making *and* -breaking abilities. I reflect on these limitations in the coda that concludes this article.

## Coda/conclusion

Simply put, the problems of platform labour are obviously not limited to the unequal distribution of calculative power in multi-sided markets. An underlying problem is the endurance of platform exceptionalism: a socio-legal imaginary that allows companies to avoid regulation and disavow responsibility for the workers providing services through their platform on the grounds that the value produced by these services is not essential to their business model (Bensinger, 2019). Instead, this business model ostensibly revolves around the provision of an ‘information’ or ‘software service’ to its users/customers (Posada & Shade, 2020). Platform workers can then be legally framed as ‘suppliers’ who constitute a category of entrepreneurial customers insofar as they use the platform to market their services. This neoclassical contractual framework, in which formally equal market actors freely ‘partner’ up in a series of economic transactions, helps to obfuscate the platform’s profound control over how these services are produced, valued and monetised. My point is that such obfuscation lies at the root of the precarity and exploitation encoded into the algorithmically managed labour process gig workers are routinely subjected to, insofar as it not only saves platform companies millions in labour costs but also pushes them to experiment with new ways of extracting maximum value from contractors who cannot be fully controlled but are readily disposable (cf. Shapiro, 2020).

This disposability was painfully underscored by Deliveroo’s unexpected departure from Germany, announced a mere four days before suspending all activities on its German platform (Griswold, 2019). A company email informed the roughly 800 Deliveroo couriers serving Berlin that, at the end of the week, they would no longer receive delivery offers through the app and would thus effectively be made redundant, severely disrupting the livelihoods of many riders and confronting others with considerable income gaps. After years of elaborate, dynamic and unilateral market construction, its sudden dissolution seemed unreal – a truly incalculable event. Or perhaps it is more apt to call this event *extra*-calculable, as it exceeded the everyday calculative practices and asymmetries that shape participation in Deliveroo’s food delivery markets. Markets are not just socio-material constructs; as the pragmatic sociology of markets highlights, they are also legal creations whose terms and conditions are shaped by contractual arrangements. The contract, as a ‘projective geometry of obligation and its interiorised calculus,’ conventionally functions as a future-oriented technology enabling ‘the transformation of contingency into necessity as a specifically capitalist problem’ (Mitropolous, 2012:19–20). However, Deliveroo’s clickwrap Supplier Agreement actually stipulates *the necessity of contingency*, transferring the burdens of uncertainty to a workforce of independent contractors whose self-management and risk-absorption form makeshift responses to the question of futurity as a problem specific to platform capitalism.

Future platform labour research and activism should thus investigate how algorithmic labour control, calculative asymmetries and contractual arrangements are productively entangled and become weaponised in the platform-governed construction of on-demand service markets. I use the term ‘weaponised’ here because these managerial tools coalesce around one single goal: to break the power of organised labour. They do so by creating a formally entrepreneurial setting in which gig workers are not only legally framed as small

business owners but are also enrolled in a workplace engineered as a free marketplace, where each has to strategise and scheme in isolation to cobble together a livelihood. There is thus an urgent need for labour organisers, in collaboration with gig workers, to further elucidate the level of dependence and vulnerability experienced by allegedly 'independent' contractors, in the face of corporate platforms' unchecked power to not only manipulate wages but also deny or terminate market access. Although Jaako and his friends were hesitant to open 'that box' at the time, the fight for a fair wage in on-demand service industries ultimately must go hand in hand with a collective pushback against the legally sanctioned disposability and rightlessness of gig workers.

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