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Labouring at the Interface:
Exploring the rhythms and resistances of working in London's food delivery gig economy

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DECLARATION OF AUTHORSHIP

I, Adam Badger, hereby declare that the work presented in this thesis is the result of original research I conducted whilst enrolled in the Department of Geography and School of Management as a candidate for the degree of Doctor of Philosophy. This work has not been submitted for any other degree or award in any other university or educational establishment. Where I have consulted the work of others or worked in collaboration, this is clearly stated.

19 October, 2021

ABSTRACT

This interdisciplinary PhD investigates the ways in which digital technologies are changing – and generating – new forms of work and lived experiences of our urban environments by bringing theoretical concepts from both Geography and Organisation Studies to bear on ethnographically generated empirical data. This comprises a nine-month covert autoethnography working for two gig economy platforms as a food delivery courier in London; an eighteen-month overt ethnography of the trade-union responsible for organising their workers; and interviews deployed both inside and outside of the workplace. Methodologically, it engages with debates surrounding ethical and legal interaction with vulnerable workers in the gig economy, in addition to addressing 'covertness' and 'situated knowledges' made in the field. The empirics focus on both the every-day experience of being a gig worker in the urban environment, and the diverse worlds riders navigate as part of their daily existence. It explores the lived experience of gig work through the lenses of sociomateriality, the interface envelope, and rhythmanalysis. Results highlight the contested realities of digitally enabled work, as couriers jostle with the smooth interfaces offered by platforms and the messy realities of the labour they undertake; of cycling through London's crowded streets, of soups sloshing around delivery bags, and the mysterious, shapeshifting spectre of an algorithmic manager. Accordingly, it promotes a holistic understanding of technologies as part of broader assemblages that emerge in practice, extending currents in critical geography that deconstruct reified understandings of the digital as somehow abstracted from the complex realities of place. This develops through an in-depth analysis of the labour process and the way this is interpreted and engaged by workers in chapter 5. This is followed by a discussion of the skilled nature of gig economy delivery work in chapter 6, with attention paid to the interactions between digital platform and city. In chapter 7, these worker knowledges are applied to conceptualising resistance in the gig economy in four discrete (but interlinked) sites:

the app, the street, the court and the polity. The thesis concludes by reflecting on the role of venture capital financing in the gig economy to provide a 'meta-rhythm' that underscores organisational change and shifts in the workers' experience.

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This thesis would not have been possible without the unwavering support of my oldest and dearest friends. Ben Smith, Tim Yates, Emily and Sajjad Khan, young Idris, Charlotte Hughes and Sian Wakely. You are all amazing. Thank you for always being there, and I'm so sorry for being late to everything (texts, meetings, all of it…).

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PUBLICATIONS

Material uncovered and analysed as part of this PhD research has also been published in other forms beyond the thesis document. A longer discussion of legal-ethical research decisions and access arrangements (discussed in Chapter 4 of this thesis) has been documented in the edited collection chapter Badger & Woodcock, (2019) 'Ethnographic Methods with Limited Access: Assessing Quality of Work in Hard to Reach Jobs'. Detailed discussion of my methodological approach also appears in the edited collection paper 'Me, Myself, and iPhone: Sociomaterial

reflections on the phone as methodological instrument in London's gig-economy' (Badger, forthcoming, 2021). Discussion of platform capitalism, data assetisation and dual value production (explored in Chapter 5 of this thesis) is further elaborated in van Doorn. & Badger's (2020) Antipode paper 'Platform Capitalism's Hidden Abode: Producing Data Assets in the Gig Economy' and in van Doorn & Badger's (2021) edited collection chapter 'Dual Value Production as key to the gig economy puzzle'. I have written-through a comparison of Mercury Meals and Iris Delivery in an edited collection chapter entitled 'It Gets Better With Age: AI and the labour process in old and new gig-economy firms' (Badger, 2021). Elsewhere I have co-authored a piece for the press 'Public Toilets Are a Workers' Right' (Badger & Armston-Sheret, 2021) for *Tribune* Magazine, and published in the *Invisible Worker* 'zine which I have also helped edit.

This thesis is dedicated – with enormous love and gratitude – to my family and partner whose unending support made it possible, and to the gig workers who are working and fighting for a fairer future. It is written in memory of my Nan, who sadly never got to see it completed.

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'What do I do? Well, I basically deliver hipster food to geographically displaced hipsters…' Jon (Interview, January 2019)

1.0 Rosa's Thai to EC2Y, £3.95

It's 12:50 in the afternoon as I make my way back towards the centre of my zone. Turning the wheels of my pushbike around from the last job (a regular haunt - the UBS office on Broadgate Circus, Sun Street) I know that there are plenty of restaurants nestled in the small London streets that encircle Spitalfields and the Truman Brewery serving the delicious, just culturally exotic enough, food that highly paid office workers seek out for their lunch al-desko. Helpfully too, it is smack bang in the middle of the zone map and is away from the grab-and-go locations like Nandos in The City (Lime Street) that become even more clogged than The City of London's streets at lunchtime and make picking-up and cycling an excruciatingly slow and low-paid affair. This is the tacit deployment of knowledge gained by slow and agonising shifts not capitalising enough on the peak time orders on offer. !!!PING!!! My phone alerts me to a new job opportunity as I head down Brushfield Street. On offer is Popeye's Fish and Chips, but the fare is measly low, and I know that there must be better paid jobs in the system. I reject the job and move on, keeping one eye on my

handlebar mounted phone, and the other on the road ahead. As I pull-up to Commercial Street it goes again. !!!PING!!! This time the offer is for Rosa's and the pay seems good enough for the distance to make it worthwhile. ***Swipe***. I pull my leg over the top tube of the bike and affix it to a nearby lock-up re-opening the app to inform Mercury Meals that I have arrived. ***Swipe***. I do this as early as possible to make sure that if they take a long time preparing the food, I am able to argue to the that I have been waiting too long – that the responsibility for any slowness is with the restaurant and not me. As I head through the restaurant doors, I find other riders, but no customers sitting and eating. As usual, Rosa's at lunchtime is a vista of ugly coloured uniforms and sweaty men (myself included) with no actual diners present. Conversation is stilted, but we chat about the day. The standard question 'you busy' takes the place of 'hello' with colleagues as we are all suspicious that the algorithm is somehow dealing us an unfair hand and giving us all the shit orders, or just no orders at all. As the riders in the restaurant each leave in turn with their food, mine too arrives. At this point I am supposed to swipe again to say that I have the food. Instead, I load the food into my bag, head out to my bike, unlock it, get the bag on my back mount my phone on the handlebars and get into the road. ***Swipe***. The address I am to deliver to is released. This is a trick that I picked-up off other riders. A folk knowledge if you will, that by swiping to say you have the package at the last possible moment, it makes you look quicker and the restaurant slower – which should by all mythical accounts make the algorithm treat me better. To prioritise riders that are faster. Whether it does or not seems like it will be forever a mystery. With that, I am off. My journey is about a mile to WeWork Moorgate, back past Sun Street and the UBS office, and onto the lands of hi-finance and jazzy co-working space. It is here that I arrive at a set of traffic lights, navigating between a bus and a lorry with only inches to spare to get out in front and into their direct eye-line – the safest part of any road littered with big vehicles. It is guarded by a policeman – so no skipping this red for me – and I see another courier pull up alongside me with an IWGB trade-union sticker on his bike frame. We haven't met before, but as the seconds tick away, we discuss the average days that we've had and the next branch meeting, as well as the perceived progress of the court case against Deliveroo, imagining the futures that could lay in wait if a victory came. As red gives

way to amber, I clip my right foot back into the pedal and head off straight ahead as he pulls left. I know the location well and am able to ***swipe*** to say I have arrived whilst stuck at a set of traffic lights – again, trying to make myself look quicker to the algorithm and shift as much time as I can onto the customer, who I can pretend was slow to come and meet me. It also allows me to send a notification to the customer once I have done this ***press*** giving them the digital nudge to look up from their desks and to come and get their food, saving me precious moments in peak time. I go through the normal routine of locking-up my bike and rushing inside, signalling to the security that I need to get past the gate. I ***swipe*** on the app to tell it the job has been completed and that I am available for more work. By the time I have put the food on the desk, I have another order waiting for me to accept. ***Swipe***. Running out of the office as quickly as is socially acceptable I make my way over to my bike and head off again. The time is 13.04 and the number of orders left in the shift will soon evaporate with the satiated diets of diners. Whilst my stomach rumbles, I am aware that the lunch time rush is only short lived, so I push on.
(Ethnographic Diary, December 2018)

1.1 Introduction

The above account is taken from my autoethnographic field diary, recounting just one job in an otherwise unspectacular lunchtime shift for Mercury Meals[1]. It explicitly highlights the sociomaterial work environments riders manage (of phones, apps and algorithms, foods, restaurants, geolocations, bikes, traffic, customers, and more), that are in turn cast within the broader rhythms of urban and culinary life. This thesis is an analysis of those sociomaterial environments. It emerges from an explicitly interdisciplinary setting: between my own home discipline of Geography and the field of Organisational Studies (this PhD was co-supervised across these two); as well as other disciplines from which I borrow heavily, such as Sociology. The field

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[1] Mercury Meals is one of the two platforms I worked for throughout fieldwork. More information on the company can be found in Interlude 1. Both have been given pseudonyms to protect their identity. Both are delivery platforms operating in last-mile logistics, using gig workers to move packages across the city.

diary extract and the thesis as a whole follow a line of inquiry that privileges the lived experiences of the work (and the workers that undertake it), in addition to interrogating the deeper organisational processes at the heart of so-called "gig-work" ('so called' because of renewed interests in de-reifying its difference to other forms of work in the popular imagination, and casting doubt on the proclamations that gig-workers are somehow 'free and flexible' to work gig-to-gig).

Similarly, this thesis is a product of its time. Beginning in 2016, in the same month as the first wave of strikes against Deliveroo, it has emerged with the workers, unions, and technologies that demarcate its scope. Since then, the platform economy has been making headlines across the world, with journalistic commentaries charting the 'rise' of this supposedly 'new' form of labour organisation. In the early days I met this literature with frustration, as the platform economy was heralded as the silver bullet to the employment crisis in the UK and other states following the fall-out of the 2008 financial crash. On the one hand, the unemployed could once again sign-up in the morning and be out working in the afternoon – like the stories my parents would tell me of 'when they were young' growing up in the industrial working-class areas of Birmingham and Bristol. Simultaneously, the Janus-like spectre of platform capitalism provided an avenue for all that stagnant cash floating around in the economy to find its escape. Since the crash, interest rates were negligibly above zero, and inflation was devaluing the savings of investment funds, pension funds, and ultra-high-net-worth individuals alike. Blue-chip stock prices had stalled and the mortgage/property market was in a downward spiral. However, by buying-in early and building diverse investment portfolios, huge financial returns were promised in exchange for getting behind the hyped-up Silicon Valley and Roundabout firms like Uber and Deliveroo that were just debuting onto the global marketplace and consciousness. It struck me as odd that in reality, beyond all of this promotion, nobody apart from the workers themselves really knew what the work was like. And the workers were on strike. Not only that, but they were also building court cases to challenge the platforms head-on, an unnecessary act if any of the news media was telling the truth. And so, it is this intersection between dominant narrative and lived

reality, and between the digital utopias and lived experiences on the road, that this thesis looks to explore.

The research consisted of three primary modes of investigation. This included a nine-month, semi-covert autoethnography and participant observation (covert regarding the platforms being investigated, as overt as possible to other workers – see Chapter 4 for further discussion) of two London based food delivery platforms. This ran from late July/Early August 2018 to April 2019, and involved taking hundreds of packages across various areas of London (mostly focused on East Central and West Central postcodes). It allowed me to see how the work takes place on a day-to-day basis, understand the rhythms of the labour, and interface with the community of other workers in the same geographies. This research led to the creation of thousands of words of field diary entries, approximately 2,500 images, video material, screen- and audio recordings. The platforms I investigated have been given the pseudonyms 'Mercury Meals Ltd.' and 'Iris Delivery Ltd.' (introduced in greater detail in 'Interlude 1 – Meet the Platforms') throughout this thesis. Secondly, it included in-depth semi-structured interviews with ten participants who were riders involved in working for Mercury Meals and/or Iris Delivery, and the Independent Workers of Great Britain trade union (IWGB) who organise their workers (discussion of sampling approach and rationale is discussed in Chapter 4 below). The third strand was an eighteen-month overt ethnography at the IWGB that began in January 2018 and ended in June 2019. I began this in the University of London branch (this was the only branch I was eligible to join at the time, before moving to the Couriers and Logistics branch once I became a food delivery courier). This allowed me to ethnographically research resistance strategies by organised labour in the gig economy across various sites including street demonstrations and strikes, in addition to courtroom battles and policy interventions.

As someone often described as a 'luddite' by friends and loved ones (I take this as the compliment it is not meant to be) I have always had an oddly keen interest in technology and work. Perhaps this stems from my own familial background; my father is a third generation self-employed French Polisher and my mother is a now

retired social worker who was - in part - edged out of the city council apparatus because of her difficulties in adopting the new 'digital directives' imposed in their attempts to modernise. As such, I have grown-up with an interested, yet critical, perspective on 'tech'. Its undeniable march into the world of work has so many emancipatory opportunities, but when it comes under the pervasive interests of capital, there are pressing concerns that it only seems to be making us work longer, harder, and faster. What follows, by way of introduction, is an exposition of the platform economy and its relations to gig work as we understand it today. However, it must be understood that this development falls within a long history of the intertwining of technology, work and resistance: starting with agricultural machinery, from the scythe to the harvester and the aforementioned Luddites, through to industrial machinery and organised labour in trade unions, extractive technologies, and finally those used to augment the service sector. The notion of the platform economy only represents the contemporary leading edge of technology's co-constitution of our working lives.

1.2 The Platform Economy

Whilst the platform economy does represent a significant contemporary shift in the management of work, it is by no means a totally new phenomenon. Its lead protagonists (or 'Unicorn'[2] companies) in Western markets - Uber and Deliveroo - were founded in 2009 and 2013 respectively, and have undergone significant change and growth since their inception. Designed with scale in mind and backed by the seemingly bottomless pockets of venture capitalists, they have been able to grow rapidly, cannibalising existing markets and vying for monopolistic positions in urban centres across the world. For example, according to Deloitte (2018), Deliveroo achieved a 107,000% growth rate between 2014 and 2018, something practically unheard of in any sector during a peace-time economy. Despite governments and academic researchers alike finding it difficult to keep pace with the rate of change, we are beginning to see essential policy recommendations and publications emerge

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[2] A unicorn company is one valued at >$1billion. At the time of writing, Uber's Market capitalisation following IPO is $89.26billion, and Deliveroo is currently valued at >$5billion.

in this space. The Taylor Review (2017) represents the largest government inquiry into the gig-economy in the UK, whilst seminal works such as Srnicek's (2017) *Platform Capitalism* has provided much of the groundwork for academic literature looking to investigate the phenomenon.

At its most basic, a 'platform' can refer to an assemblage of hardwares and softwares upon which technological systems are built; for example, an algorithmic system that distributes jobs to a group of workers. A 'platform company' can refer to the organisation that builds, manages, and markets these systems, such as Deliveroo. 'Platformisation' refers to the trend of growth in platform companies (both in terms of frequency and/or magnitude) that means more of our economic and social lives are undertaken within and across platforms. For example, a person may now be able to order a meal to be delivered by Deliveroo on their smartphones, whilst watching a film on Netflix and speaking to their friends via Facebook, Instagram or WhatsApp. Taken together these create a 'platform economy' that may be precipitating changes in capitalism itself, moving us into an era of 'platform capitalism'.

The growth of platform capitalism and the platform economy is a broad phenomenon that impacts multiple sectors of socio-economic life. According to Srnicek (2017: 49), there are five dominant categories of platform: "advertising" platforms, "cloud" platforms, "industrial" platforms, "product" platforms and "lean" platforms. This research focuses specifically on one type of 'lean' platform, the labour platform. Lean labour platforms are commonly referred to as 'gig' platforms or 'gig companies' and taken together they comprise the 'gig economy'. 'Gig' relates to how workers go 'from gig to gig' as self-employed independent contractors. This covers a broad range of services from ride hail (e.g. Uber or Ola), cleaning (e.g. Handy), dog walking (e.g. Rover) to personal care (e.g. Care.com). More specifically still, this thesis focuses on gig economy firms who specialise in food delivery in London. To be clear, whilst all gig economy firms are platforms, not all platforms are gig economy firms. As such, reference to 'the platforms' in this thesis serves as a shorthand for the specific gig economy platform companies under investigation (Mercury Meals and Iris Delivery). When referring to 'gig work' I am discussing *doing* gig work in this

context. When referring to the 'gig economy' I am referring to the broader ecosystem of lean labour platforms that taken together comprise the 'gig economy'.

The gig economy involves workers contracting to a platform to provide services in exchange for payment, and consumers paying the platform in exchange for goods or services provided by the labour force. As such, gig economy platform companies position themselves at the centre of multi-sided marketplaces, connecting workers and consumers and taking a considerable 'rent' or 'commission' for doing so. 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 transaction (i.e., the commission it takes from the worker plus the fee it charges the customer) minus the piece-rate labor costs associated with each order and other expenses. If we are to believe the narratives of the platform organisations, this is all that they do, with Uber, Deliveroo and a multitude of others claiming in court that they are 'technology companies' with very little agency in the way in which the work is conducted (see for example UK Employment Tribunals Aslam, Farrar & Others v Uber, 2016; and CAC, IWGB v Deliveroo, 2017). This thesis takes an opposing stance, in-line with other empirically grounded academic work on the phenomenon (for example, Richardson and Bissell, 2019). Whilst platforms undoubtedly do connect these two groups of people, in so doing the technological architectures used to augment the markets are also harnessed to exert control over the way in which that labour is undertaken, and extract data to drive future efficiencies from every interaction.

Early theorisations of the 'platform' positioned groups of technologies as the hardwares and softwares upon which wider ecosystems could be built (see for example, Gillespie, 2010; Montfort & Bogost, 2009; and van Djick, 2013). Whilst this holds true to some extent for gig-economy platforms, literatures focused on the phenomenon have moved towards synthesising this with the infrastructural approach traditionally preferred by Science and Technologies Studies (STS) scholars (Plantin *et al.*, 2018). For example, Srnicek (2017) usefully places the platform economy within broader contexts of technological and financial infrastructure, in

addition to historicising its development within western capitalist economies. Central to this development is the role of venture capital, which gives the backing of huge amounts of private funds to these emergent firms.

This venture capital is a critical component of the platform economy's development thus far. Through massive investment rounds, companies have been able to build financial capabilities often far outweighing their current market strength, position, or relative possibilities of achieving a profit to return to shareholders. As such, investors are drawn to the promise of future profits, driven by the reduction of labour costs through improved technological capabilities, and the benefits of occupying a monopoly position in the market once all competition has been eroded away. Again, this is not a new phenomenon, as venture capital is intimately tied to the development of technology and computing in the second half of the twentieth century, with key developments such as the semi-conductor only made possible through private venture funding (see Markhoff, 2006; Zook, 2005).

Returning specifically to the platform economy, this has manifested as predatory behaviour geared toward the monopolistic tendencies these funds require, and as such, platforms have become the conduits of financial investment capital post 2008 (Langley & Leyshon, 2017; Sadowski, 2020; Srnicek, 2017; van Doorn & Badger, 2020). By drawing on large pools of financial capital, platform firms are able to expand into new markets and lower the cost to the consumer whilst offering initially high prices to workers (taking a net loss) in order to suffocate the competition and become one of very few companies in an oligopoly market. Exemplary is the death of local private hire taxi-firms as venture backed giants such as Uber, Lyft, Ola, and Bolt (Taxify) fight to claim the majority market share (Woodcock & Graham, 2019). This is also observable in other industries, such as housework and cleaning (with the rise of platforms such as Handy and Task Rabbit) and in the food-delivery sector with the growth of Deliveroo, UberEats, JustEat and Stuart all eroding the traditional model of in-house delivery work being done at the individual restaurant level.

The scale at which these platforms operate is further generative of network effects being achieved throughout their markets. This applies in the traditional sense of building a customer base (see for example, Shapiro and Varian, 1998), as well as in relation to the way in which these networks achieve a scale necessary for the aggregation of data to be analysed and worked-on by the machine learning algorithms that underpin the platforms' operation (Rosenblat, 2019). As such, by capturing data on workers and customers alike, platforms can not only begin better calibrating themselves to the market but also use data derived analyses to drive down the cost of labour and to build efficiencies. This form of speculative data capitalism can be best witnessed in Uber (2019) and Lyft's (2019) IPO filings in which they both outline future plans for the company based on profiting from the data they gather and developments that improve their machine learning algorithms from its subsequent analysis.

In the case of Deliveroo, for example, front-end applications for customers, restaurants and riders are a site of data creation and capture, whilst back-end systems sort, store and process this data to arrive at future innovations to improve the efficiency of their business systems and labour process. These interfaces have various capabilities and affordances based on what the platform wants the behaviour of each group to consist of and, in turn, each collects variegated data sets from each user type. These data sets are then brought together and algorithmically analysed by Deliveroo's central algorithm which calculates multiple data points to assign each order, and is continually working to improve itself and, in theory at least, the experience of riders working on the platform. It is responsible for not only assigning orders but also for administering and analysing the broader labour process of the work. By placing themselves at the intersection of these processes and promising a certain standard or time frame for the labour to be completed (in this case, in 34 minutes from the time the order is placed) platform companies necessarily implant themselves into the labour process. Furthermore, their data highlight the times of most and least demand, and through their apps they can nudge workers to come to work or spend longer logged on. Accordingly, then, they are not simply the synapse between customer and worker they would have us believe. Rather, in the quest to

secure high quality work, done within an orderly and marketable timeframe, they discipline the labour that undertakes that work. As such workers are manipulated to carry-out 'gigs' in the way that suits the platform best, undermining the assertions that they are 'self-employed independent contractors' with total autonomy over their labour.

It is from within this power asymmetry – in which the contractual construction of workers bears little resemblance to the day-to-day realities of their work – that moves toward worker resistance are emerging. Waves of industrial action in the platform economy are taking place, from the co-ordinated Uber and Lyft strikes in March 2019, set on destabilising the companies' IPOs, all the way back to the wild-cat action by a group of Brazilian Deliveroo motorcyclists in London 2016 unsatisfied with proposed changes to their working conditions.

With these contestations in mind, this thesis wrestles with how the asymmetrical relations between platforms and workers play out in the lexis chosen to describe them. This thesis refers to those contracted to work for the platforms as 'workers' or 'riders' throughout. This is for three key reasons. Firstly, this is how gig couriers refer to themselves. Since I am narrating their stories alongside my own I do so in their terms. Secondly, as a consequence of its geographical context, the UK has specific legislation regarding the 'worker' which is defined concretely as someone who is to all intents and purposes self-employed (enjoying the freedom and flexibility that grants) but is limited in their ability to expand their business beyond the confines of their primary contractor, and as such, the contractor has a responsibility to them to provide some of the basic benefits employees enjoy, such as holiday and sick pay (Employment Rights Act (United Kingdom Legislation, 1996)). Finally, it is because this is the nomenclature that organised labour uses to refer to itself in making clear the contractual and informational asymmetries inherent to the platform economy. Hence, if the term 'independent contractor' is used, it is only in reference to the way in which workers are defined by the platform. Furthermore, this thesis refers explicitly to the 'platform economy' and its promotion of 'gig work'. This is an intentional choice and move away from the literatures surrounding the 'sharing'

economies emergent in some arenas of academic and public discourse (Crouch, 2019). The stark reality of these platforms is that there is indeed no sharing going on at all. In fact, workers enter into contractual agreements and are paid on a piece rate for the labour they supply. Whilst workers do make use of their personal existing assets, such as pushbikes, motorcycles, and cars, this is not done in the spirit of sharing but of earning enough money to pay the rent and feed themselves and their families. Workers use these machines as tools of work, devaluing their already low-value assets in the process through the wear and tear they accumulate through extensive use, with no recompense coming from platform or customer.

1.3 Food Delivery Platforms in London

This thesis focuses specifically on food delivery platforms in London. Whilst there are references to the geographical specificities of other cities – in the case of participants who were interviewed as part of the project – the bulk of the thesis focuses on the London as the locality in which autoethnographic work was undertaken and the biggest market in the UK for platforms looking for success. Food delivery represents a unique part of the broader platform economy with its own forms of work and industry specificities, which are nuanced by the socio-cultural position London occupies in addition to its unique urban geographies. For example, London's flat topographies, and labyrinthine streets, punctuated by a range of eateries, complicate and simplify delivery work in myriad ways. Whilst riders often work from preferred zones (building up knowledge that they can then use to become more efficient in the delivery of their labour), they are sometimes driven to other unknown areas in search of higher fees, a challenging task in cities not laid out by grid.

In London the primary players in the food delivery market are Deliveroo (a native UK firm, and one of the first to market), Uber Eats (the food delivery arm of the platform giant Uber), Stuart (who deliver food among other items), and Just Eat (the largest player in the UK). Whilst other food delivery systems and bicycle messengering companies operate in London, they are significantly different to the

phenomenon of platform work explored here, exhibiting far greater personal relationships and less algorithmic intervention into processes of labour management.

Whilst there are some shared aspects with the broader gig-economy, such as the positioning of the platform as a technological intermediary that facilitates the connection of customers and people supplying work (see Srnicek, 2017) and the construction of workers as independent contractors (Crouch, 2019), the food delivery sector diverges in critical ways. Firstly, workers are positioned as part of a three-sided marketplace (including restaurants as well as customers and riders), which is different to the two sides (customer-worker) of ride-hail or cleaning platforms. Secondly, food delivery operates at highly pronounced peak times. Whilst other sectors such as ride-hail do experience peaks and troughs (see Rosenblat, 2019; Rosenblat & Stark, 2016; Gandini, 2018) this is further exaggerated in the realm of food delivery. Outside of peak times, workers can expect to go hours without a single job, whilst during peak hours it can feel as though there are too few workers to fulfil demand. This highly elastic supply and demand limits earning opportunities. Critically, the food being delivered plays an active role in the undertaking of labour. Food can be, at times, a particularly volatile material to transport with spillages, leakages and other complications that overcome the (often less than careful) packaging by restaurants.

Finally, collective association and organised labour in the food delivery sector in London is split into two camps. Firstly, are the rider groups coming together on social media and instant messaging applications built for the 'water-cooler talk' or more specific articulations critical of the platforms for whom they work. These take the pulse of how the workforce feels and are often a hotbed of debate and discontent. Secondly, trade-unions have formalised the organisation of labour in the gig-economy, with two primary unions leading the fight for worker resistance in the UK. First is the Independent Workers' Union of Great Britain (IWGB) which initially recruited members in the fall out from early waves of strikes in 2016. They are not affiliated to the TUC (Trades Union Congress) or to any political party. Second, there

is the International Workers of the World (IWW), an anarcho-syndicalist union founded on worker struggle as part of a broader political project to undermine the forces of state and capital and build toward an alternative political future. The IWW operates a courier network system, with localised networks in cities up and down the UK, as opposed to the IWGB's 'branch' system where gig-economy food workers fall under the 'couriers and logistics' branch which is also responsible for organising more traditional forms of logistics work.

1.4 Research Objectives

Through its focus on platform mediated food delivery work in London, this thesis sets out to address five research objectives regarding the nature of contemporary platform economy 'gig work'. They are as follows:

1. To develop understandings of the labour process of gig economy cycle delivery and how riders come to understand this labour process within a complicated (techno-urban) organisational space so as to exert agency within it.

At the start of my doctoral research there was an emergent discourse on labour process and the gig economy; however most academic attention had been spent on other sectors such as ride hail (Rosenblat & Stark, 2016). This thesis seeks to address the gap in the literature relating to bike delivery work by documenting the labour process. It then looks to extend analysis beyond a surface level 'mapping' or rendering of the labour process through a sociomaterial and rhythmanalytical lens to create richer understandings of how the labour process plays out in practice, how workers find agency within (or outside of) it, and how taken together this creates a unique organisational space.

2. To investigate the nature of skilled work in the gig economy in regards to both skill development and deployment at work, and how this relates to digital and

urban practices and processes as they become enshrined in the performance of work.

This research investigates the nature of skill in the gig economy. Whilst it is often assumed that the intervention of digital technologies leads to the deskilling of labour (Benanav, 2020; Mueller, 2021) it was readily apparent that gig economy couriers were able to navigate complex urban and digital worlds at speed. This implies skilled interaction with the platforms they work for and the cities they work in. This research objective relates directly to the discovery of those skills and their development and deployment in practice.

3. To forge understandings of the sites, spaces, and practices of resistance to gig economy cycle delivery work and how they have developed over time.

This thesis attempts to uncover both the individual modes of resistance riders undertake in their day-to-day work practice and the forms of organised labour emergent in the platform economy. It discusses the core 'sites' in which resistance takes place, examines the specific knowledges of workers in orchestrating both organised resistance and other forms of refusal, and thus determines how resistance can be developed in a workplace defined by a surplus supply of labour and a limited supply of work.

4. To build a conceptual framework capable of engaging with the complexity and plurality of gig economy work and the spaces in which it takes place.

This objective emerges from the PhD's interdisciplinary position between Geography and Organisational Studies. It is clear that there is fertile ground for synthesis between these disciplines – especially in light of the ongoing spatial turn in Organisation Studies and a revitalisation of labour geographies. In chapter 3 I begin to build this conceptual work, elaborating on my own approach to theory and empirics. It develops an approach to gig economy work that brings sociomateriality (Orlikowski & Scott, 2008), theories of the interface envelope (Ash, 2016), and

rhythmanalysis (Lefebvre, 2004 [1992]) together. This forms the prism through which I came to see and understand gig work, refracting it through these conceptual accounts.

5. To tailor a set of methodological approaches that can ethically investigate the working lives of riders in the gig economy.

Researching in the gig economy poses a series of difficult ethical and methodological challenges that must be overcome for the research to be a success. This research aim thus addresses how researchers may be able to begin investigating technologically enabled gig work. Research needs to take account of the plurality of worker experience and diversity among the bike delivery sector of the gig economy. Additionally, it needs to reflect the various intersectional ways in which precarity is experienced in the gig economy. Also apparent are the difficulties presented by investigating platform companies that wield their financial capital in bringing about a positive PR climate, while seeking to provide an authentic experience of this labour. The challenge that this objective poses, then, is to find an ethical way to do gig economy research. My approach to answering this is explored in Chapter 4.

1.5 Thesis Chapter Outline

This thesis is divided into eight principal chapters, as well as three short 'interludes' that introduce background information on the platforms, riders and Union studied. The motives and background of the thesis have been outlined here in Chapter 1. Chapter 2 advances the first of two contextual reviews that set the scene for the empirical work and analysis to follow. The first contextual chapter is a topical review, focusing on the ways in which the phenomenon of gig work has been explored in academic discourse. The very nature of its fast-moving organisational structure, underpinned by contingent labour forces and volatile venture capital funding (tied to share valuations and potential returns) has made this a difficult target for the traditionally slow academic environment to grasp. This chapter pulls together the emergent literatures and surveys understandings of the field thus far,

in addition to acknowledging work on non-platformised forms of 'traditional' bike messenger work. The second review chapter (Chapter 3) focuses on the conceptual underpinnings of the thesis to follow; in other words, on the approach taken to the topic. This encompasses a working together of three bodies of theory - Lefebvre's Rhythmanalysis (2004); Sociomateriality (Orlikowski & Scott, 2008); and Ash's (2016) theorising of the interface – to provide a conceptual framework for the analysis of digitally enabled platform work. Whilst each theoretical frame adds its own unique contribution to the study, one of this thesis' novel contributions is to explore the ways in which their sum is greater than their parts.

Chapter 4 elaborates the methodological approaches that I have developed and deployed in the undertaking of fieldwork. This considers each of the three strands of methodological approach deployed throughout (working in a covert autoethnography of two gig economy platforms, overt ethnographic research of the trade-union responsible for organising its workers, and semi-structured interviews with various participants). This elaboration includes further information on the ethnographic research undertaken as a rider and as an IWGB union volunteer worker, and the interviews undertaken with other riders. The chapter includes a critical account of the ethical/legal challenges covert research of this type faces, as well as promoting approaches to ethics that position it not as a hurdle to be surmounted prior to entry into the field, but rather as an engaged process in which the researcher continually works to ensure the approach is ethical and protects research participants, especially those that are most vulnerable. Discussion of these methodologies as partial and situated emerges from reflexive considerations on the research process and the researcher's own positionality. Chapter 4 also reflects on how the three conceptual strands relate to research practice, considering how methodological approaches to rhythmanalysis have informed research design. Additionally, it turns attention towards the way sociomateriality plays out with the technologies and devices utilised in the research process itself, including the multitude of apps, recording equipment and other hardware and software engaged in the research.

Next comes the first of three interludes that provide expositionary detail of the main protagonists of this research (these interludes can either all be read together, or readers can 'meet' each of the actors they introduce as the narrative unfolds). Interlude 1, 'Meet the Platform', introduces 'Mercury Meals' and 'Iris Delivery', profiling their business functions and the rationale for the choice of their pseudonyms.

Chapter 5 investigates the labour process of gig economy work in detail. This begins with a 'top down' mapping of the labour process that identifies its key moments, before considering the riders' role in the creation of data as part of their work. In this mapping, the chapter argues that workers are situated in a position of 'dual value creation'. Whilst their labour in the physical realm of food delivery is exploited, their data labour – undertaken through the surveillance and capture systems of the application and the datafied elements of the labour process – is expropriated by the platform for valuable insights that are later turned into 'efficiencies' that produce ever more precarity for workers. The analysis then turns to how this labour process is interpreted 'from below', through considering both the way riders seek to self-discipline to make their own labour process more efficient, and how they 'perform' a particular type of efficiency once all gains are met in an effort to harness greater agency at work.

Interlude 2, 'Meet the Rider', outlines the worker as an assemblage of body and bike, and sketches-out the process of 'becoming one' with the machine through courier work. It also provides details on how work conditions the body and bike in specific ways and precipitate various forms of bodily and technical maintenance that make riders fit for work.

Chapter 6 considers how riders develop and apply skills at work. At the outset, workers' skills are set in context of the 'algorhythmic' nature of their experience, as they labour at the intersection of technical tools and urban systems to develop a sense of agency at work. Then the chapter progresses to consider the skilled ways in which workers 'micro-' and 'macro-route' their way around the city, before

examining the experience of 'flow' as an optimal state of engaged skilful activity. Finally, the improvisational ability of riders to apply their corpus of accumulated knowledges of the city, the platform, and the riding-self to augment a flowing experience of work is considered in light of comparisons to improvisational jazz musicians, rather than the typical conceptual simile of the 'punk' messenger.

Interlude 3, 'Meet the Union', introduces the Independent Workers of Great Britain (IWGB), with particular attention paid to their approach as a 'fighting union', and their histories of organising precarious migrant labour in various gig economy and non-gig economy sectors.

This serves as crucial context for Chapter 7, that focuses explicitly on how workers resist in the platform economy. The analysis breaks resistance into four key sites – the app, the street, the court, and the polity – to explore the resistance practices that take place in each: gamification, collective resistance, court battles and policy interventions, respectively. It shows that in some instances riders resist *through* their work, as well as through strikes and labour refusal, and through the non-workplace battlegrounds of courtrooms and policy debates. In conclusion, the chapter turns to the effective strategies of combining approaches from various sites to bring about change in gig-working conditions.

Chapter 8 concludes the thesis. It draws together the threads from each chapter to first outline core novel contributions to knowledge made by the research. It then reflects on the research objectives and how they have been addressed. This is followed by highlighting the significance of meta-rhythms of venture finance in the platform economy, before giving way to a discussion of the limitations of the research and avenues for future work.

Chapter 2 – CONTEXTUALISING WORK AT THE INTERFACE

"The main business of humanity is to do a good job of being human beings," said Paul, "not to serve as appendages to machines, institutions, and systems." Kurt Vonnegut, *Player Piano*

2.1 Introduction

The gig economy finds itself at the intersection of academic, governmental, journalistic and corporate interests in the future of work. Its critics claim it is merely a return to historical modes of day labouring, with the app now replacing waiting 'on the stones' at the dock gates as workers digitally raise their hands in readiness for work by logging on (Crouch, 2019). Meanwhile, gig companies themselves, in addition to the massive consultancy firms driving organisational change and transition towards 'digital work futures' herald the gig-economy as a silver bullet; providing mass 'employment' *and* an investment vehicle for the stagnant cash left languishing with low interest rates since 2008[3]. The reality is, for now, probably somewhere in-between these narratives. Whilst numbers are hard to ascertain it is estimated that approximately 10% of all UK and EU workers earn at least part of their income in the gig economy (Partington, 2019; Huws et al, 2017). This chapter reviews existing literatures relating to the gig economy. It begins in relatively abstract terms, considering the rise of the 'platform' as a shift in contemporary capitalism, in addition to the platformisation of our cities and social worlds. Consideration then turns to the gig economy itself, including the lived experiences of gig work as embodied practice and modes of resistance that have arisen in response to it. Finally,

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[3] The IMF repeatedly stress the latent, frustrated liquidity of post-crash economies. Traditionally finding its expression in property and other investments (see Harvey's, 1981, spatial fix) venture capital investment into tech have grown in significance to fill the gap.

literature on traditional bike messenger work will be folded into the analysis to contextualise the gig-economy.

2.2 Where does the gig economy come from? Platform Capitalism

Recent trends emerging from the conflux of industry reports (Maitra [Deloitte], n.d.), government policy (Field & Forsey, 2018; Taylor, 2017), management/self-help guides (Mulcahy, 2018) the media (Mason, 2018) and academic literature (Adams-Prassl, 2018) highlight the ongoing platformisation of our lives (Leszczynski, 2020; Parker, van Alstyne, and Choudary, 2016; Reillier and Reillier, 2017; and Scholz, 2016; 2017; van Dijck, Poell, and DeWaal, 2018). In reviewing these studies, Poell et al (2019: 5-6) find a principal objective of platform companies to be the intervention into "infrastructures, economic processes, and governmental frameworks… in different economic sectors and spheres of life" to bring about a "reorganisation of cultural practices and imaginaries around platforms". Central to this ongoing wave of platformisation, is the realisation of the 'platform' as a novel form of organisational and technical infrastructure that is infiltrating previously non-platformised sectors.

Gillespie's (2010; 2017: n.p.) etymological study constructs 'platforms' as metaphorical devices, serving to clarify concepts to different stakeholders made applicable in a range of contexts. Here, firms "calling themselves platforms promised users an open playing field for free and unencumbered participation, promised advertisers a wide space in which to link their products to popular content, and promised regulators that they were a fair and impartial conduit for user activity." The conceptual malleability and lack of specific features renders it applicable and generalisable to various settings, meanwhile creating a concept that is 'slippery' and difficult to grasp in a meaningful way. However, it is crucial academics do not fall for the linguistic smoke and mirrors the term conjures. Poell et al (2019: 3) cut through the metaphor to argue platforms serve as both markets and interfaces, assembled through "(re)programmable digital infrastructures that facilitate and shape

personalised interactions… organised through the systematic collection, algorithmic processing, monetisation, and circulation of data." In other words, platforms engineer and operate spaces for interaction, capture data on the interactions that take place there, and then process and monetise the data produced. The dual status of technical architecture and market is critical, marking a break from earlier forms of capitalist production - wherein a commodity's value was realised at an external market - to a new form where production and the market are combined.

Srnicek (2017: 49) identifies a typology of five dominant platform types: 'advertising' (e.g. Google), 'cloud' (e.g. Amazon Web Services), 'industrial' (e.g. General Electric), 'product' (e.g. Spotify) and 'lean' platforms (e.g. Uber), that leave practically no economic stone unturned. This thesis focuses exclusively on lean platforms (the part of the typology where gig-economy platforms reside). However, to understand the origin and the continuing trajectories of the gig economy we need to reflect more broadly on this trend as a whole.

For Srnicek (2017: 9), *Platform Capitalism* occurs within broader meta-shifts in capitalism's development, connecting the dots between "the 1970s downturn; the boom and bust of the 1990s; and the response to the 2008 crisis." This presents platform capitalism as the natural (if not inevitable) successor in the onward march of digitally enabled 'free-market' societies by acknowledging that platforms did not emerge ahistorically, nor do they exist in a vacuum. 'Platform Capitalism' was originally coined by Lobo (2014) as a counterweight to the pervading deployment of metaphorical 'sharing' narratives that platform companies used to euphemistically disguise the *work* taking place on them. This recognises the generation of surplus value and the profit motive of platform owners, rather than the seemingly benign production of a marketplace for altruistic 'sharing'. Langley & Leyshon (2017: 13) later elaborate 'platform capitalism' to define a "particular coming together of socio-technical and business practices" that have catalysed a shift in both "*practices of intermediation* and *process of capitalisation*" (emphasis original). This asserts that platform capitalism indicates that the very nature of contemporary capitalism changing because of innovations in digital technologies *and* the ways in which value

is generated through them[4]. Thus, platform companies are a key agent of change in this shift.

Platform companies often position themselves as 'disruptors' to traditional firms. However, Vallas and Schor (2020) argue this is another strategically metaphorical turn of phrase. They posit this 'disruption' in fact represents a Schumpeterian gale of creative destruction, within a "process of industrial mutation that continuously revolutionises the economic structure from within, incessantly destroying the old one, incessantly creating a new one" (Schumpeter (1994 [1942]: 82-83) - as platformised logics are applied to existing industry in the usurpation, creation, maintenance, and mediation of new multi-sided markets.

However, it is Harvey's (1990a) reading of creative destruction that bridges the gap between crisis capitalism (typified by a cycle of innovation-boom-bust) and platform capitalism (outlined by Srnicek, 2017). For Harvey (1990a: 105), it is "the struggle to maintain profitability [that] sends capitalists racing off to explore all kinds of other possibilities" that has precipitated the paradigmatic shifts essential to the emergence of the platform. For example, the developments that occurred along the fault lines of the 1973 crash were fundamental in Harvey's (ibid.: 147) movement from modernity to post modernity (and industrialism to post-industrialism) as: "flexibility with respect to labour processes, labour markets, products, and patterns of consumption…" was propelled by "…the emergence of entirely new sectors of production, new ways of providing financial services, new markets, and, above all, greatly intensified rates of commercial, technological, and organisational innovation." Extending this narrative to today, continued flexibilization is providing new sectors of platformised production, financial services, and markets.

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[4] Muldoon (2020: 5) notes the shift in wealth and power towards digital technology firms; best represented by the turnover in the world's largest corporations. In 1980, these were all involved in extraction or heavy industry - Exxon Mobil, General Motors, Mobil, Ford Motor and Texaco. By 2019, the landscape has changed. The top 5 companies are now: Apple, Microsoft, Amazon, Alphabet and Facebook. This change is facilitated by "the rise of digital platforms as a model capable of generating enormous revenue and controlling the interactions and data of its users."

But whilst innovation is booming, there is an ongoing crisis of profitability. Even platform poster-boy Uber recorded $5.2billion losses in a single quarter (Hawkins, 2019). Uber's (2019: 28) Initial Public Offering paperwork gives an insight, stating they "may not be able to achieve or maintain profitability in the near term or at all", raising questions (and damaging investor confidence) about absurd market valuations platform companies that may never provide a return-on-investment (ROI) (Kruppa, 2019). However, from a finance studies point of view, Langley & Leyshon (2017: 24) articulate the shareholder and investment mechanics at the heart of it all:

"The platform business model performs the temporal structure of venture capital funds. Funds are typically 10-year fixed-term independent partnerships… For a fund to achieve aggregate returns, the equity stakes in the start-ups that form the portfolio must be cashed-out within its 10-year term… For liquidity events to take place – either via an IPO, acquisition, or sale of shares to another investor – start-ups are typically expected to have begun to demonstrate their capacity for revenue growth and thus cost-recovery to investors… [as such] venture capital funds are performed by the platform business model precisely because it elaborates upon the streams of revenue that can be realised by platforms which rapidly up-scale."

Here, platforms simultaneously offer an alternative organisational form whilst extending the possibilities for the continued financialisation of our economies. Venture Capital (VC) funds become knowledge brokers in their assessment of what is 'worth' funding and what is not[5] (Markhoff, 2006; Zook, 2005) so gig economy platforms simply offer the opportunity for continued financialisation of previously untapped markets. These Silicon Valley logics enable tiny start-ups to pitch their idea to large funds to develop and compete for sectoral dominance. However, not everyone can be a winner.

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[5] This is nothing new, as VCs have existed in symbiosis with tech and military research to co-ordinate power since the 1960s onwards (Zook, 2005; Markhoff, 2005).

Given the high failure rate, Srnicek (2017) asserts that lean platforms establish themselves with limited fixed capital to reduce risk and collateral should the administrators be called in. This explains how Uber can be the world's largest taxi company yet own no cars and employ no drivers, limiting risk on their balance sheets in the form of pensions, tax liabilities and redundancy packages. For comparison, Uber and FedEx have a relatively similar market capitalisation and are both broadly located within global logistics. FedEx has 245,000 employees; Uber has 26,500. The disparity in directly employed staff (and their associated costs and risks) is clear. All these things make platform companies more attractive to venture capitalists and the investor class. Thus, a direct line can be drawn; originating in the need for investors to find new avenues for growth post 2008 and ending in the development of business models and technologies that internalise the desires of VC funders that shape the lived experience of labour as people work precariously without protections.

Langley & Leyshon (2017: 24) continue to elaborate the way VC companies compile investments into a portfolio - essentially spreading or, in some cases, hedging their position:

"The platform business model also performs the portfolio structure of venture capital funds… [operating] a high risk/high reward investment strategy…This is encapsulated in the so-called '2:6:2 rule' governing venture capital funds: two investments will be losses, six will break-even, and only two will realise returns, but these 'home runs' will be of such an order of magnitude that the overall portfolio will generate returns that outperform equity markets over the same period… [this means] platforms target dominance of their own niche market infrastructure, at the expense of others who are therefore destined to 'fail'. Platforms seek to extract rents from their network which are, in essence, monopoly rents."

By generating large aggregate returns on 'home runs', rather than smaller returns on conservative investments, VCs embed platforms with a tendency towards

monopolisation (Liu, 2020). Here, the scalability and adaptability of their 'disruptive' offerings across global markets is key.

This extends trends toward rentier capitalism (Christophers, 2020). Srnicek (2017: 92) finds that whilst platform companies "declare the age of ownership is over…" we need to be clear. "This is not the end of ownership. Pieties about the 'age of access' are just empty rhetoric that obscures the realities of the situation." Here, the metaphorical quality of 'access' acts as a veil, covering-up the ring fencing of data and the monopolistic tendencies of platforms that are looking for future mechanisms to leverage profit from the immense networks they have built. The worry is that as this becomes more pervasive, we will see a world of work where - borrowing from Castells (2010: 215) - "Schumpeter meets Weber in the cyberspace of the network enterprise."

Poell et al. (2019) identify the academy as playing a critical role in critiquing processes of 'platformisation' as it continues to evolve and shape our societies. In their review, they find key trends to be emerging in four disciplines: software studies, business studies, critical political economy, and cultural studies. Respectively, these focus on the: infrastructural boundaries of platforms and their histories and evolution, economic aspects of platformisation, extension and intensification of platform power and governance, and the symbiotic relationship at play as platforms and cultural practices transform one another. Ultimately Poell et al. (2019) argue that none of these perspectives is sufficient alone and that interdisciplinary approaches are required to fully comprehend the impact platform logics are having on our societies. Vallas & Schor's (2020) work to investigate 'what platforms really do' does this, identifying and synthesising four metaphorical platform narratives of "the entrepreneurial incubator, the digital cage, an accelerant of precarity, and the firm as chameleon" to work towards a holistic, multi-disciplinary framework of future study. Van Doorn and Badger (2020) similarly attempt to excavate the linkages between capitalism and platforms in their interdisciplinary study of how VC ecosystems impact the lived experience of work and declining pay. This thesis joins this body of active interdisciplinary research in comprehending the contemporary

platform organisation from the vantage point of labour; using empirical findings alongside various theoretical frameworks introduced in Chapter 3.

2.3 What is the gig economy?

This thesis focuses exclusively on the gig economy. In Srnicek's (2017: 76) taxonomy, these are 'lean' platforms that open-up a space where "users, customers and workers can meet" to coordinate labour supply and demand. In the case of ride-hail, like Uber, this is a two-sided marketplace of customers and drivers. In the food delivery sector, there are three sides to the market - customers, restaurants, and delivery workers. Mercury Meals and Iris Delivery both operate three-sided markets. Srnicek (2017: 76) labels these platforms 'lean' because they own few assets and have minimal fixed capital (such as cars, bikes, or employees). However, the primary asset they do retain are: "software and data analytics." This results in platforms counter-intuitively claiming to be 'technology companies' (Crouch, 2019) rather than taxi or take-away firms. This thesis conceives of the gig-economy as a technologically mediated marketplace in which workers are offered piece rate work via a digital technology such as a mobile application.

However, gig work is not limited to the delivery of people or pizzas. Woodcock & Graham (2019) stress the immense breadth and heterogeneity of the gig economy in their critical introduction to the phenomenon. It now consists not only of the industry's main protagonists such as ride-hail (Uber) and food delivery (Deliveroo), but other services such as cleaning, dog walking, grocery shopping, massage therapy, hair dressing, content creation, sentiment analysis, survey filling, data cleaning, and artificial intelligence training, to name a few. To make sense of this diversity, a broad typology of gig work has emerged that splits the gig-economy into two main forms: "'cloudwork' and 'work-on-demand via app'" (De Stefano, 2015: 471-472). The former refers to "working activities that imply completing a series of tasks through online platforms" whilst the latter implies a form of "work in which the execution of traditional working activities such as transport… is managed through apps by firms that also intervene in setting minimum quality standards of service and in the

selection and management of the workforce" (*ibid.*). For Woodcock & Graham (2019) this represents a split between 'geographically untethered' work, which can in theory be done from anywhere with a working internet connection and 'geographically tethered' work that must take place in a given locale. Whilst this thesis deals exclusively with the latter type, the logics that shaped it were incubated in the former, which are briefly explored below.

Arguably, the first example of the gig-economy is Amazon's crowdwork platform 'Mechanical Turk' (AMT), launched in 2005. Announcing this new platform, Amazon's founder Jeff Bezos remarked:

"You've heard of software as a service… well this is basically humans as a service" (Bezos, in Adams-Prassl, 2018)

It marked a significant departure for Amazon who, having survived the dot.com bubble, were looking for ways to innovate their service offering. It signalled a diversification from the selling of commodities in an online marketplace into the packaging and sale of *work* through an online labour market. The name Mechanical Turk is itself a reference to technology and labour taken from an eighteenth-century chess playing 'automaton' – which was in fact an elaborate hoax, comprising an orientalised cabinetry hiding a small chess grand master. The device wowed audiences as it toured the world playing (and beating) chess players and political figures including Benjamin Franklin and Napoleon. Having observed the 'machine' in 1836, Edgar Allen Poe (2009 [1836]) concluded that it *must* be a hoax; asserting that if it were 'pure machine' it would surely *never* lose – that its fallibility was a sign of its imminent humanity. It is not a coincidence that this fascination coincided with the Late Enlightenment era of mass-industrialisation, with serious concerns articulating around the role of technology in daily working life. Fast forward to AMT's 2005 launch and – real – automaton Deep Blue's 1997 victory over grandmaster Gary Kasparov is already old news. In chess at least the human is not as necessary in the machine anymore. However, what remains in Bezos' tongue in cheek christening of the Mechanical Turk platform is the positioning of human effort as a service, made

accessible and disguised via an online platform; further commodifying labour and hybridising human effort alongside the machinic.

These logics have become embedded in geographically tethered gig work too, although emerging later and slower given their need to operate in, and therefore negotiate, place. As such, it's no coincidence we've seen firms emerge fully in the markets in which they are founded (notably California's Silicon Valley and San Francisco, New York, and London) before spreading rapidly around the world. Whilst the press has been well equipped to deal with their global spread (Bastani, 2016; Butler, 2019; Mason, 2018), governments and the academy have lagged. However, there is now an upsurge in publications regarding the geographically tethered gig economy joining the debate.

Academics identify the basic dynamics of gig work as undertaking digitally distributed, discretely packaged tasks via a platform in exchange for piece-rate pay for the labour provided (Woodcock & Graham, 2019). Evidence from the (longer and more complicated) lived reality of this work is emerging, giving depth to these top-level accounts. Whilst researchers emphasise the cumulative and compounding effects of issues facing gig economy workers, I have attempted here to separate out these strands to create space for their discussion. These are: 'bogus misclassification' of workers as self-employed independent contractors, technologies and architectures of control deployed in the standardisation of the labour process, and the development of machine learning technologies that generate value through 'efficiency' gains that marginalise workers' agency and drive corporate valuations. In turn, these intersect with race, sex, gender, and migration status that are all slowly emerging parts of the literature surrounding the lived experience of gig work.

2.3.1 Bogus Self Employment

Debate regarding the employment status of gig economy workers began in the UK contemporaneously with the commencement of this PhD. On the one hand, riders for Deliveroo were taking to the streets to demand better conditions and

representation, whilst in the Employment Tribunals, Uber Drivers Yaseen Aslam, James Farrar and others were taking the first steps of their successful legal challenges to Uber regarding their misclassification as self-employed, independent contractors (UK Employment Tribunals, 2016)[6]. This emphasised the discrepancy between the contractual and pragmatic experience of work, in addition to a nuance of UK labour law that provides a third category of employment status. In most jurisdictions, employment is split into two primary types, 'employed' or 'self-employed'. In the UK, a middle 'worker' status exists – "Worker Limb B" - of the Employment Rights Act (1996, n.p.). This covers those who are technically self-employed, but provide their services as part of someone else's business:

> "In this Act "worker"… means an individual who has entered into or works under…—
>
> > (a) a contract of employment, or
> >
> > (b) any other contract… whereby the individual undertakes to do or perform personally any work or services for another party to the contract whose status is not by virtue of the contract that of a client or customer of any profession or business undertaking carried on by the individual; and any reference to a worker's contract shall be construed accordingly."

Under this, employers are required to guarantee certain protections beyond those of self-employment such as the minimum wage and statutory paid holiday[7]. This was an essential legal lever to argue misclassification, with the primary emphasis being on whether a workers' labour can be substituted[8] by another person in the fulfilment of tasks. The judge found compelling evidence that this was impossible in

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[6] In 2021, the Supreme Court found in the workers' favour, supporting their claim to worker status.
[7] The full list of additional protections includes at least the national minimum wage; protection from unlawful deduction of wages; statutory minimum paid holiday; statutory minimum rest breaks; a maximum 48 hour working week unless agreed otherwise; protection against unlawful discrimination; protection from whistleblowing; the right to equal treatment if working part time. (See RSA, n.d.)
[8] Substitution involves the commitment to 'personal service' to complete an agreed task. A worker is self-employed if they can substitute someone else's labour for their own (i.e., they are not bound to the personally conduct the labour they are contracted for). A person is employed or a worker in this test if they are unable to do this.

the case of Uber, and similarly, precedent has been found in the cases of Pimlico Plumbers v Smith (Supreme Court, 2018),[9] Dewhurst & Others v City Sprint[10] (Eurofund, 2018) and Nowak v Chandler Bars[11] (UK Employment Tribunals, 2020). Contracts were key pieces of evidence in these hearings, illustrating their significance as relevant legal literatures. However, their silences highlight that to see what gig work is really like, it must be lived.

Elsewhere, academics have engaged with legal interventions into the gig economy through critical commentary (Aloisi, 2016; Dubal; 2017a, 2017b; De Stefano, 2016). There is also a commentary taking place in the legal industry press (Leckey, 2018) as firms vie for position amongst this shifting legal terrain. For firms, chambers, and barristers who support workers, such as Leigh Day, or Old Square Chambers, the struggle is to become the giant slayers of the industry. For those serving the platforms, such as Lewis Silkin the race is on to prove themselves the most adept at defending the interests of the powerful and claim with it, a significant stake of the new business defending these actions will generate.

In the US and elsewhere, this debate is playing out in light of nuanced local labour law contexts. For example, in New York the NY Taxi Drivers Alliance (Legal Services, NYC, 2019) brought a case which successfully found all Uber drivers should become employees. Meanwhile, *California Assembly Bill 5* (State of California Legislature, 2019) became a battleground between regulators and platform companies, as proposition 22 tabled amendments to the bill. In Madrid, a court ruled that riders were wrongfully classified as self-employed and have ordered Deliveroo to employ them with full protections and benefits (Valdivia, 2019). Meanwhile, in the UK and Italy, Deliveroo riders have been found to not be employees, but rather represent self-employed independent contractors (Zamponi, 2018). Whilst this paints a messy picture with regards to employment rights and (mis-)classification, it

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[9] Involving the misclassification of a self-employed plumber, working for Pimlico Plumbers. The court found in favour of Smith, awarding him worker status.
[10] Involving a bike messenger at the firm City Sprint. The court found in favour of Dewhurst in asserting their rights as a worker, rather than self-employed.
[11] Involving a dispute between an exotic dancer and club owner. The court found in favour of Novack in asserting her rights.

highlights the need for sustained attention on labour conditions and how they reinforce or contradict that laid out in legal documents such as contracts and court proceedings in any given geography.

The significance of these decisions on platform bottom lines is best exemplified in Uber's (2019: 28, emphasis added) IPO documentation, highlighting the role of legal challenges in shaping the future of the gig economy:

> "If, as a result of legislation or judicial decisions, we are required to classify Drivers as employees (or as workers or quasi-employees where those statuses exist), we would incur significant additional expenses for compensating Drivers, potentially including expenses associated with the application of wage and hour laws (including minimum wage, overtime, and meal and rest period requirements), employee benefits, social security contributions, taxes, and penalties. F*urther, any such reclassification would require us to fundamentally change our business model, and consequently have an adverse effect on our business and financial condition.*"

Legal scholar Adams-Prassl (2018: 7) asserts that legal manoeuvrability goes to the heart of the doublespeak upon which the gig economy is built as platforms "operate under the mantle of a "sharing economy" [but in fact focus] … on commercial labour intermediation." As academics, it is critical then that we do not take the metaphorical or strategic deployments of language at face value and are instead informed both by first-hand empirical data and the broader debates currently playing out across many sectors and institutions.

2.3.2 Standardisation of Labour

A significant element of this labour intermediation relates to labour standardisation and control of the labour process via technological interfaces. In their workers' inquiry, Waters & Woodcock (2017: n.p.) find that a "notable difference [between gig work and] with other kinds of work is the absence of

supervisors or managers roaming the workplace and surveilling workers directly" however what replaces them is a "conglomeration of managerial techniques…" including "… platform user (customer, restaurant, or rider) feedback, and an algorithmically sorted accumulation of data…" and "real-time 'God's eye-view' of workers currently logged in." This produces "a management perspective that is similar to a real-time strategy videogame – watching the city from directly above, viewing the abstracted "units" as they move around the terrain, and displaying live data flows of various kinds." (*ibid*.: n.p.) It is observations like these that have given rise to the emergent *When your boss is an algorithm* (O'Connor, 2016) narratives that currently circulate platform research (see also Cant, 2019a; Cheng & Foley, 2019; Duggan et al, 2020; & Gandini, 2018). Rosenblat (2019) finds that this algorithmic boss not only defines the terms of payment, but also micro-manages workers in the undertaking of their day-to-day labour.

The desire to understand the lived experience of work and the role platforms have in shaping it has moved scholars to deploy labour process theory (LPT) as a conceptual frame for analysis. For Gandini (2018: 2) "LPT represents a fundamental and currently under-utilised resource to expand our understanding of the role of digital platforms in intermediating the capital-labour relation." Moore & Joyce (2020: 930) similarly build on a LPT of platform work in conceptualising the "platform management model" that seeks to address the hidden abode of surplus value creation in gig-economy firms all making dramatic losses. This extends important Marxist readings of the industrial workplace, spearheaded by key interventions from Braverman (1974) and Burawoy (1979).

Attempts have been made to follow Moore & Joyce (2020) in applying LPT to the gig economy, such as Veen et al.'s (2019) account of the labour process of bicycle delivery. However, Veen et al lack the necessary depth to explore the labour process in detail. For example, they map the discrete stages of the labour process without showcasing any detail on how each stage is done. As such, 'confirming acceptance' of a job is given the same weight in the labour process as 'commuting' – i.e. cycling across the city and negotiating all of the complexities that come with it. Analysis at

this level only seems to thin-out the inherently thick, rich details of the work, and in the process, silences all of the skilled labour deployed as riders move through the city. More detailed discussions of LPT in the gig economy by Herr (2021) and Perrig (2021) begin to scratch beneath this surface level analysis to uncover richer details about the work that become bound-up in the manufacturing of consent in the gig economy. This thesis continues this trend, synthesising LPT with sociomaterial analysis to place the materialities and distributed agencies in gig work centre stage, extending interventions I have already made elsewhere in relation to the labour process of gig work (Badger, 2021; van Doorn & Badger, 2020).

Rosenblat & Stark (2016) find that a key driver in enforcing the labour process is the engineering of informational asymmetries into the work that gradually unwind as progress is made through a task. Here, a job is offered without all the information necessary for its completion. A worker will first be given a pick-up address. Once they arrive to pick-up the order number is released. Only once they notify the platform that they have the order is the final delivery address released. Each stage in the labour process is essentially a checkpoint through which workers must pass to progress through the job at hand. Refusal to engage means the job is terminated and payment is not made. Veen et al. (2020: 398) find these "deliberately manufactured information asymmetries represented a distinct control mechanism, as the decision to withhold information rests with management and materially influenced the labour process." In other words, the platform-worker relationship is uneven, as platforms wield information asymmetries to administer control throughout the labour process.

This is the only way companies like Deliveroo (n.d. a) can promise customers that a meal will be delivered within an average of 34 minutes. Consequently, this thesis makes an intentional move away from the discourse of 'sharing' that populated early corporate and academic accounts of gig work (Cannon & Summers, 2014) in light of the distinct reality that nothing is actually being shared. Instead, I side with those who conceive of gig work as labour, wherein workers supply the use of their own assets to undertake work in exchange for financial remuneration (van Doorn, 2017; Mason, 2018; Woodcock & Graham, 2019).

These asymmetries lead us to consider the broader role of technology in controlling gig work. Chen (2017) envisions these technical infrastructures designed and deployed by gig economy firms as a "black-box". According to Pasquale (2015), the black box is a system that can be viewed in terms of its inputs and outputs, invoking the black-box communication devices used as flight recorders whose internal workings are unknown. However, Moore & Joyce (2020) critique the position that platforms reside in a black box as technologically deterministic and therefore not going far enough to expose the realities of the labour-capital dynamic. By citing the ways workers engage with workplace technologies in acts of "innovative collective worker organization" (ibid.: 934-935) they highlight how platform technologies are perceived and interpreted.

2.3.3 Value, Efficiencies and Machine Learning Technology

Richardson (2020: 1) reflects on her autoethnographic experiences of gig-work to place platformised technological infrastructures in context with broader processes of 'market-agencements' (borrowed from Callon, 2016). This perspective proposes that "the goods of the delivered meal are contingently calculated as a flexible arrangement of riders, restaurants and customers whereby these actors have differing degrees of choice concerning their participation". By widening her scope, she sees the role of technologies as active agents in an otherwise far more complicated labour process, delivering a greater deal of agency to workers in the process (in turn, resonating with sociomaterial literatures outlined above).

Research must critically nuance the technological determinism of earlier accounts. van Doorn & Badger (2020: 2) attempt to do so by proposing that the digital technologies deployed by platform companies become the site of "dual value production". Here workers are simultaneously exploited for their delivery labour, whilst the data they produce is expropriated at the point of production (i.e. the technical surveillance of the labour process generates data which platforms are then

able to analyse and parse through machine learning technologies for future efficiencies and profitability). What makes it worse, is that:

"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" (van Doorn & Badger, 2020: 7).

This stance positions the "real" hidden abode of value creation as concerning data labour and value production, enforced as riders navigate asymmetrical power and information relations. By following the discussions and literatures surrounding their investments, in-addition to day-to-day operations of service delivery, platforms locate a source of value in the speculative data assets compiled through the aforementioned surveillance (or 'god's eye view'). Here, every interaction made on any side of the marketplace is generative of data that is stored and parsed for insights to optimise their systems. For example, Uber (2019: 155-156) recently stated in their IPO filings that:

"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… [This] powers hundreds of models behind our data-driven services across our offerings"

This is supplemented with efforts "to achieve competitive advantages by creating data-driven cost efficiencies, cross-industry synergies, and new markets" which pave the way toward future profitability and return on investment (van Doorn & Badger, 2020: 3). In this sense, platforms are speculatively building huge data infrastructures to train their algorithmic tools in the hope of being able "to convert data into money" (Sadowski, 2020: 572) by realising efficiencies that will drive operating costs down. Looking at any of the balance sheets of gig-economy firms, it

is clear across the board that bottom line numbers are not healthy (Deliveroo, 2021). Given the lack of financial clarity in the gig economy, future research will need to effectively translate between the financial world of the stock market, the lived experiences of the worker, and the academy.

2.3.4 Embodied Labour

This thesis extends an emergent field of work of considering the lived bodily experiences of the worker as central to understandings of the platform economy (Bissell, 2022; Newlands, 2021; Richardson, 2020). By re-inserting the worker's body into the debate outlined above it sharpens focus on the role of the bodily skills, affective labour and social reproduction upon which the viability of the platform economy relies.

Marxism-feminsim's rich intellectual history offers platform scholars a lens through which to analyse the labouring body (and by extension, the lived experience of work) under platform capitalism. Critically, it provides the conceptual and lexical tools to cut through more traditionally masculinist understandings of what 'work' really is to look beyond "the merely 'productive' labor that, in Marx, creates surplus value congealed in commodities that, in being sold, directly contribute to capital valorization" (Jaffe 2020: 5). Following Hardt (1999: 90) the postmodernisation of our economies has "positioned affective labor in a role that is not only directly productive of capital but at the very pinnacle of the hierarchy of laboring forms" through what Smith (1987: 81) terms labouring in "the bodily mode" (see also Hochschild, 1983; Moore, 2018b; McDowell, 2009). This broader understanding of what 'creates value' is pivotal undermining the definitional promiscuity platforms engage in via their attempts to disguise the commodity form they produce that often locates the production of value in data and computational instruments, rather than in the labouring bodies of gig workers; something that is often reflected in the often held proclamation 'we are technology firms, not food delivery/ride hail/domestic services

firms' that support attempts to justify their bogus misclassification of workers as self-employed (Cherry & Aloisi, 2016).

Investigating how the body is enrolled into this data production is essential in understanding the 'hidden abode' of value production in the gig economy. For Grosz (1987: 12) "the body is one of the major objects contested in power relations" and that as such, "the body can be regarded as the object of dual power relations which inscribe it both socially and idiosyncratically, both 'externally' and 'internally'. The body is both the means by which power is disseminated and the potential object of resistance to that power." These dual power relations neatly parallel the dual value production outlined above (van Doorn & Badger, 2019) as labouring bodies become contested in the production of data and value, in addition to the provision of a food service. As is explored in chapter 5, workers harness their position between these dual power and value relations as they affect, and are affected by the platform labour process. By attuning ourselves to the role of the body at work, we are better placed to understand how a mode of "production defined by a combination of cybernetics and affect" is central in "the production of [a worker's] soul" (Hardt, 1990: 97).

Gig workers operate at the intersection of cybernetics and affect, as their body's position in space broadcast to the platform in real time through geo-locative surveillance. This positioning is a factor in which riders are assigned work and as such, the way their bodily engagements with urban space are codified by the platform performs a vital role in the provision of work. Following Veen et al (2020: 400) this results in riders developing strategies to affect their chances, as "workers espoused different theories about how the task allocation process could be influenced, including 'where' and 'how' to wait (e.g. different mobility patterns)." This directly reflects how workers jointly think together the way a platform's 'bodies of data' and job distribution algorithms engage with the data of their bodies to create idiosyncratic responses that shape the experience of workplace subjectivities.

According to Moore (2019) the proximity between a worker and surveilling technology creates a relationship that workers must skilfully manage (Smith, 2016) if

they are to survive increasingly challenging work environments. This is engineered into the gig economy through the enrolment of a rider's smartphone into the labour process - kept in their pocket, or mounted on their handlebars – that facilitates platform management's simultaneous quantification and performance management of staff as they undertake their duties. On the one hand, these relations leave workers vulnerable to the ongoing threat of psychosocial violence from their corporate-come-algorithmic bosses (Gent, 2020; Moore, 2018c), whilst on the other, provide workers the opportunity to attempt to exploit or resist the systems they work through their active manipulation. This dynamic and its affects are explored in greater depth in chapter 5.5 which narrates the specific way gig workers attempt to disentangle digital-urban-corporeal elements of their work through their embodied interactions with the labour process.

The modality of completing a task (i.e. taking a package from a business to end customer) requires a different (if complimentary) set of embodied skills to the gamifying of work allocation. Therefore, analysis of the skilled body in motion through complex urban-digital environments are essential in forging understandings of gig work praxis. Attention to Marxist-feminist interpretations of the body under capitalism contradicts the broader trends that position cycle delivery work as some sort of low-skilled task, and invites us to ask questions about the broader ecosystems of knowledge, care and skill involved in successfully discharging duties at work. This thesis responds to these questions through a specific focus on discussions surrounding 'flow' at work (both in general in relation to Csíkszentmihalyi, 1990, and in relation to bike delivery work in Kidder, 2011) as a form of affective labour and social reproduction. This forms the basis of an articulation of 'flow' alongside bodily 'skill' to stake a claim for skill development in gig work – and by extension, makes the argument that gig workers are indeed 'skilled'.

Kidder (2011: 76) defines flow as emerging at "the threshold between boredom and anxiety" as a person goes about the performance of a task. Because this threshold changes over time as someone becomes more experienced (or skilled) at performing that task, what they may have found anxiety inducing as a beginner

now leaves them bored. In short, flow is achieved when skill is perfectly balanced against the challenges of the task. The threshold at which 'flow' is achieved at work then, is various and multiple; contingent upon the capacities of individualised bodies to labour in their own way.

Ongoing wage decline and work intensification in the gig economy requires workers perpetually self-optimise (in lieu of any formalised training or advice by platforms). Given this work is unseen, not paid for, and performed outside the quantified realm, it must be considered in relation to the social reproduction of being a gig economy rider. As such, social reproduction in this context not only relates to how workers feed their bodies and maintain their bikes to make themselves ready for work, but also relates to the way their bodies develop a particular kind of fitness and endurance for riding long miles quickly, and the skilful engagements they have with the city and platform in managing how those miles play out in the techno-urban arena. It refers to learning new routes and shortcuts, in addition to how they approach traffic lights, restaurant staff, customers, and the platform app. The way this plays out in dialogue with the complex demands of work under platform capitalism echoes Grosz's (1987: 12, emphasis added) assertion that it is "*power* [that] actively produces rather than inhibits the subject's activities" as they respond to their conditions. Hardt (1999: 89) concurs, adding that "our laboring practices produce collective subjectivities, produce sociality, and ultimately produce society itself" that inform heterogenous, yet collective understandings of 'the gig worker' or 'the food delivery rider'.

Whilst this form of labour optimisation necessarily precipitates skill development it comes at a significant cost. In New South Wales, for example, the government established a task force to address worker safety following five delivery rider deaths in two months (NSW Government, 2020) with riders reporting that wage decreases were creating time pressures that led to increased risk taking at work (Zhou, 2021). Similarly Shepherd (2017) reported that a food delivery rider was (on average) killed or injured in a crash every two days in Shanghai alone. To maintain their take-home pay amid decreasing wages there is a perpetual pressure to pick-up-

the-pace. Riding faster, paying little attention to traffic laws, and making risky manoeuvres to decrease journey time all amplify the risk of injury or death. The rider's skilful manipulation of their bodies is the primary instrument in negotiating this work speed-up and intensification, bearing the full risk of any accidents that may occur.

Gregory (2020: 6) outlines how riders internalise and manage these risks, presenting verbatim one Edinburgh rider's thoughts:

"Here, how cyclists are dying is, like, when you see a dead squirrel or a cat or a dog on a road – this is how the cyclist died next to Princes Street. You hit or you just fall off, car goes over you and the car squashes your organs, you become haggis and you die"

Bringing these sentiments into constellation with Bissell's (2022) discussion of the *anaesthetic politics of being unaffected* at work is particularly enlightening here. Bissell (2022: 92) argues that a dual understanding of "anaesthesia as constraining and enabling can enhance our understanding of the politics of labouring bodies." Constraining anaesthesia relates to the disciplining of the body at work, whilst an enabling approach considers how "anaesthesia can be an effect of bodily tactics that work to insulate and protect a body from being affected by unwanted sensations induced by workplace environments."

Without doubt, reflections on corporeal vulnerability, death, or injury are thoughts that many riders felt need to insulate themselves from. This thesis builds-upon Bissell's (2022) tri-partite conceptualisation of enabling anaesthesia (as concealment, projection and resignation) to consider how the experience of 'flow' becomes manifest in the embodied experience of work. For Kidder (2011: 77) "what makes flow such an important type of experience is that by dampening (and often completely halting) reflexive thought…" it leaves riders feeling as if their "mind and body are perfectly in tune – as if operating on instinct alone". This allows couriers to focus solely on the task at hand, without the time or capacity to reflexively over-

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analyse the inherent risks of the job. However, this form of anaesthesia comes with associated risk as riders may be too desensitised and find themselves in harmful situations.

It is important to note that these bodily risks are not felt evenly by all workers. They are informed by each individual worker's relationship to the platform, which is in turn informed by their broader intersectional position within society at large. For example, Will Shu (founder and CEO of Deliveroo) in an interview with Kaniuk (2021. n.p) said he "enjoys doing his bike deliveries" and testing the app. Meanwhile Mellino et al's (2021) report exposed that some riders at Deliveroo. were "paid the equivalent of £2 per hour." For comparison company accounts show, Shu enjoyed a £519,200 salary and £5.2million share payout (Butler, 2022). Whilst extreme, this highlights how factors outside of the workplace deeply impact how riders experience the work they do and the risks they feel compelled to take. Factors affecting this (and by extension, affecting the worker's body and the reproduction of their labour) include – but are by no means limited to - race, class, gender, sexuality, and migration status. Research focussing on how a worker's location relative to various structural oppressions and disadvantages impacts their working lives is continued in the section below.

2.3.5 Intersectionality & the gig economy

An emerging area of the literature relates to intersectional perspectives on the gig economy. Studies generally show that white domestic workers engage the gig

economy on a more flexible basis that follows peaks in demand or temporary financial shortages (e.g., in the run-up to payday from a primary income stream) or to top up income from student loans. Meanwhile, migrants and BAME workers often engage fulltime in the gig economy, with it often being the primary income for a person or a family (Cant, 2019). These varying relationships to the work create different lived experiences (van Doorn, 2017). van Doorn & Badger (2020) find that migrants working in the gig economy are often rendered the most invisible of an already invisible labour force, as migrant riders frequently declined going on the record for fear of questions being asked by the platform if they were found out. The main points of anxiety raised were questions regarding their visa status and paperwork or that they'd lose their job (which given their limited access to welfare provisions would be catastrophic).

Visa precarity deeply impacts migrant experiences of work and integration into academic scholarship, tying into broader racisms playing out in the gig economy. For example, Waters & Woodcock (2017: n.p.) report how Deliveroo drivers boycotted Byron Burger in response to a coordinated immigration raid by the UK Border Agency facilitated by the restaurant chain. Similarly, coordinated immigration raids have taken place at Deliveroo recruitment offices and deportations have taken place as a direct result (Morris, 2016; CorporateWatch, 2016). Beyond this, systemic racisms are facilitated by the design of many gig economy platforms, as racialised identifiers result in negative correlations in customer reviews, and ultimately action to terminate contracts by platform operators (Rosenblat et al, 2016). For example, Endelman et al. (2017), report that personal information functioned as a racial proxy that facilitated discrimination by other users (such as having an African American sounding name). It is incumbent upon researchers to identify and challenge these systems.

Furthermore, language barriers may exist between researchers and migrant workers. In the UK context, a large proportion of delivery drivers are Brazilian, having moved to Portugal seeking better opportunities and then relocating to London on EU passports when the Portuguese financial and labour markets began to collapse in

2010. These language barriers similarly exist in unionisation efforts (Cant, 2019) and are now being addressed through the use of Portuguese interpreters and publications (such as the 'Ruptura' edition of the IWGB's 'Puncture' workers bulletin). Academic literature is also beginning to address these lacunae, but the process is a slow one. The conversation is currently playing out on the conference circuit and in blog posts by academics that are analysing these trends. For example, van Doorn & Vijay's (2019; 2020a; 2020b) investigations of migrant perspectives in New York, Amsterdam and Berlin.

There is also a limited library of resources investigating gendered experiences of gig work; reflecting the hyper-masculine environment found in other forms of bike delivery and logistics work (Kidder, 2011; Ferguson, 2017; Fincham, 2006). In this capacity then, the gap in gendered accounts of the gig economy pertains to both experiences of work *and* barriers to entry. Milkman et al. (2020) interrogate the intersections of gendered and classed aspects of gig labour (parallel to, but not drawing upon Haraway's, 2016, 'feminization of work') in addition to motivations for women self-selecting to take part in the industry. Central to this was the scheduling flexibility that allowed women to balance paid labour and domestic caring labour; standing in stark contrast to the broader retail environment, infamous for mercurial scheduling as bosses wield power to force people into work at short notice and restrict their abilities to carry out domestic care (Wood, 2020).

According to Milkman et al (2020: 9) female workers deployed "previously unremunerated skill in food provisioning" to their advantage at work; simultaneously finding satisfaction in providing unremunerated caring labour as part of the "social work element to this job". However, "women did not extend this desire to help indiscriminately… [and were] deeply resentful of class-based inequalities" the work presented them with (*ibid*: 12-14). In sum, Milkman et al. (2020: 14) found that "these predominantly white working-class women articulated not a feminist but a class specific female consciousness" through their work "embracing rather than challenging traditional gender arrangements" (*ibid:* 14). This nuanced finding

highlights the potential significance of gendered analyses of food delivery labour in future studies.

Continuing discussions of class in the gig economy, Cant (2019) historicises precarious work alongside analysing its contemporary platformisation to draw out recurrent themes and new directions between 'waiting on the stones' as a docker and logging on in the hope of receiving work as a Deliveroo rider. Similarly, he locates resistance efforts against the platform as embedded in place - with benches outside restaurants colliding with quiet periods in work to become key in the organising effort and subsequent actions. Ultimately, he concludes that an alternative future is possible for workers, however, this will involve galvanising around an intersectional class-consciousness and collective organisation that is currently undermined by the atomising nature of platform technologies and fissions in the workplace along intersectional lines as well as vehicle type - motorbike, car, or pushbike. This analysis returns us to platform capitalism, as 'highly skilled' workers (i.e., white-collar platform employees) are being harnessed to develop codebases and technical architectures that keep 'low skilled' workers (i.e. delivery riders) precarious. For Cant, these dynamics are enforced through the embedding of capitalist logics into the platform and the need for gig firms to generate return on investment for their shareholders. To overcome this, Cant asserts that tech workers and delivery workers need to find common grounds for collectivisation and begin addressing the power asymmetries at the heart of the system.

2.4 Resistance in the gig economy

Prior to 2016, the general belief was that gig workers could not be unionised (Cant, 2019) and were largely ignored (or abandoned, depending on perspective) by major unions more concerned with other sectors. The nature of gig work presented major challenges to organisation, including a lack of labour enforcement, individualised employment relations conjured through use of the 'self-employment' status, technical infrastructures that spatially atomised workers, immense financial power asymmetries and the broader precarity facing many as austerity continued to

ravage the working class in many global north economies (Standing, 2011). Organising in the gig economy felt like attempting to organise the unorganisable. However, a flashpoint occurred in 2016, initially in London and then in other cities across Europe that inspired an upsurge in worker activism from below (Cant, 2019). These collective actions were experimental, parroting for the most part the tried and tested co-ordination of labour withdrawal, paired with physical presence outside the company's headquarters in lieu of a fixed workplace (Bastani, 2016), supplemented by flying pickets - showcasing an openness to experimentation that would begin to ossify into concrete strategies over time (Osborne & Butler, 2016; Tassinari & Maccarrone, 2019).

These actions captured the attention of the press (Bastani, 2016; Dewhurst, 2016), shifting the discourse of gig workers being unorganisable towards a community capable of solidarity and resistance against all the odds (Tassinari & Maccarrone, 2019; Wood et al., 2018). Subsequent rounds of organising have followed, forming 'waves' of struggle in Europe (Cant, 2019) that have developed from disorganisation in action, into effective, coherent strategies. As such, Cant & Mogno (2020) assert that simply seeing all platform organising as novel is no longer good enough. Academics that follow these trends are responsible for reporting them as here to stay and iterate upon, rather than novel disconnected occurrences.

This involves looking beyond the 'moments' of resistance that are visible, to investigate the processes surrounding organising and resistance efforts. For example, Tassinari & Maccarrone's (2019) study of resistance to Deliveroo in the UK and Foodora in Italy found solidarity emerging from antagonisms inherent to the labour process of food delivery work, whilst the articulation and expression of that solidarity through collective action was shaped by the local geographies of each setting (see also Wood et al, 2018). Commonalities between both places included the informational and power asymmetries at the heart of gig economy work, in addition to 'trigger points' (O'Sullivan & Turner, 2013) that occurred on both platforms in 2016, such as changes to the remuneration structure or the opacity of management and the enforcement of informational asymmetries. Furthermore, corporate

outsourcing of management functions to an application meant management were distant and the space for conversations between workers to build social bonds became available. Similarly, worker classification as 'independent contractors' reduced the platform's ability to exert direct control. In the context of ever more restrictive union laws (Ford & Novitz, 2015), not needing to ballot or give notice of strike action combined with the ability for workers to simply not turn up to work provided fertile grounds for wildcat action to occur.

For Tassinari & Maccarrone (2019: 50) resistance in the gig economy should not be conceived of as a dichotomy of presence/absence but is best theorised as a continuum. This accounts for the various levels of involvement workers have in gig jobs and the effects of other intersectionalities that may alter a workers' capacity to resist. As such, a diverse range of actions, from the everyday "behaviours of reciprocity embodying the collective nature of the labour process (e.g. mutual help and support among couriers), to individual participation in low-risk acts of resistance and contestation (e.g. abstention from work, online action inflicting repetitional damage), to more 'conventional' forms of collective labour mobilisation (e.g. protests, wildcat strikes, pickets)" can take place. Taking hybridised levels of participation in resistance as well as work as the basic context - or platform - upon which resistance is built, the remaining discussion of resistance reflects on individual and collective strategies. Legal challenges are also a strand of resistance; however these have been explored earlier in the literature review in reference to bogus self-employment.

2.4.1 Individual Strategies

Rosenblat (2019) argues that workers develop idiosyncratic strategies for gamification and resistance by developing intimate knowledges of the labour process, rhythms of work, and technical architectures into which their labour fits. For Veen et al (2020: 399) the most common expression of agency was through "individual resilience and reworking" in response prompts that encourage work at certain times or places. Whilst this refusal represents a clear act of resistance, other

heterogenous strategies developed by workers can form a broader process of gamification. In her 2019 study of Uber workers, Rosenblat found that many had developed a mythologised approach to the platform that reified certain practices in the hope of encouraging better paid offers of work in the future in response to management's opacity and informational asymmetries at work. However, in a piece rate system, where platforms generate revenue by increasing the volume of task completion and garner reputational advantage by the speed of their completion, the primary beneficiary of workers gamifying their labour to undertake more tasks, is the platform (Woodcock & Johnson, 2018). This thesis will extend discussions of gamification and resistance in Chapter 7.

2.4.2 Collective Resistance

A primary challenge to collectivising platform workers is overcoming the platforms' atomisation of the workforce. Tassinari & Maccarrone (2019: 44) identify two processes for successfully doing this: "overcoming individualisation" and "developing consciousness in action". The former includes the nurturing of social relations by using free spaces and common waiting areas (or the private restaurant spaces where riders wait together to pick-up food). By collectivising on the job and in the workplace - particularly when work is going slowly or badly - worker dialogue naturally turns to the platform's organisation of labour and their shared enrolment in the labour process. In some cases, these communities already exist, such as the Brazilian riders in London who spear-headed strike action in 2016. In others they need to be cultivated from scratch; or be facilitated by trade unions (such as the IWGB or IWW's intervention into the work communities of riders in the aftermath of strike action).

Developing consciousness in action refers to how the experience of mobilising is itself generative of solidarity. In collective action, workers become visible to one another as workers (Hyman, 1999; Simms, 2012) and use the props of the workplace to re-frame their labour as work. For Tassinari & Maccarrone (2019: 46) this became particularly relevant when platforms "sought to depict couriering as

a fun activity done to keep fit or earn 'beer money', rather than as 'real work'." Additionally, being co-present in action helps overcome the atomisation that platform company systems encourage. Again though, it is critical to consider the heterogenous make-up of gig workers (some working part time, others being totally reliant on it for their sole income) and the role of someone's position in the intersectional matrix has on their capacity for action. Migrants working through the hostile environment in the UK, for example, may feel particularly unsafe demonstrating publicly; reenforcing the importance of a continuum of possible actions in fostering inclusivity in the group.

These collectivising struggles take advantage of the natural blind spots platforms create. They are – in a Latourian sense, (2005: 181) – 'oligoptica' as they "do exactly the opposite of panoptica: they see much too little to feed the megalomania of the inspector or the paranoia of the inspected, but what they see, they see it well." The exclusively digital surveillance of work - meaning every interaction that doesn't take place through the platform's digital infrastructure is beyond their surveillance capacity - is crucial in opening-up blind-spots in which workers can organise and collectivise their efforts. This community building can take place beyond in-person dialogue, with worker 'zines and flyers (such as the *RebelRoo*) being distributed between workers to raise a collective consciousness of their conditions.

2.5 Global literatures and perspectives

Despite the gap in anglophone literature – focusing predominantly on European and US contexts – the gig economy has enjoyed a global spread. Indeed, many of the world's biggest firms operate solely in Asian markets. For example, food delivery giant Meituan recently reached a market capitalisation of $100billion (approximately $40billion more than Uber, Liao, 2020) managing more than 15million deliveries a day. Furthermore, the China Labour Bulletin (2018: n.p.) notes, Meituan represents a "flashpoint with an 11% share of [industrial] actions in this [the entire service] sector", showcasing the gig economy's significance in China's

complicated industrial relations landscape. The socio-economic climate in China means the lived experiences of gig work have commonalities and differences with work elsewhere (Wu and Zheng, 2020). In neighbouring Hong Kong, early explorations of the gig economy have coincided with political unrest in response to the Chinese extradition treaty, where Lam (2019) has reported Deliveroo riders being caught-up in pitch battles between the police and protestors and hit by tear gas. In India, just like in New York, gig workers have committed suicide in the face of enormous debts and reduced earning potential (Mallick, 2020). Equally, Eastern Europe, Africa, and Latin America all have a diverse array of home-grown platforms and international giants operating with services and labour regimens tailored to local contexts (Fairwork, 2019). Sadly, this thesis does not add to these international perspectives due to funding and time restrictions. However, it is critical to highlight the diversity of experience and the current gap in the literature.

2.6 Food delivery in the UK

This thesis focuses specifically on last mile logistics in London's gig economy. Academic work on food delivery is limited in comparison to that on ride-hail. This was an initial trigger in choosing to study food delivery at the beginning of the PhD. However, whilst the field has not emerged as fully as other platformised sectors, there have been promising inroads made into the analysis of this work in British geographies. Gregory & Maldonado's (2020: 1187) work is a particular highlight, blending sociological, architectural, geographical, and organisational literatures together to illustrate "how on-demand food couriers create, modify, and reproduce social space in the city." In doing so they developed innovative methods to digitally monitor riders' movements that mimic platform surveillance to create maps and 3D topographic models of Edinburgh as navigated by food delivery workers. Combined with interviews, these bring together the peculiar local historical geographies of the city centre with the technologically enabled managerial logics embedded in the platform to illustrate the unique use of space these workers engage in whilst skilfully navigating their way through an evening shift. Furthermore, these data emphasise the possibility for further integration of labour platforms into broader platform

urbanisms and 'smart-city' futures. Elsewhere, Richardson's analysis of her time spent delivering meals in Newcastle-Upon-Tyne (2019: 2) opens a dialogue between neo-classical economics and economic sociology in the construction of the meal delivery markets. By decentring but acknowledging the interface as an active agent among other "material practices through which goods are constituted via contingent arrangements of buyer and seller" she determines a model of "coercive flexibility" central to the platform's success. Here, freedom, but not too much, is essential to ensuring meals are delivered in a timely way, coming about at the intersection of platform mediated market, city, and a range of other factors.

This complexity is also apparent in non-academic accounts, such as Day's (2016) and Seaton's (2019: n.p.) writings in the *London Review of Books*. Her "relationship with Deliveroo is mutually exploitative and entirely mercenary". She wrestles with the oscillations of being "a girl sitting listlessly on a graffitied bench next to an unwieldy backpack, willing someone within a mile radius to decide they can't be bothered to cook" and the joys of exerting her agency appear through deployment of intimate urban knowledges made on the job: "I can avoid slow restaurants, maze-like residential complexes, the places where there is nowhere to lock my bike. I know how fast or slow the lifts are in different buildings. I've become newly acquainted with the place I've lived all my life by seeing the insides of buildings I never had a reason to visit" (*ibid.*: n.p.). This exemplifies how food delivery makes flâneurs out of those who do it. Similarly, her accounts point to both the joys and sorrows this work entails in a way reminiscent of de Botton's (2009) observations of work in different sectors. Critically, British scholarship provides a counterweight to US work that is organised in grid cities. The complex development of rhizomatic streets and underground loading bays in UK urban areas adds an additional spatialised layer to the work, not as readily present in the gridded US urban environment (that presents other challenges such as regular cross junctions and fast-moving traffic).

Other material, written by workers for workers, aims to build solidarity through collectivisation. These most commonly take the form of flyers and bulletins,

providing some insight into both unionisation efforts and the daily struggles workers face. For example, *RebelRoo* (2016-2018) was coordinated by Deliveroo riders and political group *PlanC* and ran for two years following the 2016 Deliveroo strike, reporting on domestic and international issues of concern. The fourth issue from February 2017 included the headlines "The App is a piece of Shit!…Hours slashed in Middlesbrough… Our precarity is their profit: A report from Marseilles." Similarly, the bi-lingual (English/Portuguese) *'Puncture'/'Ruptura'* (2019) worker paper is organised and distributed by the IWGB. *Ruptura* became the place to report on daily workplace frustrations and to advertise upcoming and successful industrial actions, with articles on: "Full shut down on May Day Weekend… Rolling strikes set to be unleashed…Deliveroo failure, rider cost". These publications offer a window into the discussions and literatures emerging from the food delivery worker community in the UK, in addition to a continuous archive of collective resistance efforts over time.

Elsewhere, policy reports have sought to amplify worker testimony, with varying degrees of success. The government commissioned *Taylor Review of Modern Working Practices* (Taylor, 2017) was set to be the biggest intervention into contemporary forms of work and the suitability of the 1996 Employment Rights Act to date; promising to take account of worker sentiment and trim the excesses of platform management. However, the report refused to formally consult the IWGB who were – at the time – the largest organising body of gig workers (Uber, Deliveroo, traditional couriers) in the UK. More concerningly still, was the IWGB's exposé that one member of the Taylor Review panel, Greg Marsh, was an angel investor in Deliveroo who still held shares whilst the review was in progress (Ram, 2017). This, among other issues, prompted the IWGB to formulate a report in response; *Dead on Arrival* (IWGB, 2017) which, over the course of 64 pages, detailed the limitations of Taylor's interventions and changes the union saw fit as a necessary corrective.

Field and Forsey's (2018: 17) *Delivering Justice? A report on the pay and working conditions of Deliveroo riders* for the Department of Work and Pensions consulted unionised riders, and the findings were damning. It was detailed that riders' average pay "tended to hover a little above, a little below, and at the level of

the National Living Wage" whilst some reported being "on less than £1.60 an hour at times". These findings were later corroborated by *The Bureau*'s (Mellino, et al, 2021) pay analysis of Deliveroo riders ahead of the firms IPO. These reports, and the unions' various roles in them highlight the need to reflect on who is writing and why; whose voices are being amplified or silenced and how. When we understand these contextual factors, we are better placed to critically read and engage with their findings.

One problematic set of commentaries on the gig-economy comes from large consultancy firms. Deloitte has been the most vocal of the 'big four', unsurprisingly, since one of their primary business offerings is consultancy services for digital native and companies transitioning into 'platformised' or 'digitised futures'. In their own words, they offer "dedicated digital practitioners [who] work with you to bring digital strategy to life, helping you meet the realities of today…and tomorrow…" stating "…This isn't a technology exercise—it's a business imperative" (Deloitte Online, 2016). This position needs to be considered when surveying their glowing reports of the opportunities for workers and business in the adoption of gig economy logics. For example, Maitra (no date: n.p.) argues that "everyone wants more freedom in their careers – give it to them before they leave to find it without you". Similarly, Volini et al's (2019: n.p.) chapter in Deloitte's *Human Capital Trends of 2019* report asserts that alternative work arrangements "improve organisational performance" alongside pithy, yet unexplored assertions that vouch for "alternative workers, mainstream respect".

In Deloitte's *Decoding Millennials in the gig economy,* Monahan *et al.* (2020: 2) find that "Most alternative millennial workers make less than their traditional full-time employed counterparts" and in addition, that "gig workers appear more likely to… have emotional agility, and work hard". As a business owner seeking consultation services and pondering your choices about whether to move toward alternative gig platform structures, the message is clear. Have a worker you can pay less, drop when they are not needed, and best of all, they will work harder and be more resilient. Oh, and Deloitte will be the firm to make it happen. These trends are

of crucial significance given the proximity the big four consultancies (Enrst & Young, Deloitte, Price Waterhouse Cooper & KPMG) have to government and policy circles particularly regarding tax and corporate financing (Jones et al, 2018). Whilst it may be too late for the riders of the gig economy who are already precarious, consultancies such as Deloitte are active agents in attempting to reshape the broader economy to follow the scorched earth left in the wake of Uber and Deliveroo's 'disruptions'. If we are not vigilant of, and critical towards, these sources the disastrous conditions analysed in the thesis that follows may spread further and further into our economies. Whilst I disagree with the rose-tinted view of the gig economy these reports find, in addition to the disguising of their profit motive for writing them, I believe we are forced to take note of their proclamations - if for nothing else, the business world and government are already doing so.

The final set of commentaries regarding food delivery in the UK comes from the press, whose imaginations have been captured by various brightly uniformed workers flooding our cities. The right-wing press have played-up older narratives of bicycle messengers being a menace to society (Kidder, 2011) in reports that play out like the storyboard of a low-budget comic book action movie. For example, in reporting an altercation where Deliveroo drivers were accosted by passers by throwing rocks at them, the Daily Mail reported: "He pounces on top of the driver and rains down a flurry of punches on their head. At this point he is thrown off by another driver who slams him to the ground. The delivery man previously getting punched then brandishes the plank and hits the man with it" (Scully, 2020). Meanwhile, centre-left papers such as the Guardian have delivered a range of reportage often taking into consideration the precarity and various struggles faced by gig economy workers featuring analysis of executive pay alongside conditions for rank-and-file workers (e.g., Butler, 2019). Furthermore, their opinion section has often amplified the voices of active riders, such as Howard's (2020) *I'm a delivery rider with suspected coronavirus. I haven't received a penny in help.*

Whilst these reports begin to get to the structural issues inherent to the gig economy and platform capitalism more broadly, specific reporting in the left-wing

press has provided the space for sustained and engaged critique. For example, *Novara Media* have published articles such as 'The gig economy is killing people' (Cant, 2019b). Elsewhere, Tribune Magazine has published articles ranging from Hughes' (2019) reflections on inter-relations between government and Deliveroo to studies on toilet inequality in the contemporary gig economy (Badger & Armston-Sheret, 2021). Perhaps the most important work so far has been *The Bureau*'s (Mellino, et. al, 2021) investigation into working conditions at Deliveroo. It was written in collaboration with workers - with *The Bureau* paying some workers for their time and expertise as researchers – and used pay analysis to highlight the exploitation and toxicity at the heart of the platform's business (such as earnings of £2 per hour). This was widely circulated to investors as well as being picked-up on national television news stations and is credited with helping destabilise the Deliveroo IPO (Glover, 2021).

2.7 Traditional Bike Messenger Work

Bicycle couriering has a much longer history than the gig-economy. Indeed, it might even be considered its pre-cursor. Couriering has forever had a symbiotic relationship with technology and the city; it's fate hanging precariously in the balancing act between technological 'progress', markets, and the demand for dare-devil workers willing to take-on traffic filled streets. Whilst the enrolment of digital platforms to surveil, manage, and innovate bicycle delivery is a novel addition to the workplace, it is crucial to contextualise this as the leading edge of a long tradition of bicycle messenger work's relationship with technology. Downey (2002) traces its origins back to 1850 and the early telegram system, where young boys on pushbikes were employed by the Western Union and American District Telegraph companies to courier documents from a local office to their intended recipient. Here, the disruptive technological development of the telegram and the emerging popularity and affordability of the pushbike worked together to reshape human perceptions of time and space (in a process of time space compression that dramatically accelerated communication - Harvey, 1990a). The next proliferation of messengers came in the post-industrial city. According to Kugelmass (1981) the "[s]peed and manoeuvrability

make the bicycle messenger an indispensable part of New York City's most time-conscious and competitive industries—film and advertising."

As such, couriers predate the ubiquity of the fax machine, scanning technologies and ultimately email as the only fast and reliable method of transporting documents and packages across urban space. Their speed was afforded by innovations in the organisation of logistics; removing the central distribution centre – required for national delivery networks such as the Royal Mail, FedEx, and the telegram network – instead favouring an agile fleet of dispersed couriers able to pick-up and drop off packages direct from door-to-door. Here, it is a human 'controller' that receives calls from clients and dispatches them to messengers; harnessing the intimate personal and collective knowledges of the city and their workforce to do so (Kidder, 2011). Whilst the gap between the market's need for documents to move quickly, and technological infrastructures capable of doing so carved out a lucrative niche for couriers to work in, it was their adoption of analogue communication technologies that allowed this to function. Early pioneers of the New York courier scene would set out for the day with a pocket full of quarters; using payphones to call back to 'base' and pick-up another series of jobs, memorising details in their heads or jotting them down on slips of paper as they went. Next came the introduction of CB Radios, as masts and equipment became cheap enough to achieve full city coverage; greatly reducing the communicative friction of dispatching work (for further background, see Day, 2015; Kidder, 2011).

The earliest known ethnographic account of this work by Kugelmass (1981: n.p.) emphasises the skilful collaboration of body and bike in the city. As messengers become "more in harmony with it [the bike]" they become "more a part of the bicycle", extending the body beyond its corporeal limits and into the steel of their bike frames (Day, 2015: 43). Just as messengers became part of the bikes they were riding on; they also became a part of the city they were riding through. One rider recounted for Kugelmass (1981: n.p.) that:

"You get to greet the morning. There are all these different angles of life. I mean, the city's beautiful. You watch it change. It's a question of stone canyons. The light plays on them, and it's different light all day. You know there's a real connection with being alive, especially when you're coming out of the offices."

Here, couriering is further defined by its contradistinction to the office culture that was becoming dominant. It stands in defiance of the money cut by large corporations and the perceived 'cushy' yet impersonal cubicles that people inhabited all day, favouring 'authentic' experiences with our social urban environments and communities of workers.

Collective identity is forged through the harsh working conditions and poor remuneration that give traditional bike messengers their punk edge. This idea permeated the popular imagination, as *New Yorker Magazine* (in Kidder, 2011: 6) observed bike messengers "are becoming folk heroes… the bicycle messenger might even be regarded by some as the ultimate urban citizen - tough, resourceful, self-contained, riding against the odds the city stacks against everybody." This becomes manifest in what Kidder (2011) characterises as the bike messenger sub-culture. Borrowing from Hebidge (1979) he uncovers the signs and symbols that hold together the community. These include a messenger style (Bialobos, 2012) typified by fixed gear track bikes, patched clothing, bicycle caps and messenger bags on display in key 'hang out spots' in the city (such as the Shoreditch Foundry). A corner stone of the culture are illegal street races called 'alley cats' that mimic work as couriers compete to travel point to point and pick up signatures on a manifest at checkpoints located around the city. Kidder (2011) finds that this is central to the de-alienating experience of bike messenger work, standing in distinction against much of the rest of contemporary capitalism. For Spinney and Popan (2020) this playful and sub-cultural element is remarkably absent from the gig economy.

For Kidder, 'deep play' at work stems from the particular brand of edgework (Lyng, 1990) couriers engage in, their enjoyment and risk mitigation stemming from

their 'affective appropriation of space' (Kidder, 2011: 133). In this, their "cycling skills allow them the freedom to operate *between* the girders of the structure" and deploy their rich urban knowledges in the undertaking of their work - a sentiment reflected in Fincham's work on bike messengers on this side of the Atlantic (2006; 2008; 2009). Day (2015: 103) describes this as "resisting the tyranny of the map", as the natural features of the city and trade-routes of the work collide to conjure highly idiosyncratic uses of urban space. Sounding a chord with the psychogeographical writings of Sinclair (2003; 2015) and the practices of everyday life by de Certeau (1984) bike messengers develop a dual vision of the city. Their ability to route their way through complex traffic and streets gives the view from above, whilst their micro-practices highlight the tactics needed in the negotiation of work. This is noticeably absent from literatures focused on gig work that prioritise the role of technology, regardless of the reality that workers must negotiate complex urban environments even if their route is pre-destined and provided for them (i.e., no amount of GPS mapping saves you from being hit by a bus. Only cycling proficiency and skill can do this). Other accounts written by couriers corroborate this joyful deployment of skill in the every-day undertaking of their work (Chappell, 2016; Culley, 2002; Sayarer, 2016). All this is to say, that by de-centring the mobile digital technologies used in the gig economy, a reversion to literatures surrounding more traditional forms of bike messengering highlights the acutely skilful and personal relationships that exist between city, bike and rider in the undertaking of their labour.

2.8 Conclusion

This review has brought together a broad range of literatures in the discussion of gig work, highlighting the phenomenon's depth and breadth, in addition to identifying the gaps in the current literature. In doing so, it begins connecting the dots between the meta-shifts in capitalism's development, the way these are built into technological interfaces, how they are experienced on the ground by workers, and how they may be resisted. The remainder of this thesis will build on these literatures, enriching them with findings from the field. Whilst the gig economy has

deep histories and emerges as part of a long line of technologically driven changes within capitalism, much of the academic work thus far only reaches the surface of this phenomenon. Given extended time in the field and five years spent studying gig work, this thesis hopes to add depth and detail to the debate. It continues to do so in the next chapter that outlines my novel conceptual approach to the field.

Chapter 3 – APPROACHING WORK AT THE INTERFACE

"My journeys were conducted at the whims of capitalism and guided by the decisions of my controllers, articulated on the tarmac by the instinctive gestures of body and bicycle" John Day *Cyclogeography* (2015: 17)

3.1 Introduction

This chapter outlines the conceptual underpinnings of the thesis. Being led by the phenomenon in question - i.e. the lived experience of working in London's gig economy - rather than disciplinary silos, it is necessarily broad in its scope. It spans geography and organisation studies in addition to sociology, new media studies, critical theory, critical data and algorithm studies and the digital humanities. It focuses particularly on providing the conceptual groundwork for the thesis that

follows, introducing and then braiding together three distinct strands of social science theory: sociomateriality (Orlikowski and Scott, 2008), interface envelopes (Ash, 2015), and rhythmanalysis (Lefebvre, 2004). Taken together, these outline the distinct conceptual lens through which I came to understand my field site. The review begins by establishing an understanding of approaches to digital geographies and relational spaces before enfolding these spatial conceptualisations in theorisations of sociomateriality. Discussion will then turn to the advantages of considering these sociomaterial assemblages as interface envelopes and the specific forms of power and agency that emerge from this perspective. Finally, it will return to the role of the human in this otherwise flat ontological constellation, exploring the potential of rhythmanalysis as a means of conceiving both the complexity of these work environments and how they emerge from the lived experience of the worker.

3.2 Digital Geographies and Relational Space

Food delivery in the gig economy requires riders move through space in sustained collaboration with a host of human and non-human actors as they rationalise and negotiate the complex urban environments that comprise their workplace. For Kidder, (2011) bike messengers are the absolute masters of spatial awareness and the cities they work in; the urban cowboy or cycling flâneur. To be able to begin analysing this work in the gig economy then, we must first begin by contextualising the hybridised digital/material spaces through which platform couriers work.

"Not so many years ago, the word 'space' had a strictly geometrical meaning: the idea it evoked was simply that of an empty area… to speak of 'social space', therefore would have sounded strange" (Lefebvre, 1991: 1). The Euclidean perspective of mid-century social scientists shares much with the way platforms like Mercury Meals and Iris Delivery organisationally conceive of spaces, bounding and zoning the city into different respective markets bordered by various local geographies (topographical, architectural, cultural, and social). They understand space as a challenge, something to be mapped and moved across. However, for the

gig couriers who interact with these digital representations of space the reality is entirely different, as they must synthesise the infinitely complex material worlds playing out in front of them with the neat spaces presented to them on the platform app.

The production of space (Lefebvre, 1974) for the courier then, occurs at a complex intersection. The riders' spatial practices – i.e. their movements *through* space – are informed by the representational spaces of the urban environments they pass through and their previous experiences of those locales, as dictated by the representations of space made by the platform and presented to riders via the app. The spatialization that occurs is one that locates riders as the synapse between digital and urban space, blending them together and working across the distributed agencies that occur as the rider, city and platform collide, constitutively entangling one another in the practice of gig work.

This causes problems for previously held beliefs about 'digital spaces'. In the 1980s, social science studies of technology prophesised the internet as an alternative plane of space, abstracted from the lived, fleshy realities of our analogue earthly experiences. By infusing the imaginaries of Gibson's (1984) *Neuromancer* with the material realities of early internet enabled computers (non-portable devices users sat at and logged-on to), online and offline worlds were conceived to exist in a Cartesian fashion (see Turkle, 1995; 2005), the surfaces of each realm gliding neatly on top of one another. Attention was thus given more to the 'bits' of technology use, rather than the 'atoms' that formed its material constitution (Dourish, 2017). Technology was even conceived of in such a way as to de-materialise the human user, precipitating popular idioms such as 'on the internet, no-one knows you're a dog'. However, materiality really does matter when it comes to thinking about digital technologies and space – the simple reality being that touch screens and keyboards are not made for paws.

Later work in the digital geographies directly considers the embedded and enmeshed nature of technologies in our everyday lives. These go beyond

Heideggerian (1977) conceptualisations of technology as a selection of tools that extend human capacities for action and agency and instead highlight the ways agency occurs at the intersections of digital technology and life. Kitchin & Dodge (2011: 80) understand the role of technology in our relational view of space to be facilitated by the communicative forces of 'transduction'. Transduction is "contingent, relational, scaled, and context-dependent, emerging through the discursive and material practices of a collaborative manufacture". In this way, transduction gives some of the necessary linguistic tools to analyse exactly *how* technology is relationally shaping our experiences. Kitchin & Dodge continue to highlight how technologies' imbrication into the functions of everyday spaces and consciousness, render society now unable to function if they were removed. To this extent then, we are reliant upon them even when not using them directly. Consider buying food in a supermarket with cash. Although a customer may not use digital technologies to purchase the goods, the transaction is enabled by – indeed relies-upon – point of sale technology, digital ledgers in banks, digital stock management systems, GPS logistics technologies and agricultural tech. Kinsley (2014: 365) uses this as the basis for his argument that we must consider the 'matter' of the virtual with the intention of continuing to undermine the "distinctly Cartesian and Euclidean ontologies of space" that stem from the previously held "separation between the physical, often referred to as 'real', world and the abstract or mental, 'virtual', world" In an organisational context, this is exemplified by Orlikowski's (2007: 1435) sociomaterial approach that posits "materiality as constitutive of everyday life."

By conceiving of the digital as enmeshed in our environment – as part of it, rather than operating on a separate plane of space, as in earlier Cartesian accounts – digital geographies enable us to take seriously Callon & Law's (2004: 7) assertion that "there is no distinction between the individual and his or her environment; that many, perhaps most, relations remain implicit; that entities are made out of a myriad of heterogenous entities." This relational way of thinking (Jones, 1998; 2005; 2009; Law & Mol, 2001) informs a theory of space that is encountered, performed, and fluid, where "what counts, is connectivity" (Thrift, 2004: 59).

This builds on Massey's (1994) conceptualisations of a 'sense of place' that is performative and processual, forever coming into being as relations change with shifts in social, cultural, political, and economic flows. By understanding digital technologies to be part of these flows, we can consider how they shape perceptions of place and how these change over time, as places are never in stasis, but rather locked into a continued process of *becoming* in an ongoing present (Anderson et al., 2012). Massey's (2005) discussion of spatial trajectories being bundled together provides an essential frame of reference for understanding and discussing the multiple competing and collaborating geographies of working in London's gig-economy. As a worker, your trajectory encounters many others in the day-to-day performance of picking up and leaving behind the threads of others as you pick up and drop off packages. Without this carefully nuanced approach, we would neither be able to interrogate the construction of work-life for the individual, nor the complex systems that hold the gig-economy together.

In considering Soja's (1989) assertion in *Postmodern Geographies* that academic conceptualisations of space were responding – in part – to the functions of capitalism in our societies (see also Lefebvre, 1991) we can begin to reflect on how technologically enabled platform capitalism simultaneously emerges from and co-creates a space founded in contemporary modes of gig-work production. This chimes with more recent scholarship such as Ingold's (2015) 'meshwork' that encourages us to understand place as emerging from the entanglement of non-human actors or Anderson et al.'s (2012: 574) understanding of places as emerging at the intersection of social and material processes "alongside the practices, cognitive responses, and emotions that produce and are produced by this intersection."

3.3 Sociomateriality

There have been similar developments in organisational approaches to the digital. Sociomateriality emerged from the transaction of multiple strands of organisational research that were circulating at the time, whilst also seeking to mark a departure from the already existing Socio-Technical Systems (STS) literatures.

Whilst STS refers to the interdependent separateness of human and technology in contemporary organisations (Leonardi, 2012), sociomateriality emphasises the embeddedness – indeed, inseparability – of human and technological capacities. Here, the jettisoning of the '-' between 'social' and 'material' intentionally provokes an understanding of their togetherness, that they are ontologically inseparable from the start (Introna, 2007).

This perspective draws influence from Latour's (2005) and Callon's (1986) work on actor-network theory, in addition to post-humanist literatures (Barad, 2003), new materialism (Bennett, 2010; Barad, 2007) and the philosophy of knowledge (Pickering, 1995) to open-up discourse regarding the agential potentials of matter – paying attention to material coalescing in the studies of *digital* technologies in organisations. By attuning ourselves to the materialities of digital technologies, or what Dourish (2017) would term *The Stuff of Bits*, we are better positioned to understand the relationships between people and things in the labour process. Moreover, sociomateriality's specific focus on objects as designed for a purpose that is unevenly achieved in praxis allows us to interrogate the power relationships involved in digital technologies at work, lifting the veil on what Beer (2019) terms the fetishised 'data gaze' of technological objectivity and rationality. As such, sociomateriality encourages us to ask questions that cut through the spectacle of technology to unpack not only the relationship between technology and worker, but also the power relations bound-up in the technology itself. This follows the broader movement across social sciences towards relational understandings of our world, be that the spaces and places we are a part of, or the technologies we use.

Seeing the social and technical as ontologically inseparable (Introna, 2007) is the basis upon which Orlikowski (2007: 1436 – 1437, emphasis original) argues the dual notion that "*every* organisational practice is *always* bound with materiality" and that "the social and material are *constitutively entangled* in everyday life". This means that agency is not located solely in the human or the material, but rather emerges from their interaction. By not diminishing the role of either we are attuned to the way in which their thorough saturation in one another is constitutive of our

everyday realities and by extension, our organisational life. Naturally, seeing materiality in this way requires a radical redefinition of earlier accounts of technology as a passive tool that simply extends (Heidegger, 1977) – or determines, as in Trist and Bamforth's (1951) originary STS studies of mining - the capabilities of the human. In this light, materiality takes on a performative role of its own in a partially choreographed, partially improvised dance of agency with other actors that Pickering (1995) terms the 'mangle of practice'[12]. Embedded in this mangle, is the chaotic ephemerality that occurs when the social and material collide for the first time to form a heterogenous assemblage of distributed agencies – in addition to the ways these become stabilised over time as they ossify into routines, practices and 'flows' of action.

Orlikowski asserts that this process of stabilisation emerges from how things are "designed, configured and engaged in practice" (2007: 1444) and that by paying attention to the three-way dialogue between the designer, the organisational context in which it is deployed (configuration) and its actual use (emergence in practice) we can unpick the process. In her study of the Blackberry, the push email function - designed to make email more accessible - becomes wrapped up in organisational contexts that encourage users to stay working and contactable at all times, garnering their colloquial reputation among staff of a financial services firm as "Crackberrys". Symon and Pritchard (2015: 250) develop this further in their study of mobile phone use at 'Rail Engineering' to understand how senior management harness the performative agency of the smartphone "to form a new kind of sociomaterial agency: management at a distance". To do so, they introduce Jones' (1998: 297) conceptualisation of the "double mangle". This is a sociomaterial configuration in which human agents seek to channel material agency to shape the actions of other human agents", a power that stems from the sociomaterialities of the smartphone and the organisational hierarchies into which both are entered and modify. Furthermore, they found that sociomaterial practices become 'tuned' into organisational expectations of workers, as well as incorporated into the identity

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[12] Something Suchman (2007) refers to as "a creative sociomaterial assemblage"

performance of the diligent, committed employee. Here, being provided with a work phone signifies a level of authority within the corporate structure, whilst the flashing notification light (for push email) signals to other employees who can also see your phone, just how in demand your attention is. By being accessible workers can perform the role of the committed, diligent employee rather than 'lackey out on the track' (*ibid*: 254).

In both cases, the capabilities designed into a smartphone (such as push email, or unending connectivity) become configured by organisational practice to create distinctive effects that stabilise into new organisational norms over time (see also Gregg, 2011). By viewing technology in an organisation from this sociomaterial perspective, we can not only begin unpicking the relational creation of organisational space and life, but we are also able to develop understandings of *how* these come to stabilise and create new norms that are also always open to the possibility of change. This resonates with Massey's (2005) 'thrown-togetherness' of relational space; attuned to the ephemeral and fleeting emergence of heterogeneously assembled agencies, some of which repeat over time to create a distinctive rhythm, feel, and flavour to our lives.

Whilst bosses seek to control the rhythm of the two-way agency dance, workers often have other ideas. The unpredictable results of sociomaterial mangles can be harnessed in both collective and individual resistance efforts, or to soldier or 'game' at work as technologies deployed in the name of efficiency and control transform into sites of rupture and resistance. For example, staff in Woodcock's (2017) call centre who learned to manipulate small gaps in the technological infrastructure to their advantage; Paulsen's (2011) white collar workers who manipulate their work time for private activity; Burawoy's (1979) production line workers who collectively manage their output; and Beynon's (1973) Ford workers who organised their resistance around technologies of production. This stems from the double dance of agency that takes place between human and non-human subjects at work, and in this regard has been a central - even defining - feature of management studies over the past century. Ultimately, no system is 'perfect' and

total productivity is a myth, despite capitalists' best efforts to convince us otherwise. Taylorism and scientific management emerged from the reality that workers have the most intimate knowledges of the materials they collaborate with in the undertaking of their labour (Braverman, 1974) and therefore can apply agency in 'soldiering' or finding other ways to appropriate time or materials at work. Similarly, Human Resources Management (HRM) and Japanese models (or Toyota models, see Moore, 2018a) of management stem from the recognition that eliminating the potential for dissenting behaviour is impossible, and hopes that by bringing workers on board with the corporate mission they would choose not to take advantage of it. Now, as we progress further into what may come to represent a new form of management (algorithmic management in the gig-economy) it is essential that we turn our focus to how power and agency is distributed across and through the sociomaterial assemblages of the workplace.

The role of the algorithm, and especially of Artificial Intelligence (AI) and machine learning, is still emergent in both industry and academic disciplines charged with analysing it. At present, there is no consensus on whether algorithmic management marks a departure from, or a progression of, existing approaches to management. However, the potential for sociomateriality to shine a light on this debate is illustrated by Suchman's (2007) observation that sociomateriality possesses the tools for studying the 'hidden from view' relations that underpin organisational practices, performances, and behaviours. Given that this research explores the lived experiences of work and that the platform presents itself to workers predominantly via an interface on their phones, this thesis brings sociomateriality into concert with theorisations of the interface (specifically Ash's 2016 *Interface Envelope*). As is explored below, this provides a neat way to conceptually bound the remit of 'the interface' whilst providing the additional lexical tools necessary for unpicking inter-relations that occur at micro and macro levels in the construction of a sociomaterial mangle of gig work practice.

3.4 Sociomaterial Assemblages as Interface Envelopes

Renewed theorising of the interface comes at the intersection of a 'digital turn' in geography (see Amoore, 2020; Ash et al, 2018; Rose, 2016; Wilmott et al, 2017) and the broader influence of critical media studies in the social sciences (see Adams, 2017; Cockayne et al, 2017; Galloway, 2012; Pettman, 2016; van Doorn, 2011). This has seen it transformed from being conceived as a surface across which communication between human and non-human subjects takes place, into a way of understanding the milieu of bodies, screens and technical objects that comprise everyday life as specific and emergent 'foldings' of space-time. Specifically, this thesis draws on the post-phenomenological perspectives of Ash (2016) and others (e.g. Simpson, 2008) to provide a conceptual boundary for the interface being studied, as well as providing the lexical tools and theoretical frameworks to investigate them. By redefining the interface in post-phenomenological terms, we are better placed to ask the sociomaterial questions of contemporary organising that follow flattened, relational ontologies as opposed to the previously dominant norms that instrumentalised technology as tools, or an exteriorising of the self (Heidegger, 1977). Although these theories were developed within video game studies, I hope to join other researchers (Bissell, 2018; Bissell & Del Casino, 2017, and McCormack, 2017) in applying them to other phenomena.

In theorising the interface, Ash (2015) continues Heidegger's (1977: 12) commitment to "take seriously the simple question of what the word 'technology' means", whilst moving the conceptual frame from phenomenology to post-phenomenology. This transitions discourse away from describing the world as it appears to humans, instead infusing studies of technology with new materialism (Bennett, 2010; Roberts, 2012, Tsing, 2015), speculative realism (Bryant et al, 2011), and object-oriented ontology (Harman, 2018). This results in a re-reading of techne to include Steigler's (2013) pharmakon, "in which an object is both autonomous from other things, yet central to the composition of those things" (Ash, 2016: 137); a position that already feels familiar to the distributed agencies of sociomaterial thinking. Just as Merleau-Ponty (2014 [1945]) rejected the Cartesian division of body and mind, Ash's Interface rejects the division of human and non-human matter. In questioning human alterity in this context, post-phenomenology presents distinct

opportunities to sociomaterial lines of enquiry (Ash & Simpson, 2016). Although developed simultaneously but separately, with much shared intellectual heritage, it is the hard-wiring of these philosophical perspectives that means the interface envelope is well placed to modify and intensify sociomaterial analysis.

A post-phenomenological definition of technology is necessarily different from the phenomenological definitions that have proceeded. Instead of understanding technologies as singular objects, Ash (2016: 31) terms these "Interface Environments" which are "actual environments, ecologies of [inorganically organised] objects, each of which has their own reality and capacity for relations with other objects." By seeing interfaces in this granular way, we are forced to consider inter-object relations within devices, breaking down their naturalised appearance as coherent 'wholes'.

If "interfaces are sets of objects that continually encounter one another and generate particular qualities that are partially dependent on these encounters" (Ash, 2016: 28) then it is essential we are able to label and interrogate these encounters. To do so, Ash develops lexical terms such as 'transduction' (Kitchin & Dodge, 2011) to explore how the interface is mutually constituted through the encounter of various elements. However, in this context, transduction is less chaotic or improvised than in previous accounts (such as Simondon's (1992: 313) account of transduction in the formation of crystals). This is a sociomaterial way of thinking that acknowledges technical objects are designed with a purpose, even if they do not always perform that purpose perfectly in practice. The result is to see transduction as "a process by which objects in interfaces are organised by designers to produce particular qualities for other objects in that interface and for the people using the interface" (Ash, 2016: 28).

These transductions are part of the production of object and inter-object 'resolution' in the interface environment. Resolution refers to how easily a user can discern what an object in an interface is, how easy or difficult it is to engage that object, and how it relates to other parts of the interface. Critically, resolution is

designed *in*to interfaces to produce specific effects. For example, in respect to Orlikowski's (2007) study of the Blackberry, the notification light and mechanical keyboard have a high resolution for users, prompting a natural use and engagement, as well as a clear relationship to other elements of the interface (such as signalling a new email or text, or providing a way to input commands into the device). Meanwhile, despite being a unique selling point of the Blackberry at the time, the 'Encryption Key' that renders messages on Blackberries secure has a low resolution as users are unable to interact with it in a meaningful way.

This augmenting and management of resolution gives rise to the discussion of how interfaces give humans an orientation in time. Ash develops 'technicity' to respond to this as a 'durable fixing of the now', wherein objects come to shape the human perception of time. However, this is not an innocent process, and just as clocks were key to shaping and organising time in industrial capitalism (see Thompson, 1967), digital technologies have become a conduit in shaping time under late capitalism (see Crary, 2014; Moore, 2018; Wajcman, 2016). Returning once again to Orlikowski's (2007: 1444) Blackberry, technicity provides a lexical tool for understanding how Blackberries - 'designed, configured, and engaged in practice" – shape and orient the specific experience of time for workers. The 'now' is created as a phenomenological experience between the memory of past events and the anticipation of future ones, as mediated by the Blackberry device. In Symon & Pritchard's (2015: 255) work, this relative construction of time performs a worker's identity to colleagues thanks to the high resolution of the notification light. Here, one worker notes that if you're at a meeting and your green notification light "is not flashing after about 10 minutes you're not very important". In this sense, technicity forms a "nowness that emerges from the relationship between the users' previous memory about how to use the thing [Blackberry] and the anticipation specific to what the thing is going to be used for [communicating regarding a work task]" (Ash, 2016: 64).

Taken together, the resolution and technicity of objects work to create an 'interface environment'. This environment envelops the user when engaged by them,

creating a localised opening of space and time that Ash (2016: 82) calls the 'interface envelope'. In this, the "emergent effect of a series of objects in an environment… [is] not used to cover, protect or immunise the user from its surrounding conditions, but rather to open up the very possibility for experiencing an environment at all." That is to say that the interface envelope itself is generative of the time and space in which activity takes place. By creating the space, time, and parameters of the interface, designers are better able to influence user action to desirable and profitable ends. In a traditional firm, this may mean making a device that can be marketed to organisations. In the gig-economy, this means developing technologies workers engage with in specific ways at work.

Ash (2016: 91) refers to the way interfaces actively modulate the user's orientation in time as "envelope power". When successful, envelope power facilitates a present that is "productively linked to particular pasts or futures that the designers want to push the player [or worker] towards or away from." In this sense, a study of envelope power opens-up our analytical lens to interrogate the methods by which interfaces generate and deploy agency in any given setting. Furthermore, envelope power is not homogenous, and Ash is careful to nuance envelope power from previous conceptualisations of psychopower (Stiegler, 2013) or neuropower (Neidich, 2010). Whilst these theories are already well trodden in psychology, media studies and social science approaches to technology, a key difference is the envelope's ability to create individualised subjects, rather than the attempts of psycho- and neuro- power to homogenise large groups and render them docile (via propaganda, mainstream media, etc). In this sense, envelopes still create what Debord (2010 [1971]) would call 'spectacle' however it is not a societal wide constructed reality. Rather it is uneven and heterogenous. This will come to be of particular significance when discussing the individualising impact of machine learning in gig-economy firms, and the way seemingly singular technologies (such as a work distribution application) can act to atomise workers, even those operating in the same local geographies.

Taken together, Ash's theorisations of the interface give us a set of lexical tools that provide the foundation for investigating what Suchman (2007) terms the 'hidden from view' to consider how objects are placed in relation to one another, who or what does the placing and why. This sociomaterial approach de-stabilises and de-naturalises the technical form, reclaiming it from 'technical objectivity' and highlighting the subjective decision making that has taken place. This in turn highlights the political economy of the technologies we are engaging; allowing us to see them in terms of the organisations in which they are deployed, and in terms of the socio-economic moment we are in (van Doorn & Badger, 2020). Ash (2016) does this in relation to videogames, however other studies highlight the significance of inter-object relations in the creation of both cultural phenomena and real material devices. For example, whilst not explicitly couched in terms of the interface envelope, Merchant's (2017) biography of the iPhone explores the whole device through investigations of various components (the touch screen, the app store, the battery, and others) and their conflicting genesis stories to unveil the 'toxic' organisational culture at the heart of Apple. Similarly, Mullaney's (2017) study of the Chinese Typewriter explores both the cultural imaginations – and rife orientalism – the device conjured in Western minds, in addition to the ways in which language and material possibility interact in bringing to the fore a 'real' Chinese typewriter[13]. At the heart of all the above examples, is an underlying desire to divine power and profit through active control of the interface being created.

Critical to the achievement of this, is the way interface envelopes engage time to create a sense of ongoing, constant present'ness'. It is at this point, that the phenomenological perception of the user and the post-phenomenological assemblage of the interface collide; wherein the latter is a key determining factor of the former. Here, a localised impression of temporality focuses the user's attention into "a very narrow temporal field of awareness" (Ash, 2016: 72) creating the

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[13] Mullaney shows how the cultural imaginary of the Chinese typewriter; based on characters rather than alpha-numerical systems of western languages was deployed to show the Chinese as 'backward'. In practice, developing a typewriter for the Chinese market required careful negotiation of inter-object relations, with different companies developing different designs in an effort to secure dominance in what they saw as an untapped marketplace.

conditions for a sense of 'flow' to emerge. Csikszentmihalyi (1975) coined 'flow' in his studies of work and play as a 'native category' because his informants (rock climbers, chess players, dancers, surgeons) used it to describe their own working lives. Couriers also use this term (Kidder, 2011) to describe their work when it is going well and my participants in the gig-economy used it at interview to elaborate on the feeling that technology, body, city, and bike are working in harmony. Whilst it may seem that flow emerges from order, it actually represents the deployment of experience to summon smooth interactions from the otherwise chaotic. A critical difference between a traditional bike messenger's flow, and that of a gig-economy rider is the imposition (and added variable) of the interface. Riders cultivate highly skilled and intuitive interactions with the technologies of their work to try and divine the most optimum output. The individualised nature of the work and people's interactions with the applications that facilitate it mean a diverse array of idiosyncratic practices have emerged.

For Ash (2016), gamers build strategies based on individualised and community knowledges of video game technologies such as the 'no-scope' technique[14]. This development of skill and experience in harmony with the interface's rules extends their individual perception of 'the now' to gain an in-game advantage against others whilst highlighting the dialogic role of the interface. In the gig economy, workers actively seek to understand the way technologies work and then behave in specific ways to encourage advantageous outcomes. Many studies of gig platform technologies focus most pressingly on the interface's domination and control of workers. To be clear, I do not deny that this is the case, and an evident and pressing concern. However, the particular way time and technology interrelate in the interface envelope provide a key analytical tool to understand how workers interpret their agency as distributed; to not only work *with* the technologies, but *through* them

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[14] This technique takes advantage of how videogames technically register shots and 'hits' in-game. In a first-person shooter, the game must be able to determine when a player has successfully shot a target or missed. They do this with a 'hit-box' system that players have been able to understand and then intuitively build strategies to take advantage of.

and in so doing restoring some agency to their labour and bringing these discussions into the debate.

3.5 Rhythmanalysis

Just as Ash discusses the sociotechnical modulation of the present as a continuous moment in his theorisations of the interface, Lefebvre constructs a 'theory of moments' in Rhythmanalysis. The theory is speculatively introduced in *The Production of Space* (1991 : 205) where he "envision[s] a sort of 'rhythm analysis'" which would address itself to the concrete reality of rhythms, and perhaps even to their use (or appropriation)" before fleshing these ideas out in his small but suggestive volume, *Rhythmanalysis*. Published posthumously in 1992 (in French, translated into English in 2004), it is widely considered the fourth volume in his *Critique of Everyday Life* and as such is enriched by his earlier research (Elden, 2004). Lefebvre (2004) broadly defines rhythmanalysis as the study of temporalities and their relation within wholes, taking a relational view of time and space, with a specific focus on how the two collide to create bodily experience under capitalism. Lefebvre (2004: 25) ambitiously claims that "everywhere there is an interaction between a place, a time, and an expenditure of energy, there is rhythm."

Similarly to the literature deployed throughout this review, it rejects cartesian dualisms, supplanting them with dialectic thinking and triadic analyses[15]. At its core, it looks at the relationships between time-space-energy and between different rhythms to encourage a relational process-becoming understanding of spatial encounter (à la Massey, 2005). This has been sympathetically embraced by contemporary scholars in a range of disciplines and adhered to with varying degrees of orthodoxy in each. This thesis follows Edensor's (2010: 1) approach, seeing rhythmanalysis as "a touchstone and point of embarkation" rather than a tight constraint; blending it with sociomateriality and interface studies throughout.

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[15] This marks his commitment to Marxist and Hegelian approaches that develop triads alongside Lefebvre's continued critique of dogmatism in Marxist philosophy and Stalinist communism (Lefebvre, 2009).

3.5.1 What is Rhythmanalysis?

Lefebvre does not hide his ambitions for rhythmanalysis, stating that it "proposes nothing less than to found a science, a new field of knowledge" (2004: 13). Key to this, is the separation out of rhythm's constituent parts - cyclical and linear time - so that we can make visible and analysable the relationships and interactions with one another. Here: "the cyclical originates in the cosmic, in nature: days, nights, seasons, the waves and tides of the sea, monthly cycles, etc. The linear would come from the social practice, therefore from human activity: the monotony of actions and movements, imposed structures." (ibid. 18)

This provides a distinctly topographical way of understanding experiential time. The qualitative, cyclical experience emerges from the realm of nature and is enmeshed and overwritten with the quantitative, linear time of society and capital. When these forces interact with a placed body, they generate the subjective experience of rhythm that we can begin to understand by using our own bodies as an instrument of measurement (see Chapter 4 for more on how I practised rhythmanalysis methodologically). This collision resonates with Massey's (2005: 140) conceptualisation of "place as event" occurring through interactions that take place when various trajectories come together into ephemeral and fleeting constellation. It is worth noting the critical departure that rhythmanalysis makes from pre-existing time-geographies (see Hägerstrand, 1970 or Mels, 2004 for critique) in its commitment to a Lefebvrian politics of space. That is to say that space and place are not simply empty containers for experience, but are active agents in *how* experience occurs (Dale, Kingma & Wasserman, 2020; Halford, 2004). This is reflected in the now well-established speed and mobilities literatures that highlight the uneven and unequal experiences of time and motion (Bissell & Fuller, 2011; Crang, 2001; Hubbard & Lilley, 2004; Spinney, 2006; Wajcman & Dodd, 2017).

Rhythmanalysis also provides an analytical toolkit for interrogating rhythms; sketching-out a vocabulary of rhythm that borrows heavily from musicology to

conceive of the world in a polyphonic, rather than monophonic manner. 'Polyrhythmia' refers to the multitude of rhythms and the effects they have in varying configurations. This begins with the complex array of rhythms present in our own body and extends outwards; cardio-vascular, circadian and dietary rhythms become the instrument through which other rhythms are experienced and measured. 'Eurhythmia' refers to multiple rhythms combining smoothly, whilst 'Arrhythmia' speaks to a discordance between rhythms. These can be defined as a state of health or illness respectively. The final, 'Isorhythmia' is mutually exclusive with eurhythmia and refers to the perfect equality of multiple rhythms. It is best represented for Lefebvre by an orchestra all playing under the guidance of a conductor's baton. Beyond these categories, Lefebvre appropriates the term 'dressage' from equestrianism to discuss the way rhythm is entrained into the body, ossifying as the result of repetition over time. This resonates closely with Symon & Pritchard's (2015) discussion of 'tuning' to new sociomaterial realities in an organisation, as iterative practice becomes rendered normal and expected through replication.

3.5.2 Analysing Rhythm

The study of rhythm – if not explicitly *rhythmanalysis* - has been applied to a broad range of intellectual study on the human experience. Georges Perec (a student of Lefebvre) imbibes his wiring with the rhythmic through the manipulation of language. For example, in *An Attempt at Exhausting a Place in Paris*, Perec (2010: 1) attunes himself to the 'infra-ordinary' by listing his observations from a cafe at the Place Saint-Sulpice; extracting the patterned rhythms of the city to chart what happens when nothing happens apart from "the weather, people, cars, and clouds." Similarly, in *The Art of Asking Your Boss for A Raise* (2011) Perec writes experimentally as if he *is* an algorithm, embodying the rhythms conjured by materialising technical decision making into office life. The text uses no punctuation, has no paragraphs and no chapters, but sprawls across 75 pages of unbroken prose and process.

Just as writers have developed methods to explore rhythm and – by extension – the interactions between place, time and the social that comprise it, academic studies have developed rhythmanalytical approaches to understand our experiences as they occur in space. For example, Rickly (2017: 224) reflects on how mobility and rhythm enfold into one another to create "embodied mobile practices [that] engage participants in intense interactions with place"; extending already emergent discussions of mobility and rhythm (Edensor & Holloway, 2008; Conlon, 2010; Hornsey, 2010; and DeLeyser, 2010). These are of great significance when investigating the lived experiences of bike messengers who move through the city at speed, forming relationships with it as they go (Kugelmass, 1981). By attuning ourselves to sensing rhythm, we can begin to look at the affects rhythms have for those wrapped-up in them. Wunderlich's (2010: 56) explorations of 'place-rhythms' and 'place temporality' illustrate the "patterned practices and events that one unconsciously engages with in everyday urban spaces that synchronise to form a particular tempo."

Nash (2018: 1) uses walking to develop an 'organisational rhythmanalysis' of the City of London whereby "the empirical setting of The City illustrates the relationship between meaning and materiality and the ways in which rhythms contribute to how City workers experience and make sense of their workplace". Once again, this is relevant when considering how places and their rhythms may construct the lived experiences of work for gig economy couriers whose workplace is the city itself. If the 'feel' of a city's rhythms is strong enough to impact the organisational cultures of the offices located there, then the way the city is very directly *felt* by couriers must have significant impacts on their experiences too.

To this end, cycling has enjoyed much attention from rhythmanalysis, something of particular interest to this thesis, given the role cycling has in the labour process of gig work being studied. Spinney's (2006) study of ascending Mont Ventoux positions rhythm front and centre in the way cyclists comprehend their craft through the hybrid-rhythms that emerge at the intersection of body and bike as intimate forms of entrained knowing that lead to one becoming an extension of the other.

Spinney (2010) builds on this to explore cyclists' negotiation of navigating complex urban worlds, an experience echoed throughout messengers' autobiographical accounts (see Chappell, 2016; Day, 2015; Kidder, 2011).

For Cook and Edensor (2017: 7) the immediacy of the environment and the cyclist's immanent abilities to deal with it are brought into sharp relief by darkness, highlighting the significance of sight, sound and touch in the encountering of a continuously emergent landscape where the headlights "shape his gaze" whilst the smell- and sound-scapes flesh out details of the unseen in the places being passed through. This multi-sensory nomadism – coming into and out of constellation with complex landscapes – similarly plays out in the working lives of bike messengers.

3.5.3 Rhythmanalysis: Changes to capitalism, changes to work?

For Crary (2014), the rhythms of the night-time are being disturbed by shifts towards a *24/7*, always on, form of capitalism. This has created a "time without time" facilitated by mobile technologies that allow for ceaseless production and consumption, regardless of what cyclical circadian bodily rhythms may be urging us to do. This collective, dubiously consensual, change to our diurnal lives affirms what Henriques et al. (2014: 14) see as the potential for the study of rhythm "as a pervasive force and a critical concept when it comes to mapping larger socio-political developments in modernity." Benjamin (2007: 175) goes one step further, linking rhythm in consumption, culture, and collective consciousness to declare "that which determines the rhythm of production on a conveyor belt is the basis of the rhythm of reception in the film." In short, that the culture industry primes us for a 'productive' life under capitalism[16] and creates the possibility for what Fisher (2009) terms *Capitalist Realism*; the sense that there is no alternative. This encourages us to turn to the emergent research on rhythms and work.

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[16] This argument is similarly well rehearsed by the Frankfurt School, such as in Marcuse's (2002 [1964])) landmark text *One Dimensional Man*, or Adorno's (1991) *Culture Industry.*

Whilst *Rhythmanalysis* emerges from Marxist thought[17], it is essential we also recognise how the practice of managerial capitalism (Duménil and Lévy, 2018) has long been attuned to rhythmic insights. Indeed, this is a crucial means of understanding some paradigm shifting moments in management theory and the emergent 'management as science' in the early 20th century. Attempts to capture and make knowable the rhythms and motions of workers were key to Frank Taylor's (2004 [1938]) scientific management, as observations of bodily movement were combined with the stopwatch to understand and render more efficient the performance of body and machine. Similarly, the Gilbreths' (Frank Gilbreth, 1974 [1909]; 2008 [1911]; Frank & Lillian Gilbreth, 1973 [1919]; Lillian Gilbreth, 1927) use of photography, long-exposure 'chronocyclegraphy' and drawing was an essential element of their beautifully elaborate yet ruthlessly all-encompassing time and motion studies. Rhythm re-appears in the (Laban & Lawrence, 1947) 'Laban-Lawrence Industrial Rhythm', a collaboration between a German dancer-choreographer (Laban) and psychologist (Lawrence) that sought to improve bodily efficiency to enhance work satisfaction (Cresswell, 2006; Rothe, 2012); arguably a precursor to more contemporary forms of Human Resource Management (HRM). Later still, but with a reflective gaze, E.P. Thompson (1967) charts the shifting rhythms that followed the imposition of linear time onto the cyclical in early industrial capitalism through the lens of the clock. Following this argument, Braverman's (1974) *Labour and Monopoly Capital* and Burawoy's (1979) *Manufacturing Consent* similarly see the rhythmic assault of the assembly line at the heart of industrial capitalism's labour process as a key agent in regulating and motivating workers to persevere in their toil. As such, it becomes clear that, whilst not explicitly explored in these terms, rhythmanalysis is latent in management studies and organisational sociology's attempts to hold a (mostly) critical mirror up to our emergent worlds of work.

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[17] Marx's (1987 [1873]) infamous Chapter 10 of Capital, 'The Working Day' is replete with the cyclical and linear rhythms of early industrial life - Lefebvre laments Marxism's failure to comprehend the significance of the rhythms of labour in his third volume of *Critique of Everyday Life* (2014 [1981]).

The move towards post-industrial economies in the global North has led to a decline in rhythmic understandings of industrial process. However, rhythm is currently enjoying a (critical) revival with reference to the contemporary workplace. Snyder (2016) and Moore (2018) both analyse changes to work under 24/7 flexible capitalism, and the damaging impact it is having on our health (see also Fisher, 2009; Komolsky, 2018). Meanwhile Ocejo (2017) and Sennett (2009; 1998) lament the waning erosion of rhythm and skill in the restorative qualities of craft-based work. This view is nuanced by critical management scholars such as Paulsen (2011) whose study of workplace 'time appropriation' (spending time on private activity during paid work time) highlights the new avenues for vernacular resistance and refusal that emerge from the sociomaterial configurations of the digitally enabled office. Weeks (2011), Frayne (2015) and Hogan (2021) go further, arguing that the refusal of waged labour represents a key battleground for the reshaping of a life more in tune with our biological and social rhythms. Whilst the examples above showcase the prevalence of rhythm in generalised accounts of contemporary work, this thesis adds to the newly emergent literature deploying rhythmanalysis in direct relation to specific examples of our working lives. Two exemplary studies of the rhythms of marketplaces have been instrumental.

The first is Dawn Lyon's (2016) study of Billingsgate Fish Market. Over the course of this PhD, I have never lived further than a mile and a half away from Billingsgate, frequently passing within its olfactory range during my early morning cycles to work, or as I shuttled food (some of which had undoubtedly just been purchased there as ingredients that morning) across London's E14 postcode. Beyond this personal significance, Lyon's study offers a novel and intriguing window into the life of the market. Pairing audio and visual recordings, Lyon created a montage of time-lapse photography of a market 'day'. The rhythm builds from 1am as traders set-out their stands and arrange their produce. Buyers arrive from 3.30 before trading officially begins at 4am and a frenzy of activity crescendos and dies away as the clock at the opposite end of the hall reaches 9am, the official close of play. Next, is the take-down with stallholders filling paperwork, managing accounts and packing-up any unsold product. Finally, the cleaners make their entrance and exit riding

massive machines built to erase the lingering traces of the sea and sales. The work "evoke[s] Billingsgate with an 'affective force' that goes beyond representation" (Lyon, 2019: 52) and provided an example of *doing* rhythmanalysis in a workplace to highlight "how various rhythms and routines interrelate and interfere" (Simpson, 2012: 440) in the construction of the working day. Critically, it highlights the potentialities of rhythmanalysis to capture and render multiple scales of experience, from the longer rhythm of the working day, to the micro-rhythms of individual interactions and transactions in the soundscape that overlays the video.

Taking us from the fish market to the financial market, Borch et al. (2015) showcase the versatility of rhythmanalysis in two very different workplaces within a single sector. The authors compare and contrast the rhythms of 'open outcry' pit trading and technologically enabled High Frequency Trading (HFT) floors. Whilst one was a highly 'macho' space, of jostling bodies fighting for attention to close deals, the other represents a retreat into secrecy in the financial sector as companies fight for marginal gains with ever greater computing power. In the case of open outcry, Zaloom (2006: 135) highlights the pit as "the space and time of the market", providing the springboard for traders to get "in the zone" or "flow" of the market wherein they may "assimilate the natural rhythms of financial fluctuations" (*ibid*.: 135). The fear for traders is the potential for market rhythms to overpower bodily constraint, and so arrhythmia is enforced as an antidote that tempers the excitement of the marketplace that could cloud judgement (Borch et al., 2015). Rhythmanalysis' close attention to the interplay between architectures of spaces (i.e. the open, 100% visibility of the octagonal trading pit) and the multitude of rhythms that play out there is key.

Moving onto HFT, Borch et al. (2015: 1090) account for the spatial and material differences that set the context for this work:

"A HFT trading room often consists of 7–10 algorithmic trading desks. The desks are placed some distance from one another, with the traders encircled by multiple screens. The visibility created by the architecture of the [open

out-cry] pit described above is replaced by a machinic constellation, with traders facing their screens. Consequently, bodily proximity is replaced by trading screens, and by walls that delineate each trader's working space. No one yells or points at each other. Some traders have privacy filters on their screens to hide the source code."

Given that market decisions are automated by algorithms that take action quicker than the blink of an eye or the beat of a heart, and that the first instrument in the rhythmanalist's tool box is their own body, it is easy to assume that rhythmanalysis would be redundant. However, Borch et al.'s (2015: 1091) findings highlight how bodily and market rhythms are reconfigured through the sociomaterial assemblages of human and machine that constitute HFT. Here, "traders do not use their bodies as a market metronome, nor do they seek to merge eurhythmically with market rhythms. Instead, they *calibrate their bodily rhythms to their algorithms* (and thereby *indirectly* to markets)" (emphasis original). Borch et al. (2015) deploy the term 'Algo-Rhythms' to, like Orlikowski, open-up rhythmanalysis' vocabulary to the study of technology use. I follow Orlikowski and Scott (2008) and elide the terms, omitting the '-', to move this debate towards a flat ontology between human and social 'algorhythms'.

It is worthy of note, that Lefebvre's ideas, and particularly the positioning of the body as a research tool require a sustained engagement with feminist and intersectional critique. This is explored in direct relation to my own circumstance in the methodology chapter of this thesis. Dawn Lyon (2019: 11) excellently sums up the need for this critical attention, noting that "as a feminist sociologist... it has been a curious journey to spend so much time with the writings of a man who had little truck with feminist concerns" with a "patriarchal and heteronormative approach to household" and the women in them. However, there is hope in "that Lefebvre's project of thinking space and time together through rhythm can be deployed in a way that shakes off the sexism and other blind spots of its inception…His dual attention to the experience of embodiment in everyday life and the use of the body as a tool of research offers powerful directions for researchers doing rhythmanalysis today

wanting to recognize the gendered, classed and raced production of everyday life and knowledge about it." (*ibid*. 12). I extend these attempts to build a rhythmanalysis that is aware of itself, its omissions, and its situatedness.

The three frameworks outlined above (sociomateriality, the interface envelope and rhythmanalysis) provide the conceptual foundations upon which the following thesis is built. I have written about them together here as an attempt to highlight the ways in which they modify each other when deployed in practice. Sociomateriality attunes me to how the social and material are constitutively entangled in constructing gig work. Meanwhile, the interface envelope focuses attention onto the forces of associations and processes of relationality that construct the sociomaterial experience of work. By conceiving of envelopes as 'foldings' of space times, with inorganically placed objects that transduce one another, I am able to unpick some of the power relations that emerge, as well as analysing the modulation of time as an ongoing moment (which is itself a result of the sociomaterial assemblage). Finally, rhythmanalysis encourages understandings of how the sociomaterial interface is productive of a very specific experience for workers, as well as re-opening discussions of 'dressage' and 'tuning' the body as practices ossify over time to become expectations and norms. Furthermore, rhythmanalysis equips me to embrace the complexities of the urban environment and the role it plays in the everyday experience of gig work in London. Taken together, these three bodies of theory are greater than the sum of their parts, and as will become clear throughout, I consider their combination to be a novel contribution of this thesis. They also bore implications on my methodological approach, which is explored below in Chapter 4.

Chapter 4 – RESEARCHING WORK AT THE INTERFACE

"My life as a courier became a hymn to measurement" John Day *Cyclogeography* (2015: 17)

4.1 Introduction

I could never have anticipated that I would need to keep a journal by my bedside as I got into the saddle and logged-in for my first day of fieldwork. Flicking back through that journal's pages with the advantage of hindsight I can see my younger self wrestling with the capriciousness of the work I was doing being re-lived in my nightly hallucinations as the day's events slipped from the grasp of my aching body and mind. The juxtaposition could be no more clearly demonstrated than in two entries from October 2018. The first, entitled "feedback-loop-come-death-nightmare-megasequence" was a frequent visit to my slumber, as the day's near misses played out in hyper-real repeat. The second was untitled but recounted a wholly more pleasant experience, reflecting on the evening-sun piercing my sweaty, salt-encrusted shirt as I wound my way home at the end of a hard day's labour well done. Whilst dreams are no solid basis for analysis, they do clarify one thing about the research. That working in London's gig-economy is a complicated and - for me - mercurial affair; an interplay of unrivalled joy and strife that fills the pages of many narrative accounts of bike messenger work (see Chappell, 2016; Day, 2015; Sayarer, 2016). Only a robust, open-ended approach could suitably capture this complexity and (as I would later discover) plurality to paint a rich picture of the work.

Ethnographic methods were chosen as the best approach to address my interdisciplinarity and the field site's complexities. Hammersley and Atkinson (2007: 2) note that ethnography's development across and within various disciplines means it lacks "a standard well defined meaning" and has instead been "reinterpreted and recontextualised" to deal with particular circumstances. As such, I felt liberated to tailor and deploy methods from various traditions in attempting to understand the gig-economy. Inspiration was drawn from ethnographies of: complex urban phenomena, from Lynd & Lynd's (1929) Middletown, to Goffman's (2015) study of poverty in Philadelphia; workplace ethnographies, such as McMorran's (2012) study of corporeal knowledge making in Japanese hotel work, or Burawoy (1979) and Beynon's (1973) contributions to the ethnography of the factory floor. Others such as Goffman's (1961) asylum studies; and Tsing's (2017) object oriented multi-sited ethnography of the Matsutake mushroom were also important influences. Whilst their topics and disciplinary backgrounds may vary, central to all of these is a commitment to what Hammersley & Atkinson (2007: 231) outline as the basic tenants of ethnographic study:

"1. Not to jump to quick conclusions…;

2. Pay detailed attention to appearances…;

3. Seek to understand other people's views without treating what they say as either obviously true or obviously false;

4. Examine the circumstances in which people act, including much that they may not be aware of themselves, yet without losing sight of what they *do* attend to."

My hope was to take these principles at their most basic and develop a research design that would allow me "to witness an array of embodied and emotional practices as they are experienced and performed by those involved" and compliment these with my own experiences (Anderson & Jones, 2009: 300). This meant blending techniques and approaches that were held together by a strategy of observation and experience, followed by notation, synthesis, reduction, and amplification. As my research continued, Humphreys *et al.'s* (2003) reflections on seeing "ethnography as Jazz" began to resonate closely with my own experience. My hope was that through

immersion in this unfamiliar world, I could follow Van Maanen (1988: 118) by seeing the study as "more akin to learning to play a musical instrument than solving a puzzle… to appreciate the world in a different key".

This chapter discusses my various approaches; the rationale for their choice, how they played out in the field, and reflections on their efficacy. It begins by exploring my ethical approach to the field and the situated nature of knowledges made there. This highlights how I understand myself to be "of the data" (Butler, 1997: 933) and that, as such, it would be "not possible to write a text that does not bear the traces of the author" (Lincoln & Denzin, 1998: 143). It then returns to an epistemological positioning of the virtual and rhythmanalysis from a methodological perspective to discuss how opening-myself-up to rhythm influenced methodological decision making. The middle of this chapter will outline the research practices developed and deployed in three discrete (albeit overlapping) settings of: covert ethnography of courier work, interviews with workers, and an overt ethnography of the trade-union responsible for organising their riders. Whilst these will deal with inscription practices where necessary, a section on the sociomateriality of my smartphone and its implications for researching digital labour and inscription will close the chapter.

4.2 Situated Ethics – Situated Knowledges

The research for this thesis broadly splits into three key areas; a covert ethnography working as a gig economy rider, an overt ethnography in the trade-union that organises their workers, and interviews with other workers and union members. Put simply, covert research methods were chosen for two reasons. Firstly, they presented the only ethically viable option available to me. Secondly, they were exciting. Although a factor, this excitement came from more than a desire to 'go undercover'. Primarily, it was because I wanted to make thick (Geertz, 1973) and fruitful (Bittner, 1973) research that took a bottom-up, rather than top-down perspective of the worker's experience (Woodcock, 2019). Excitement came from the prospect of breaking down the ontological separation between researcher and researched and exploring what this meant for the knowledges produced. By entering

into the precarity of the working relationship, I hoped to engineer precarity *into* my own research design. I was forced to behave as a worker, not only because I needed the money to pay Masters study debts and make rent every month, but also because if research was to continue, I had to perform well enough to keep the job. I wanted this to become part of what Calvey (2008: 914) considers "a wider process of disruptive thinking… where one's normal status and privilege in the setting is removed", whilst giving sustained attention to the contradictions Haraway (1988) addresses when researching the subjected. Furthermore, I looked to shine a light onto the impossibilities of fully overt research in the gig-economy (it is simply impossible to remain truly overt with everybody in a workplace that is so fleeting, ephemeral and brings you into contact with so many different people), and as such, on how the embodied experiences of the researcher play an active part in shaping the knowledges produced.

This is why this ethics discussion synthesises Calvey's (2008) notions of 'situated' ethical decisions occurring in space and time, with Haraway's (1988: 583) 'situated knowledges' that argues "only partial perspective promises objective vision". In essence, my ethical decisions and the knowledges I have made exist in a state of symbiosis. This research, like *any* social research bears the imprints of its maker. I am "of the data" (Butler, 1997) and the data is of me. It therefore makes no claims to be an exhaustive account of the gig-economy or *the* authority on gig work. If my research has taught me one thing, it's that this is impossible; indeed, anything claiming to do so should be treated with suspicion. I hope it will become part of a canon of reporting that amplifies all sorts of heterogenous voices from around the world (such as van Doorn's Digital Labor project, and the Fairwork project that internationalise the scope of study thus far). I hope I am countered and affirmed as others who work in the gig economy report their experiences and that when taken together we will be able to have a lively, informed debate about these jobs as we creep towards what feels like an inevitably different future of work.

Whilst covert research of the past has received much needed critical attention - Humphreys' (1970) Tearoom Trade for example – there has also been a general

critique of covert work that outlines multiple objections to covert approaches; most notably an inability to secure informed consent, and the risk of engaging in deception (Homan, 1980; 1991). What follows is first, a discussion of ethical concerns and the 'Ethics Process', before discussions of a situated 'ethics *process'* and the way this bore out situated knowledges in the field). A reflexive discussion of my positionality will be explored as part of this.

4.2.1 Ethical concerns

To begin the ethics process I needed to bridge the gap between my lack of knowledge and early understandings of the field to foreshadow ethical concerns and put measures in place to address them. This included desk research of a range of sources, from academic material such as Rosenblat & Stark's (2016) work on Uber; to news media that showcased workers' perspectives, (BBC [Anonymous], 2016); and co-authored workplace accounts (Waters & Woodcock, 2017). It also included speaking to people I knew who had worked for the company, opening a discussion of ethical considerations with the trade-union, and looking in on public forums such as Reddit.[18]

The initial risks identified were: first, the non-disclosure of my work to Mercury Meals and Iris Delivery; second, the power relations arising from simultaneous ethnography conducted at the IWGB and interviewing workers, and third, the risk of participants becoming identifiable. The first issue was argued to be a 'non-issue', that by using the platforms' classification of couriers as 'independent contractors' rather than workers or employees, my access arrangements could not be with them, but with myself. To the best of my knowledge this is a novel ethical-legal approach to autoethnographic work in the gig economy. Furthermore, by making my activity known to the platforms, they may be able to alter my experience. Whilst this sounds far-fetched, it is critical to remember that Mercury and Iris' computing power is unknown, and platforms have individualised experiences to disguise the truth, such

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[18] Note: all of these forums were open to the public, not private.

as Uber's deployment of "Greyball" - a tool to algorithmically identify and evade state regulators in the US ride hail sector (Isaac, 2017). I did not want a personalised understanding of gig-work curated by management. I wanted an authentic experience and as such, overt entry to the platform was not an option.

In response to the second concern, I maintained transparency with interview participants through the informed consent form and the participant information sheet (Appendix A), making it clear that I will not exchange information between the two parties. This meant riders could feel safe in the knowledge that I was protecting their identity and generating a space to talk honestly, without being influenced by my own voluntary ethnographic position in the IWGB. Similarly, it meant that the IWGB could speak to me freely about the ways they organise without fear that I will disclose information they are keeping secret. Finally, this helped alleviate anxieties riders may have that what they disclose to me at interview will have a negative impact on their standing within the union. Participants were also able to withdraw at any time, and I made this clear in both supporting documents and throughout research.

The third concern, that participants may become identifiable was a perennial risk throughout the research and one that I sought to manage actively through ethical research design. Given the volume of granular data each platform held on individual riders, I chose not to record payments or GPS maps from participants as data, for concern that the platforms could access this if published and tri-angulate it against their own records to identify riders that collaborated with me. By working covertly, I created my own GPS, payment, and other work data for publication in the thesis, so only my personal work data will be presented, and therefore it is only I who am risking my Supplier Agreement being terminated. I anonymised participants throughout the research process, using pseudonyms in my field notes, analysis, and presentation. To protect the identity of my participants from other riders, I required that we meet for interviews at cafes outside of their working 'zone' (the area in which a rider works and will be more recognisable by colleagues). I used customer facing applications to ensure meeting places were not serviced by the platforms being

studied. This was to reduce the risk of another rider coming in to collect an order who may recognise them.

The final research design and full ethical justification was sent off for ethical review at the college. Following the submission of full ethical assessment paperwork, the review process took months, and considered work contracts from Mercury Meals sent to external legal counsel for advice. The primary concern was that "this activity may contravene any employment contact and may lead to action being brought against the student or College", rather than the significant ethical considerations that needed to be taken into account - such as protecting the identity of workers who participated in the study. Ultimately, my supervisors were required to attend a meeting - that I was denied entry to - to discuss the research. It was decided that responsibility was "seen to be held by the student personally and not the College" in the event of collateral damage from litigation by the platform. In short, the message was loud and clear. "Adam, you can do this research, but if there are any legal ramifications, you're on your own" (Field Diary April, 2018). This institutional support without support felt like a massive blow, given the inequalities in power and access to legal expertise between myself and the platforms in question. Crucially though, it allowed the research to go ahead under close ethical observation from supervisors.[19]

4.2.2 Ethics process

Whilst pre-emptive and precautionary measures were developed in advance, they could never be fully robust responses to the challenges the field presented. The innate complexity of the workplace rendered it impossible to pre-empt every concern and it is impractical to resubmit ethical considerations to committee every time they arise – just as it was impractical to call or email to a supervisor to check before acting. In a working environment that is fast and fleeting, where a researcher is working alone, decisions would need to be made 'on-the-fly', so being informed and prepared was essential. Part of this was done prior to entry, through attendance

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[19] I outline an extended critique of the college's position regarding ethics and access to studying the gig economy in Badger & Woodcock, 2019.

at training courses and workshops on field ethics; as well as through a consultation of seemingly scarce, yet rich literatures concerning covert study (for example, see; Festinger *et al.,* 1956 Goffman, 1961; Wallis, 1976; Thompson, 1988; Taylor, 1991; Fountain, 1993; Monaghan, 2002; Scheper-Hughes, 2004; Shulman, 2007; Shapiro, 2015). Whilst these studies cover a range of disciplines, (from sociology to geography, anthropology and management); as well as a range of field sites (from the KKK to organ traffickers) there was nothing that could provide a direct analogue onto gig-economy work.

It became clear that the only sustainable approach was to develop an understanding of what Calvey (2008: 912) terms the 'covert self' and the 'situated ethics' that play out in the field. This encourages a view of covert ethics as "contingent, dynamic, temporal, occasioned and situated…" wherein the researcher is "involved in a web of shifting and mixed connections, tactics, identities and motives (Lovatt and Purkis, 1996), which is deeply biographical (Roberts, 2000) and brings a new dimension to 'taking a side' (Becker, 1967)." As such, "the management of situated ethics is not only about adopting a theoretically reflexive attitude but also about a whole series of practical manoeuvres and tactics." (Calvey, 2008: 912).

For me, these practices were engaged in a series of ways. The first, was in developing a modulating, pluralised approach to covertness in the field. This allowed me to remain covert to the platforms I was studying, whilst attempting overt relationships with other riders and members of the workforce I trusted. As meetings were often fleeting (waiting for a meal in a restaurant or pulling up next to someone at a set of traffic lights) full disclosure at the outset was impossible. However, not wanting to cross the threshold from covert research into deception (Spicker, 2011), I was keen to make clear my intentions in whatever way possible. A frequent topic of conversation was what we did outside work, either for fun or as a primary/secondary occupation. This provided the opportunity to reveal my positionality to other riders. I ended-up with a three-tiered approach that went into varying depth. On first, or fleeting, encounter I would say "I work for the platforms but I'm also a post-grad student". If I had more time, or knew them better, I would elaborate to say "I do gig

work, but I also study gig economy work as a post-grad". With those I trusted or met on multiple occasions I would flip the narrative and reveal my full position: "I work in the gig economy as part of an ongoing PhD". None of these were lies, and allowed me to tactfully broach the nature of my position with workers when appropriate. It was most often met with confusion ('*why* would you want to waste your time studying this?!') occasionally consternation ('well that sounds like a waste of time, but good luck') and commonly with appreciation ('cool! Tell me more, what have you found?'). The story was given value and authenticity by the context of the encounter in which it was given. I was out there, working in the rain, using all the field-specific-lexis riders share, and clearly sharing some of the same woes and elations they were too. On most occasions it gave way to a mutual respect which was deeply appreciated by me for being accepted, and by them for being willing to give time to spreading awareness and hopefully improving working conditions.

I also had to confront challenging decisions about when to stop recording data - what van Maanen (1983) terms the 'moral fix'. To do this, I allowed for - and in fact actively encouraged - a broken, incomplete record to be made of my time spent working. This meant mentally 'turning off the tape' when discussing issues that could be problematic for participants and other workers I was observing, such as migration status and drug taking. By doing this, I could take note of the phenomena as present without registering any of the details, times or locations that might compromise a workers' safety. As such, if the 'worst case' legal scenario outlined above happened, and I was litigated against by Iris or Mercury Meals, the notes I have taken would have no personal details of the individuals in question.

This practice of selective inscription also took place regarding resistance efforts and specific trade-union strategies. As a result, there are things I have observed about how riders eke out a living by 'gaming' the system that will never be shared publicly. Instead, I choose to reflect on those strategies that I know the platforms are already aware of. For example, subsequent chapters discuss multi-apping strategies

deployed by workers. I feel safe in doing so, as it's a behaviour the platform already knows exists, and actively polices[20].

Commitment to the protection of worker strategies is an ethical one that stems from my political beliefs and observations. Whilst it would be easy to argue academics should remain abstracted from politics as they sit and observe from the ivory tower, I cannot see how this can be possible or true. Not only is ethnography inherently concerned with the internal-external tension that arises from the researcher's position, but on a human level it was just impossible for me. Attending the platforms' corporate events (as a member of the public) to hear from executives that boast strategies of 'efficiency', the reduction of labour costs, and the manipulation of regulatory environments; in addition to witnessing the enormous cash injection they receive from venture capitalists sat poorly with me. Particularly as it drew a sharp contrast with the couriers I met who were facing eviction despite working sixty hours a week, or even those who have been made homeless by changes instigated by the platform that led to significant losses in pay (Field & Forsey, 2018: 17). Meanwhile, academics present their findings to the ILO and governments across the globe in the form of white papers and policy recommendations that have the opportunity to shape the future of this work and the livelihoods of workers. As academics then, we are active participants in this moving playing field whether we like it or not. It is only our privileged position that means we can step away at any point.

4.2.3 Situating Knowledges

Whilst perhaps over-impassioned, this illustrates the way I understand politics and ethics as situated together in the field. Therefore, it is clear that decisions bore implications on the knowledges produced. By not passing information to management, I became trusted by workers which opened-up many doors. Similarly,

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[20] Both Iris and Mercury Meals have sent email correspondence outlining how it relates to their own contracts.

my research alignment with the union meant that for some riders who recognised me, I was offered more or less information as a result.

Whilst I could have passed information over to authorities and reported people that infringed rules or laws, this would have run against the grain of what I observed throughout the study; hard working couriers trying to survive precarity. People did not choose to break these laws and put themselves in danger, the declining rates of pay matched with work intensification made it a necessity. Following Haraway (1988: 583) I felt the need to remain "answerable for what we learn how to see" through a feminist approach that "is about limited location and situated knowledge, not about transcendence and splitting of subject and object". This meant accepting that there are no unmediated representations "in scientific accounts of bodies and machines; there are only highly specific visual possibilities, each with a wonderfully detailed, active, partial way of organising worlds" (*ibid.*: 583).

Given my interaction with a vulnerable workforce, this meant I needed to consider the "serious danger of romanticising and/or appropriating the vision of the less powerful while claiming to see from their positions" (*ibid.*: 584) and therefore my own positionality. For the sake of clarity, I am a working-class, white, cis-gendered man researching a diverse and often subjugated group. This meant that I shared a lot in common with some riders, whilst all I shared with others was working for the same platform. Whilst the spaces may have been the same, our sense of place within them may have been completely different. As such, this research does not - indeed cannot - speak fully to their experience; however, I hope future work can. Furthermore, my position as an academic researching this phenomenon allowed me to enjoy the greatest bits of the job myself and other colleagues shared, as well as taking a flogging from a dominant platform. In this regard I had a luxury not extended to many others; to play the role of the submissive. By metaphorically uttering the 'safe-word', I am free to withdraw from the uneven power dynamic of platform work, a disparity enforced by the sense of unfreedom others experience. That is why, in addition to my own work, I ethnographically observed and spoke to as many riders as I could to broaden findings. Most of the time we were on the same page, some of the time we

were not. I hope I have illustrated and amplified these situations in the following analysis chapters.

I hope this ethical position has allowed me to co-create a body of work that comprises "partial, locatable, critical knowledges, sustaining the possibility of webs of connections called solidarity in politics and shared conversations in epistemology" (Haraway, 1988: 584). All of the participants I have worked with in this study have shaped it, their invisible fingerprints lay all over its surface in ways only I can see with the perspective granted to me as author. It is however I, who has assembled and synthesised them; a power dynamic that is impossible to erase. The situated ethics and decision making I performed in the field shaped these relationships; and thus, the situated knowledges I produced. As the study advanced, these knowledges further informed my ethics, which continues to inform my perspective, in a cycle that is still ongoing.

4.3 Rhythmanalysis

Lefebvre's (2014) rhythmanalysis has not only provided conceptual framing for this thesis (see Chapter 3). Whilst blending theory and practice throughout the small work, *Rhythmanalysis* explicitly lays out exposition on rhythmanalytical methods. These have provided an epistemological steer in both the development and deployment of my methodologies; specifically, regarding positionality, outlook, and approach to the field (for more examples of how this is deployed, see: Edensor, 2010, 2016; Lyon, 2016, 2019; Simpson, 2008, 2012). Lefebvre (2004: 36) states that:

"To grasp and analyse rhythms, it is necessary to get outside them, but not completely… be it through illness or a technique. A certain exteriority enables the analytic intellect to function. However, to grasp a rhythm it is necessary to have been grasped by it; one must let oneself go, give oneself over, abandon oneself to its duration…to grasp this fleeting object, which is not exactly an object, it is therefore necessary to situate oneself simultaneously inside and outside. A balcony does the job admirably, in relation to the street, and it is to this putting

into perspective [of the street] that we owe the marvellous invention of balconies…"

To follow this advice, I needed to find my own 'balcony' from which to view the nature of work in London's gig-economy. Translating Lefebvre's instructions of studying one observable space (i.e. a street corner) into the highly mobile world of bike couriers was foundational to this methodological approach. My interpretation in working ethnographically at the field sites in question was to allow myself to be swept-up by these rhythms; punctuating this experience with various forms of transcription and critical reflection to bring about the outside/inside/between position that Lefebvre posits as crucial (this tension between inside and outside plays out more broadly in ethnographic research according to Hammersley & Atkinson, 2007). To facilitate this approach of oscillating between two perspectives, I also drew heavily on the work of de Certeau (1984: 92) who contrasted seeing the whole of New York from the 110th floor of the World Trade Centre where "one's body is no longer clasped by the streets", and going "down below" to witness how "the everyday has a certain strangeness that does not surface, or whose surface is only its upper limit, outlining itself against the visible". This allowed him to locate within this ensemble "the practices that are foreign to the 'geometrical' or 'geographical' space of visual, panoptic, or theoretical constructions" (ibid.: 93). From here the 'strategies' of the powerful, and the 'tactics' of the weak became apparent. Similarly, I am looking to understand how platforms organise work, with their coded and mapped strategic views of the city, and how workers deploy tactics to perform *for* the technologies in question.

My balcony was my mobile phone. It played the role of field-*site*, and the location of field-*work*, as I would oscillate between applications deployed in the undertaking of delivery work, and those of inscription for academic analysis. Careful use and 'mapping' of the phone space created a balcony space where I was able to let myself go to the rhythms of the work, and then with a few gestures get outside of them to a position of exteriority. By using the Notes app exclusively to record scratch notes and then expand on them, I was at once present in both the work of 'research' *and*

the work of a courier or union volunteer. A typical window onto this methodological practice would see me sat on a concrete block outside of the British Museum, wearing a Mercury Meals uniform, but writing in my Notes app about the exploits of the day so far whilst waiting for a new job to come in.

Whilst the research was not exclusively centred on rhythm, broad rhythmanalytical approaches allowed me to focus on specific aspects of the work - descending from the balcony to the street - without sacrificing the residual awareness of its rhythmic elements. Often, I would find myself unwittingly back at rhythmanalysis again via organic interactions with others. It became clear that workers are rhythmanalysts themselves, despite never describing it in these terms. They decipher the mix of London's complex culinary geographies, circadian, and dietary rhythms, and the algorithms that dictated their labour, memorising and internalising the traffic light patterns and adjusting their cadences accordingly.

Conversely, I found myself returning to the saddle after fieldwork had officially ended to rediscover its rhythmic elements. During long periods on the bike, I discovered what Day (2015: 17) meant when he said: "I found my bicycle had bled into my being, infecting me with its surfaces of leather and steel". Time spent off the bike has left me feeling asynchronous with my own field writings, persisting "only as a series of brief snap-shots, stills from a film that lay inert until animated again by the flicker of pedal and wheel" (*ibid.*: 18). To combat this, I occasionally get back on the bike and return to work; allowing myself to be re-captured by its rhythms to return to me to the basic tempos of city, labour, and algorithm; melding myself back to the bike, roads, and code that dictated my work flowing through the city. It frees my writers' block as the rhythms of writing and riding that became so enmeshed during fieldwork are given space to replay through my academic psyche, a topophilia of the pavement and the page.

4.4 Covert (auto)Ethnography

The principal methodological challenge was to find a way of researching the lived experiences, spaces and materialities of work in London's gig-economy. The problem was going beyond the well-funded PR campaigns from the platforms to access the precarious workforce carrying out the labour. Whilst the platforms claim to be 'open' and operating in the spirit of collaboration (a reputation propagated through a string of industry events around London's 'Silicon Roundabout' where they discuss their business strategy and seek synergistic opportunities for collaboration with others) the reality is starkly different. Binding non-disclosure agreements prevent central employees like programmers and marketeers openly discussing their work with outsiders for fear of litigation (Woodcock, 2019). IP and copyright protect their technologies from public discussions of their impacts or effects, and customer facing applications selectively fetishise specific elements of the labour process to give a myopic view to the consumer. This includes, for example, only showing a driver's location once they have the package and are on the way to your location rather than the hours of time idling whilst waiting for work, the difficulty of parking a bike, the traffic that must be fought through and survived, and the final payment systems that remunerate people for the work they do.

Following Harvey (1990b), the lived experiences of work are veiled behind the commodity form itself (which is the labour of delivery in this case), mirroring the same processes of industrial and post-industrial capitalism before. At times, this reflects what Cook & Crang (1996: 132) term "double commodity fetishism" which "on the one hand limits consumers' knowledge about the spatially distanced systems of provision through which food commodities come to us; but, on the other, and at the same time, also puts an increased emphasis on geographical knowledges about those widely sourced food commodities." The challenge then, was to not succumb to this double commodity fetish and the reified vision of the messenger it relies upon as someone whose knowledge of the city matches the chef's knowledge of other cuisines and cultures; providing labour in a 'free' and 'flexible' way. Instead, I needed to get under its skin – to lift the veil and investigate the lived experiences of work.

Covertness was necessary in avoiding the perennial risk to organisational ethnographers of being shown the 'highlights tour' by management, whilst the 'dirty' elements of work are avoided or skirted around. In the case of the gig-economy, this was particularly worrisome following the recent high-profile exposé of Uber's 'Greyballing' of regulator accounts. Furthermore, this approach would bring the added benefit of exposing me to other elements of the work, such as the opportunity to observe others, to build trusted contacts within the rider community, and to experience all the elements of the job that are necessary, but not solely concerned with the delivery of packages (such as 'onboarding' and the active communities that exist in these work cultures). By doing so, I hoped to follow Laurier's (2005) research on cafes to develop understandings of how workers not only work, but also how they *learn to work* in collaboration with (or in spite of) the technologies and spaces that demarcate their workplaces – in his case, the cafe and the espresso machine, in mine, the city, my bike, and the platforms' algorithms, applications. Whilst enlightening, this methodological strategy brought with it a range of further challenges, the responses to which are explored below.

4.4.1 Access Challenges

There was the very practical difficulty of gaining access to the field site. This required identity management prior to entry as I would be background checked as part of the application process by a company called Onfido whose reach into my personal online presence was unknown. What I did know at the time of applying to work for these platforms was that a leading product sold to platform companies was a 'risk report' pertaining to the identity of applicants[21]. As such, I entered a long process of digitally 'cleaning' my online profiles of evidence of previous engagements with academics and trade-unions critical of both platforms. This even required requesting friends and colleagues to delete old posts pertaining to this research. Once this was completed, I applied for the platforms, and was immediately put onto a waiting list as they were both over-subscribed. This defied my expectations; having

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[21] I had previously worked for a company that used Onfido's background checking service to screen staff, so knew it was extensive.

spoken to many workers who had signed up and got to work quickly while the platform was looking for staff. Iris Delivery offered me a job first, followed six-weeks later by Mercury Meals - who have since (in a court appearance) noted they have a waiting list of 35,000 riders in the UK alone. This ties in with the seasonality of work (as rider numbers increase and order volume decreases in the summer) meaning I was exposed to the same lag time other riders may experience as part of this work.

4.4.2 Health and Safety Risks

There is also the difficulty of managing physical risks. Bike messenger work is a dangerous profession, whether measured by death toll or injury. Although a different context, in the first half of 2017 a Chinese gig-economy courier was killed on average every two days in a fatal accident (Shepherd, 2017). Beyond the traffic, the work requires lone working at night with no ability to foresee where jobs may take you. Crime is a perennial threat, sadly symbolised by the rise of moped thefts, and the untimely death of Takieddine Boudhane, an Uber Eats and Deliveroo rider who was stabbed to death at work in Islington (Cuminskey, 2020). Whilst workers are expected to protect their own health and safety, this work needed to pass through the university's health and safety procedures; resulting in a highly detailed risk assessment outlining the perceived possible threats, and measures taken to mitigate these. Whilst this is not a realistic reflection of how workers asses risk, it did encourage contemplation on the dangers of the work.

4.4.3 Conceptual Challenges, maintaining plurality and diversity of experience:

Beyond immediate concerns regarding safety and access, there were empirical and conceptual challenges that required attention. To study food delivery work, analysis needed to look beyond the confines of the on-screen app toward developing a sociomaterial approach that took account of the assemblages of cars, restaurants, bikes, muscles, algorithms, traffic lights and other actants that need to be negotiated. Adams, Jones & Ellis (2015: 9) note this is a particular strength of autoethnographic

work, as long as researchers "acknowledge and accommodate mess and chaos, uncertainty and emotion" in their approach and analysis. My approach was a multi-modal one, designed to capture various data types to collate my observations for subsequent synthesis and analysis in larger ethnographic diary entries.

Whilst this research was limited to London for the most part (excluding two interview participants), I attempted to understand the experiences of work outside of my specific zones by varying my working routine. This opened my experience to how the geographies of each locality shape the work. The work changes with the restaurants, roads, traffic, and drop-off locations, so a shift spent in East Central is very different to a shift spent in West Central or Canary Wharf, creating a tapestry of experience rather than an homogenous one. Most riders would commonly work in a small handful of zones, getting to know them intimately and becoming more productive as they harness this knowledge to their advantage. As such, I conducted most of my work in East Central and West Central zones to try and replicate the dominant mode of practice. However, I also went to other locations such as Paddington, Brixton, Battersea, and Victoria to feel how the work changed by locale.

Furthermore, I needed to ensure that this research did not fall into the trap of totalising others' experiences of work with mine through an over dominance of my autoethnographic account. As such, I sought to put autoethnographic findings into direct dialogue with the solicited accounts of others through semi-structured interview, ethnographic conversation (Spradley, 2016) and participant observation. As I slowly let people in on my own motivations for being in the workplace (that I was a researcher) I began to solicit accounts from them regarding their working lives. This was particularly useful for participants who were happy to participate but were either unwilling or unable to commit to a formal interview. By carefully managing my covert status with other riders I was able to elicit responses from participants without needing to reveal myself to the platform in a community instant messaging chat group or public forum. However, this came at a physical and at times emotional cost for myself. Keeping up this image, as well as the multiple relationships with others based on a sliding scale of openness as to my motives was difficult to uphold. In this

respect, my experience echoes that of investigative journalist Rafferty who reflected on her (2004: 128) covert study of Glasgow's hostels for the homeless that "sustaining a role – that is remembering the details of a fabricated life – is not easy." Taking the time to actively manage this performance was essential for the maintenance of my own sanity in the field.

4.4.4. Identity Management

I had to carefully maintain a dual identity whilst in the field. This involved carefully managing my collegial identity (how I appeared to other workers) alongside managing my worker identity (how I appeared to the algorithmic architectures of the platform). My precarious position working for the platforms meant that poor performance could result in my contract being terminated and thus my fieldwork would be terminated too. This was a tiring and speculative affair as it required – just like other workers – second guessing what each platform's automated decision-making systems rewarded and punished and hoping to get it right.

The final challenge of recording and analysing a management system operated by a platform I could not speak to or interact with in a research capacity further influenced the methodological design. By undertaking covert research, I was poisoning the well with regards to speaking directly to the platform for fear that they would terminate my account, alter my experience of the work, or worse still, litigate against me. Whilst this initially appeared to be a disadvantage, it became clear that workers do not get this kind of feedback either, and as such became part of the authentic experience of the work itself. For example, knowing how the job allocation algorithm worked in advance, would have changed my perspective on – and practice of – the work itself, and therefore differentiated my experience from the lived experiences of the workers I was investigating.

4.5 Interviews

Interviews were conducted to engage with the workforce and broaden the findings that emerged through the covert autoethnography. I conducted in-depth semi-structured interviews with 10 participants recruited through fieldwork, returning to some for a follow-up interview where possible (see table 4.1 below). These interviews varied in length; however were rarely shorter than an hour long, whilst the longest was (exceptionally) in excess of four hours. The average interview was between 90 to 120 minutes in duration. They were held primarily in various London 'zones', with two participants in Brighton. In the early stages of fieldwork, I conducted 4 additional 'go-along' interviews with fellow unionised riders in an attempt to get an early insight into the field before beginning ethnography and interviewing in full. This functioned partially as a pilot study, and also as a way for me to get out and research through the uncertainty of a long and complicated ethical review process that existentially threatened the project (see Katz, 1999; Laurier, 2004 for passenger 'ride along' interviews; Spinney, 2006, for 'cycle along' interviews). In this case, it meant following couriers at work throughout the day and discussing what was happening when we had the chance. As such, I was granted entry into the working practices of other couriers as a reference point for later interviews and my own auto-ethnographic enquiry. There was no reward or remuneration for any participation in the study.

Name	Interview 1 Duration	Interview 2 Duration	Transport Type	Location	Gender
Tim	250mins	60mins	Pushbike	London	M
Jon	120mins	75mins	Pushbike	London	M
Monzil	90mins	90mins	Scooter	London	M
Gus	120mins	90mins	Pushbike	Brighton	M
Mya	60mins	45mins	Pushbike	London	F
Aron	75mins	N/A	Pushbike	London	M
Carson	180mins	N/A	Pushbike	Brighton	M
Felix	60mins	N/A	Pushbike	London	M
Emi	60mins	N/A	Pushbike	London	M

| Mac | 90mins | N/A | Pushbike | London | M |

Table 4.1 – Outline of Interview Participants

I initially planned to interview more participants, snowballing the sample up from interviews and building on connections made throughout the ethnographic fieldwork process. I hoped to interview a broad range of participants with various relationships to the trade-union (activists, members, non-members, opposed to the union, and unaware of its existence) as well as various demographics that undertake this work (particularly first-generation migrants from Brazil and the Indifreflectionan-subcontinent, and BAME workers supporting their families) to gather a broad range of perspectives on the work. Equally I looked to achieve a representative gender balance (difficult to estimate, and lower in this gig sector than in others such as cleaning and care work; see Hunt & Samman, 2019). I did not achieve this.

Traditionally, researchers may use a range of advertising or engagement meetings that are publicly advertised into the community being studied (Malbon, 2002; Montell, 1996). However, given the covert nature of ethnographic research, this public advertising was not a possibility as I could not risk alerting the platforms being studied to my presence and purpose for fear of being removed. Ideally, had the ethical review process been quicker, there would have been a discrete 'interview' stage after autoethnographic fieldwork to diffuse this tension. However, this was not possible[22]. As such, following a string of promising leads gone cold, I approached my established small world networks in the hope of gathering first contacts from which I could snowball my sample into other parts of the community.

Ultimately, all interviewees were also involved with the trade-union to some degree; either as members (active and inactive), or in elected positions of responsibility thus reflecting a particularly politicised perspective on the work that

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[22] Given the secrecy regarding total population of riders in different geographies, the precariousness of participants, and the need to keep the work secret, platform workers shared many elements of Heckathorn's (1997) 'Hidden Population', meaning there was no sampling strategy of best fit, or any accepted practice in the field thus far.

not all workers may share. It should also be noted that non-unionised riders were present in the study, and in discussions that occurred throughout; however, none agreed to a formal interview. This meant small discussions in breaks in the day, or over a late lunch break were frequent and did inform my analysis, but were captured in ethnographic conversations and observations rather than in formalised interview settings. They become present in the study through the anonymised reflections of discussions recorded in my field diary. It became clear that those who were most precarious were most resistant to inclusion in the study. Whilst I am aware of the debates playing out regarding remuneration for interview participation and the impact it may have on power dynamics (Head, 2009) I believe this would have made it possible for workers to be more available for interview.

Furthermore, I missed out on representative participation from the Brazilian, Pakistani, Indian, and Bengali workers. This was due to insurmountable language barriers as well as dividing lines among sub-communities of workers. Riders on motorbikes were often in separate communities to those on pushbikes (Cant, 2019a), which meant that social and workplace mixing was limited. Broadly, these riders worked full-time on motorbikes, whilst others worked a mix of part-time and full time on pushbikes. Nine-out-of-ten of my participants were pushbike couriers, whilst six out of ten were of British descent.

The riders I spoke to knew me from either the road, or the trade-union, so it was only natural that some of the knowledge I had gleaned through ethnography should inform the process; especially since riders had given me their trust and time in light of my experience of the work. This included shared lexis as well as a common set of experiences that were now hard-wired into my approach. It's a sad reality that most workers will have had a near death experience while doing this job. I did, and so did every one of my participants, with varying severity. Shared experiences like these united my participants and I, and was discussed at points during interview. By preparing for interviews with knowledge gleaned from the field and the status of enduring the work, I hoped to achieve a social rapport with riders that would lead to enhanced findings and richer discussions.

Managing my identity became a key strand in maximising the benefits of my accumulated knowledge in the interview setting. The courier community is a cautious one, and whilst not being as closed as traditional messenger communities (Kidder, 2011), they do not freely grant outsiders deep access. As such, I made sure to dress appropriately to garner the correct social rapport - including wearing a branded bag and coat. I also borrowed from messenger style to highlight that I took the job seriously and was not simply passing through the profession. If the interview was before a shift I was working, I would arrive appropriately in uniform to conduct the interview before heading to work.

However, this was a careful balance to strike; as one participant put it, "us [gig economy] riders have a certain look that's different, you know. Like the hardcore messengers with the tattoos on their legs, I always feel a bit inferior to them, like not proper, but we're a bit more normal dressed" [Tim Interview, January 2019]. Whilst tattooing myself was beyond what I was willing to do, it did highlight the risk of 'over-dressing' for interviews in an effort to seem too 'cool' or 'down with the couriers'. My aim then was to be approachable. I wore a helmet when I cycled, and often had some of the best value gear available; as well as shop bought bike parts, rather than custom frame sets or wheels. These small details cast me as a gig-worker, not a traditional messenger. Similarly, I balanced perceptions of knowledgeability with an informed naivety to encourage fuller responses and demonstrate to participants that they had valuable insights worth sharing; that they were filling gaps in my knowledge.

Interviews were held in safe and neutral locations, something Elwood and Martin (2000) found to be crucial in fostering security and openness for participants. With ethnographic interviewing the aim is often to have it take place in the workplace to allow people to feel at ease and generate free flowing conversation. Location is thus important in generating 'contextualised conversations' rather than stale interviews abstracted from the placed contexts to which they refer (Stage & Mattson, 2003). However, this becomes difficult when a workplace is distributed across urban space, and the precarious position of couriers made discretion a priority. As such, I selected

a range of locations that could be offered to participants based on their location that were neutral, and not serviced by the platforms under investigation. This reduced the likelihood of couriers being recognised speaking to a researcher.

4.5.1 The interview

All interviews began with trying to put the participant at ease, explaining the nature of the research and the upcoming interview. Relevant paperwork was signed regarding informed consent, and questions could be asked about the project. Participants were made aware that they could withdraw at any time and did not need to answer questions they were uncomfortable answering. I then began by asking simple, short questions to get conversation going and make people feel comfortable and in control of their responses. This would then give way to more in-depth questions as the interview progressed and finally, conversational prompts.

Participants were generally forthcoming in asking questions about me and my own work, particularly in the early stages of the interview as they were sounding out my position too (Cassell, 2005). I tried to steer these towards my experience of the work, rather than my research aims; to keep the atmosphere open, without risking the tailoring of responses to my perceived interests (see Oakley, 1981 on the social construction of the interview). As the interview progressed further, participants were free to go off on tangents and discuss the things that they found important from their perspective. I would refer only to steers to bring people onto track with my line of questioning when necessary, and abandoned chronology and allow the conversation to cover these points naturally, rather than forcing a structure onto the interview. This follows Spradley's (2016: 58) approach to the ethnographic interview as a speech event "that shares many features with friendly conversation" in which I would "slowly introduce new elements to assist informants to respond as informants". Whilst it is impossible to make these formal interviews not be interview scenarios, they did not need to feel like an interrogation in which I was trying to cultivate specific information; instead prioritising that participants were put at ease and able to express themselves. This is reflected in the length of the interviews, as well as in

direct quotes caught at the end of recordings "that wasn't like any interview I've ever had before, it was like a chat, that happened to be an interview" (Monzil Interview, October 2018). If there were topics left uncovered when it felt like the interview was at its natural end, I would then break this conversational style to ask if it was okay to briefly clarify a couple of things and use this as the opportunity for fact-finding enquiries. However, this was rare, as guided conversation was often enough to cover all bases. As the interview progressed, I spoke less and participants spoke more; going from short responses to long arguments.

I attempted to echo Oakley's (1981) feminist approach to interviewing. In elaborating on the chasm between theory and practice, brought into relief by her research on motherhood, she positions the interview as a two-way process and highlights that interviewers must approach participants as complex beings capable of understanding the spaces and phenomena they occupy, rather than data. The interview must therefore be understood as a social interaction.

I attempted to foster a conversational tone; something that is clear in the transcripts but cannot be reproduced in full here. This consideration of a participant's agency, as well as positioning them, rather than I, as the expert, was central in establishing this dynamic. In turn, this informed the social construction of the interview space; my own ethnographic experience meant I was relatively well versed in the work, and that as such we could oscillate between discussion as colleagues and as researcher and participant in an act of information exchange. However, they were always the vastly more experienced colleague speaking to a relative novice. This was actually aided by the lack of financial remuneration for interviews, meaning people were there of their own free will, and not because of a monetary incentive or pressure to perform. Whilst I wish I could have paid interviewees for their time; this was an impossibility that ultimately bore fruit in the interview dynamic. These participants have never been only data points for me or this research. They are seen throughout as fully formed people, with complex lives and perspectives that impact their experiences of the work as it plays out in space. Whilst this makes analysis tricky

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at times by rendering generalisation difficult; it presents a rich, pluralistic picture, wherein a wealth of experiences are living out simultaneously.

I used a voice recorder for all interviews with a mobile phone as a back-up recording device, acting as a useful prop to segue into discussion of interfaces and devices directly, at times, logging into the application to discuss the interface directly (van Doorn, 2013). I was worried that the materiality of the voice recorder would cause concern in the interview setting, but it slipped into the background once conversation began, and multiple riders remarked at the end of the interview as I was turning it off, that they had forgotten it was there.

Follow-up interviews were conducted where possible. Whilst all participants offered to hold second interviews this became an impossibility as they moved on from the profession, or in some cases, emigrated as political, social, and economic circumstances in the UK worsened. This is an unfortunate reality of any study into the experience of precarious groups of international workers in the gig-economy. In follow-up interviews that took place, I reviewed previous interview material as well as the broader corpus of transcripts to pinpoint the remaining gaps in the research. As a secondary benefit these also created a space for reflection on the time that had passed, and the rapid rate of change workers in the gig-economy experience. These second interviews were more informal than the first, which Malbon (2002) asserts is most likely a by-product of familiarity achieved through the first interview.

Due to the sensitivity of material and a lack of funds for transcription services, I transcribed all interviews myself. Whilst transcribing I used a secondary notebook to reflect on the interview as well as jotting prompts for follow-up questions and interviews with other participants. Finally, I began a stage of pre-analysis here, conceptually synthesising the interview material with my own understandings and thoughts. When returning to these transcripts for analysis I often play the recordings whilst reading as they submerge me within the interview space, providing para-textual elements of the interview as it took place.

4.6 Union Ethnography

Whilst inspired by the traditions of research engaged with organised resistance, activism and unionism (see Beynon, 1973; Burawoy, 1979; Cavendish, 1982; Pollert, 1981; Wood (2020) and Woodcock (2017)), I had no initial hope of engaging with the trade-union responsible for organising Mercury and Iris' workers; the Independent Workers Union of Great Britain (IWGB). This was in part because of a discourse surrounding a lack of organising for workers who were seen as 'unorganisable', as well as anxieties about being rejected by the union for myriad reasons (such as wishing to remain secretive, limiting access to non-workers, etc). Taken together these two forces moulded my focus towards a study of vernacular resistance practices that riders develop in isolation, or within their smaller rider communities. However, following a chance meeting with an IWGB member from another branch[23] at a demonstration for University of London workers fighting for better pay and conditions, I began talking and gradually got involved.

Initially I worked on the side-lines, turning-up to campaigns and demonstrations to show my support and solidarity, as well as getting to meet and engage with the workers who kept my place of work (Senate House Library) clean, safe, and operational. Over time I began discussing PhD research with members I'd meet (the long periods spent on freezing cold picket lines early in the morning left us turning to discussion of things beyond the struggle we were a part of), and it was suggested that I should consider working with them more after almost everyone I spoke to remarked an interest in the work. As a result, I arranged to meet with some union organisers and discuss what shape any potential research may take. Eventually, I ended-up volunteering with them for a day or two a week, being allowed to make ethnographic observations on the condition I respected the secrecy of the organisation. Ultimately, this access was serendipitous, the result of solidarity work beyond the PhD and the broader union campaigns at the time.

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[23] The IWGB operates a branch system, where each group of workers are organised into branches, rather than under the general union as a whole. I first met with workers from the University of London branch, however moved over to the Couriers and Logistics branch when working as a rider.

In the early stages of research and prior to being onboarded at either platform to work, I was unable to join the Couriers and Logistics Branch (CLB) as I was not yet a courier. I was, however, able to be a member of the University of London (UoL) branch which held academics and PhD students among their membership. This meant much of my time in the early months of ethnographic volunteering was spent bolstering UoL campaigns and providing logistical support where possible. Whilst this may not have always been the most directly relevant to the research, it did give me a broader perspective on some of the issues workers were facing. For example, whilst I was unable to get workers from Brazil or the Indian sub-continent to interview, I met with many LatinX, Indian, Bangladeshi, and other migrant workers during my time at the union. Here, I gained an understanding and respect for many of the extra difficulties they face working in the UK, and some of the broader dynamics of the LatinX and Asian communities living and working precariously in London. I picked-up bits of Spanish and Portuguese which were useful in the small discussions I had with workers out on the road throughout my ethnographic practice; not because I could speak enough to communicate, but because my effort to learn showed an interest and respect for these riders.

As time progressed and I began working for the platforms being studied I moved to the Couriers and Logistics Branch and began volunteering there. I informed everyone I could about the project to remain open and overt in my capacity in the union and the companies I was working for. Whilst there I helped publicise key events and stories, as well as facilitating interviews and other press engagements, helping host events and generally being a spare hand. As a grass-roots union, my role wasn't always clearly defined, but I was able to find ways to assist with the general effort. These required that I move between forums of union activity and be equally happy volunteering in a court room, a union office, or a picket line. Ultimately, it opened the boundaries of the research far beyond what I could imagine was possible without.

Furthermore, it granted a perspective of the trade-unions' broader strategies of organisation and resistance in the gig-economy, through attendance at meetings and discussion with union members on plans to move forward. However, in respect of this level of access, there are elements of the strategy that I will not disclose or discuss in this thesis or at publication. This is an ongoing and changing field, and as such I will only be analysing strategies that have already been deployed and are known by the platforms being studied. Whilst it is unlikely that this thesis will be widely read, it is important to remember that it will be accessible to the companies through online repositories. Therefore, this ethnography explores abstracted approaches the Union has taken rather than divulging secret strategic approaches.

A difficulty of this research was in managing my involvement with the Union, particularly as it came towards the end of my field research. It was clear to me that the IWGB was working hard to secure the best, most fitting rights and freedoms for the workers they represented, and that as such - having also seen how difficult this work can be - I wanted to be part of that effort where possible. However, as my time in the field came to an end I had to carefully manage my exit from this ethnography too. This meant stepping down from the roles I had acquired and trying to ensure that union processes were not disturbed by my departure. Whilst my responsibilities were limited, with a small staff, I didn't want to leave them disadvantaged in return for their generously allowing me to observe their operation. Similarly, I have made friends with Union members and officials, and winding these friendships down has been challenging. I will likely be involved with the Union in the future when this thesis is completed and will continue to support campaigns where I can. But even knowing this, the act of withdrawal was a difficult one. Reflecting critically on my time in the IWGB, I hope that it has not overly coloured my perspective on the state of the platforms being studied, and that I am still able to be critical of the union where necessary and appropriate.

4.7 Sociomaterialities of researching digital labour: reflections on the smartphone

To understand why methodological choices were made it is essential to position these approaches within broader movements in critical scholarship that flatten the ontological - and indeed false - separation of 'digital' and 'analogue' space. I follow Kinsley's (2014: 365) attempts to materialise the virtual by going "beyond the frictionless immateriality of 'virtual geographies' towards a greater attention to the material" in an effort to highlight the "conditions of contemporary digitally inflected spatial formations" (see also Beer, 2019; Bissell, 2020; 2021; Kitchin, 2011; Kitchin & Dodge, 2011; Moore, 2018a; Thrift, 1996). My methodological approaches were tailored to remain sensitive to these spatial configurations, building more broadly on a post-phenomenological understanding of space and the digital being driven by the scholars such as Ash *et al* (2018) and Simpson (2008; 2009).

Following Ash & Simpson (2016) the 'post' of post phenomenology emerges from an understanding that objects have an autonomous existence beyond their use by human beings (Harman, 2002; Meillassoux, 2008) and that we must reconsider previously held beliefs about our human alterity in relation to these objects (Rose, 2010; Wylie, 2009). This is methodologically in-keeping with the broader sociomaterial and interface literatures that undergird this thesis (see Orlikowski, 2007) in requiring us to become "attuned... to how the process of worlding takes shape, through circumstantial arrangements of bodies, machines, and devices" (McCormack, 2016: 11). Here, interfaces are integral "open[ing]-up the very possibility for experiencing an environment at all" (Ash, 2016: 82). By taking this philosophical position with regards to technology, the implication of methodological approaches to the types of data produced become clear.

The interfaces that form the field of study are overlapping and in many ways inseparable from the interfaces used to study them. Therefore, I sought to remain open and sensitive to the ways they open-up my body to the experience of the work *and* my empirical recordings of it. I have agency over them, and they have agency over me. This flat ontological perspective makes clear the role of the mobile phone as collaborator and interlocutor in the research process; shaping and re-shaping my experience and findings as it sets out the boundaries of possibility. As such, I follow

Beer (2019) in seeking to understand perceptions of technology at work, but also understanding how technologies become part of perception.

The nature of my ethnographic methods necessarily centred my phone in the process, rendering other forms of notetaking near impossible, thanks not least to the inclement weather conditions which made pen and paper practically useless – I gave-up after returning home one too many times with the day's research turned to pulp in my pockets. Whilst the need to maintain my field identity (van Maanen, 1991) made the phone the best choice for transcription. It smoothed over the social relations of taking field notes, illustrating Emerson et al.'s (1995, n.p.) assertion that "producing jottings is a social and interactional process". This continues the long tradition in ethnographic work utilising the materialities of the field site - such as Crang's (1994) use of the order pad for jotting notes whilst working as a waiter in his study of restaurant labour. Here, I bring pre-smartphone inscription practices into discussion with the ever-growing literatures around phone use in the field (see Collins *et al.*, 2017; Pink *et al.*, 2015; Shield, 2018; Wang, 2012) to outline the motivations and methods of my own note-taking praxis. Lacking funds, I used my personal devices (an iPhone 6, and subsequently an iPhone SE) for research rather than buying a dedicated phone. In the remainder of this section, I make reference to the phone as field*site* and field*work*. Field*site* refers specifically to the work of food delivery. Field*work* refers to the methodologies I used and the labour of research.

As both field*site* and field*work* became manifest through the same phone, any theoretical positioning of the phone in relation to the field*site* has implications on approaches to the mobile phone in field*work*. It is therefore critical to remember I understood the device to be engaged in a sociomaterial 'mangle' (Pickering, 1995; Symon & Pritchard, 2015), and that as such it was "designed, configured, and engaged in [the] practice" of field*work* and field*site* (Orlikowski, 2007: 1444). By using the phone for both functions of research, its faculties are deployed in a specific assemblage, synthesising the compositions of objects that respectively made-up my field*site* and field*work*.

This required understanding the phone as an assemblage of technical objects (apps, GPS tracking, 4G networks, customer and restaurant applications, labour distribution algorithms, cameras, etc.) coming into constellation with the 'transductions' (Kitchin & Dodge, 2011) that occur through them as central to the research. The phone not only opens-up my body to the experience of the work and my empirical recordings of it, but it does so in very particular ways. I have agency over it, and it has agency over me. This flat ontological perspective makes clear the role of the mobile phone as collaborator and interlocutor in the research process. Shaping and re-shaping my experience and findings as its deployment as field*site* and field*work* overlapped throughout.

This proximity created interruptions and interferences between the two, whilst simultaneously granting a closeness that encouraged inscription to follow the contours of platform work; seizing opportune moments in between jobs to capture data and expanding on this when I had the time. Not having to swap between devices liberated me from the distracting labour of trying to record everything and instead allowed me to concentrate directly on the work, reducing the time spent pulling-out of an authentic experience to take notes.

During the early stages of research I found this total elision of *-site* and *-work* too close, with each interfering with the other in unhelpful ways on a phone that was becoming difficult to navigate. In response, I 'mapped' the phone by spatially arranging apps dependent on their function (see figure 4.2). Whilst taxonomic decisions were often clear, there were apps that transgressed this boundary, for which I made decisions contextualised by my research practice. For example, Strava is used by couriers and researchers alike to track movements and fitted comfortably into both folders. I put it under field*work* as this was the primary way I was using it.
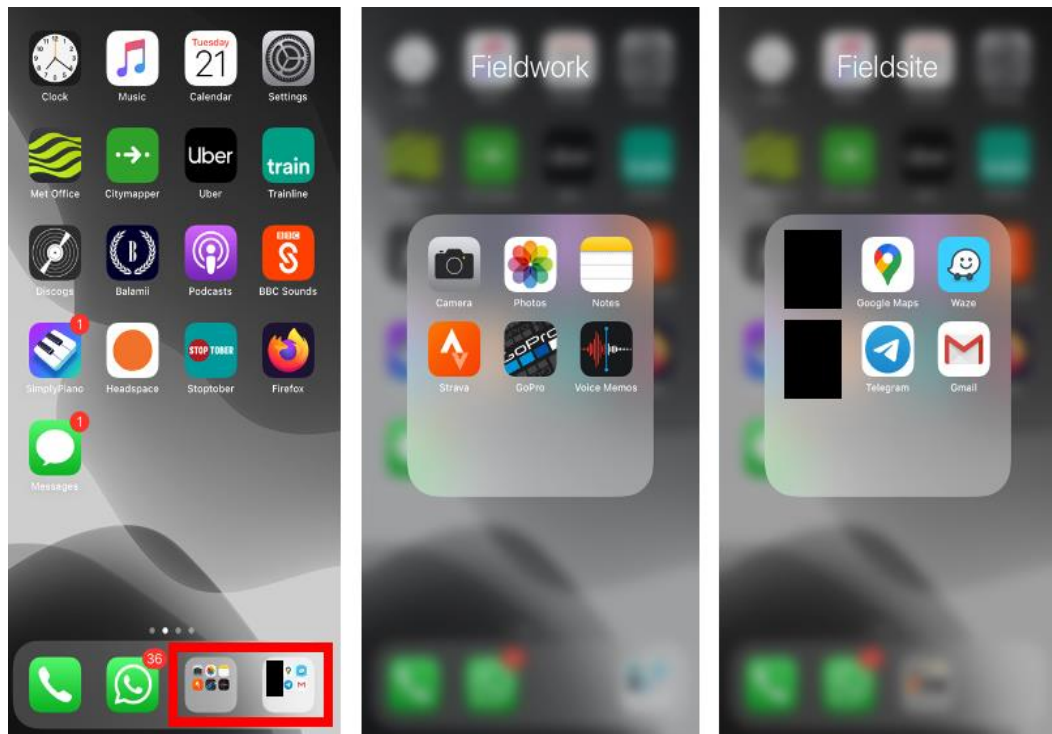
Figure 4.2 Organisation of applications in iPhone. The left pane shows their placement for ease of access on the home page, the middle and right show the fieldwork and fieldsite folders respectively. Redactions are to maintain the anonymity of Mercury Meals and Iris Delivery.

Once mapped, I could return to the 'home' screen and select relevant apps from field- *site* or -*work*. I found this would fall into cyclical rhythms of app use at particular times. For example, in the early mornings I would narrate voice notes, before switching to written notes over lunch. On an iPhone, these apps collate next to each other in the 'multi-tasking manager' (accessed with two presses of the home button) meaning I could switch effortlessly between them without having to close and re-start them. Reducing 'friction' (see Ash, et al., 2018) when traversing the interface encourages seamless movement, making quick jottings possible without withdrawing from the experience of work.

This dynamic functioned as a palimpsest of vertically stacked layers, each interacting with one another as I went about my day. Some applications, such as Strava, would fall naturally to the background whilst other apps jostled in the foreground. Drawing on Goffman's (1990 [1959]) work on the *Presentation of the Self*, the front of house was the field*site*'s apps, specifically those operated by the

delivery platforms that surveilled my activity and analysed my performance. Performing badly risked my contract being terminated and ending fieldwork so to them, I performed the role of diligent food courier. Meanwhile back of house in the field*work*, I performed the role of researcher, taking notes that felt liberated by a lack of technical surveillance on the behaviour happening out front.

During busy times I would only turn to the field*work* applications fleetingly, focusing my attention on the field*site*. This would pivot during quiet periods, logging out of labour apps and focusing on research and reflections, summoning the field*work* apps to the front. Continuing to hold-up both of these working and researching 'selves' is physically and mentally tiring. The mobile made this easier in places by reducing the friction of moving between the two, however made it more difficult in others as I carefully managed my presentation towards each in a confined space. The smartphone being a two-way device, with the surveillance capabilities of the platform largely unknown, I felt a continuing sense of precarity and immense pressure to keep up the 'act' of being a courier not a researcher. The rest of this thesis will explore that experience of being a courier. The remainder of this chapter focuses on specific inscription practices – facilitated by the sociomaterial entanglements of the smartphone in the field – to record observations. It is split into various subsections that each focus on a particular app, and its methodological deployment.

4.7.1 Notes

The notes app was the central point for ethnographic recording practice; the skeleton onto which other multi-modal findings were hung. Textual notes were a key component of this, and as Clifford (1990: 52) suggests, they constituted "a raw, or partly cooked, descriptive database for later generalisation, synthesis, and theoretical elaboration." As a delivery rider, my labour was tied to the culinary desires and circadian rhythms of customers, and the opening times of restaurants. This meant lunch and dinner were busy, with very little time to record field notes, whilst the start and middle of the day was quiet, giving me time to catch-up. To

combat the risk of reflections focusing disproportionately on the ennuyeux of 1.30pm to 5pm, at the expense of details regarding intense work, I deployed a "distinctive set of practices" that fit writing around the "contours and constraints of the work" (Emerson, et al. 1995: n.p.) using notes differently at different times. Responding to Hammersley & Atkinson's (2007: 156) assertion that "memory alone is an inadequate basis for subsequent analysis" I recorded as little as a "single word… enough to 'trip off' a string of images that afford substantial reconstruction of the observed scene" (Schatzman & Strauss, 1973: 95) when too busy. Like Crang (1994: 676), I jotted "single word 'scratch-notes' and elaborate on them at the end of the shift". This practice of recording trip-offs for later expansion became a key strand of my inscription practice across various mediums.

Just as Crang's (1994) marginalia was made possible by the enrolment of the order pad into the labour process, it was the enrolment of the smartphone into the gig work labour process that created this opportunity for me through its omnipresence on my handlebars. Similarly, phone use blends in far easier than a pen and paper (van Doorn, 2013); disguising taking notes as checking for updates on a job, or simply idly passing time while waiting for an order. There were however moments of friction too. Just like Burns (2000: 22) I "developed a system of short-hand notation and abbreviations for commonly used terms" such as PU (pick-up). Initially, my phone auto-corrected these to 'Put', 'Oh' and 'Or' depending on context, resulting in much confusion when it came to subsequent expansion or write-up. However, once I added to my phone's dictionary it stopped. In this sense, the lexis my phone permitted as 'good' English changed, following my own thoughts and practice in the field.

4.7.2 Voice Memos

I used Voice Memos as a voice recorder to verbally note my thoughts, feelings, and reflections in the field and as a personal diary (Garrett & Hawkins, 2014; Hammersley & Atkinson, 2007; Mazanderani, 2017; Pink, 2008). The particular materialities of the phone (including headphones with an in-line mic), and its

enrolment into the labour process make it preferable to a traditional recorder in this context. Not only is it immediately proximate to the field*site*, it is also able to run 'in the background' with work apps 'in the foreground' or whilst reviewing other empirical data in periods of rest. I deployed it in two primary ways.

Firstly, 'in situ' either between jobs, or during the natural lull in the working day. Voice Memos became particularly useful when wanting to reflect substantially on a thought, allowing me to explore more verbally than I would be able to type onto a small screen. They also captured (intentionally or otherwise) the soundscapes in which I would rest and reflect. Any study of work in the city naturally becomes enrolled in its rhythms and soundscapes (see Cook & Edensor, 2014; Lyon, 2016; 2018; and Nash, 2018) with "sonic data" providing a visceral link to the field (Yelmi, 2016: 310). These sounds pull me back into the places I captured them in, rooting me in the rich complexities that escape the remit of textual accounts. Even now, when I listen back to them two years on I remember being stood in Hatton Garden, Brixton, Shoreditch, the West End, or The City, each with their own distinctive sonic profiles. The danger is that I mis-remember them, so bringing them into concert with other forms of notation are critical.

Secondly, I would use voice memos when on the move, deploying headphones with an inline mic to make sure it picked-up my voice and not just the sounds of the wind. I often did this on the job, recording on a quiet patch of road or when waiting at a red light. It meant that my voice memos followed the flow of the work; speaking at length during easy bits, and drifting off into silence mid-sentence when concentration was necessary. These silences highlight the various mental demands the work presents. Again, it captured soundscapes of work, but this time in transit. Recordings are punctuated by the roaring of lorry engines as they race between traffic lights, the sound of sirens reaching a crescendo and fading away, of winds funnelled through the gap between buses, of building sites, of shoes clipping into pedals, and of offensive remarks uttered by cabbies. Like van Doorn (2013: 389) they "return me to their sociomaterial settings" stretching forward in time from the moment of capture and pulling my desk-bound body back into movement. In a

broader sense, voice notes actively engaged my researching self with understandings that ethnographers cannot write themselves out of their ethnographic data (see Denzin, 1989; Oakley, 1981).

By privileging voice, spoken and captured within the context of the work being done, the medium and approach applied de-centre traditional research forms that come with the authority of the written word. These soundscapes and my voice present these knowledges as deeply situated (Haraway, 1988: 583) "embodied knowledges" as opposed to the "various forms of unlocatable, and so irresponsible, knowledge claims" textual authority present. I return to them regularly, as they "speak-back" and continue to elucidate the "conscious and unconscious, self-censorship we impose when relying solely on a textual rendering of experience" (Mazanderani, 2017: 80).

4.7.3 Visual I - Camera & Photos

Visual methods also captured the more-than-textual. When taking ethnographic photographs - whether subconsciously or otherwise - I composed them to capture the experience I was aiming to record. With an iPhone, much of the technical labour is now automated and digitised - such as setting the exposure, ISO, shutter speed, etc. but the moment of capture, and the angles chosen are just one option picked by the ethnographer from an infinite number of possibilities (see Barthes, 2000; Pink, 2011; Sontag, 2019 [1971]) to capture what is desired. I mainly used the camera to take photographs documenting what was happening when I was unable to take notes or felt they were unable to capture what I was trying to illustrate.

The specific sociomaterial affordances of the iPhone allowed me to instantly review and 'mark-up' the images I had taken, treating them like a surface for inscribing other notes and information, such as arrows, lines, and words. Returning to Schatzman & Strauss (1973) this meant I could immediately add contextual information.

Without the annotations, Figure 4.3 (below) would be a picture of some scaffolding on a nondescript London street. However, immediately after taking the photograph I marked it up to illustrate to my future self what was intended. When it came to reviewing this the mark-up served as a 'trip-off' - in this case, as evidence of hostile architecture - to focus attention on the blocks around the scaffolding preventing anyone from locking-up their bike close to the restaurant, rather than on the passers-by or other elements.

Figure 4.3: Marked-up image with a black circle to indicate the primary focus of the picture for subsequent write-up.

I also used the camera at the end of a shift if I was too tired to type and wanted to capture the exhaustion I was feeling audio-visually by recording video diary entries. Whilst none of the videos made the final published work, I would review the footage as it re-ignited a sense of exhaustion - vividly reminding me of the feelings work engendered. Similarly, when recording using an iPhone's front facing, or 'selfie',

camera, I was presented with an image of myself staring straight back at me, encouraging reflexivity.

4.7.4 Visual II - Screengrabs//Recordings

Whilst the iPhone's cameras were used to capture images 'outside' of the phone, 'screen grabs' captured what was on the phone screen. Capturing still screengrabs preserves the otherwise ephemeral moments and interactions with field*site* apps. Requiring only one gesture (a simultaneous press of two buttons) images are saved directly in Photos without disturbing the app currently in use. This meant workflow went uninterrupted by moments of data capture, featuring as a digital shorthand that could be edited later - similarly to images above.

Video screen recordings were also used to expand this focus by facilitating reflection on how the field*site* changed whilst I was working and cycling through the city - as I had to keep my eyes on the road, and not on the app most of the time. In this sense the phone observed and captured things I was unable to. Whilst fieldwork apps were used 'in the background' throughout research, screen recording simply recorded the action as it happened at the screen's surface. By leaving the sound on, I created an audio-visual artefact that, whilst only displaying the screen, does so within the soundscapes of which the screen was present. Attempts to capture these elements sought to de-centre the role of platform technologies by putting them into relief against the rest of the work through soundscapes of the city, traffic, restaurants and more.

4.7.5 Mobile Mapping - Strava

Just as screen grabs lend permanency to the ephemeral traces of gig-work, so too did the use of location tracking services. Whilst Mercury Meals and Iris Delivery's proprietary technologies continually tracked and stored my movements, I had no access to this data set. Given movement through space is an integral feature of the work, I sought to ensure I would have a copy. I chose Strava for the task, repurposing

it from its target market of fitness tracking, and harnessing its geolocational systems to keep a record of my movements. This crystallised movements into 'routes' I could return to when writing-up diary entries and subsequent analysis. The interactive map Strava generated allowed me to retrace my steps, 'tripping-off' thoughts and memories along the way. These 2D maps inspired 3D memories of my working day which clung to my tired limbs after the work was done. Beyond the scale of the individual shift, these maps offer a 'zoomed-out' point of comparison for the work. By looking at them as a corpus of delivery labour over time, patterns emerged that were not tangibly perceptible on a day-to-day basis - such as the effect of seasonality, proximity to pay day, and climatic conditions.

4.8 Synthesis

The rich multi-modality of this data must be balanced against the risk of multi-faceted data streams becoming unmanageable and disjointed if not properly attended to. Whilst recordings may all be made at a similar time on a singular device, without bringing them together at a later stage they remain detached and spread across the phone and cloud storage; linked only by the chronology of their timestamps. To harness their full potential, mixed empirics like these must be synthesised together to create a whole picture, rather than a loose assemblage of objects and text. I borrowed my approach from Latour's (1999: 36) reflection on the philosophy of knowledge making, understanding academic work as a process of 'transformation'. Specifically, he notes the point of research is not to simply recreate the field*site*, but to inscribe it in such a way that makes it fit for future analysis: "What would be the point of transporting the whole forest here [back to the lab]? One would get lost in it…" Instead, by selecting samples and putting them together the field site "becomes a table chart, the table chart becomes a cabinet, the cabinet becomes a concept". The objective of this research is to make academic concepts that shape the field. Not simply recreate the field on the page.

As such, empirical material needed to be brought together, reducing unnecessary repetition (which became more frequent as saturation was reached), and building on

that which addresses this thesis' key concerns. To do this, I returned to the notes application on my iPhone. The app is built to deal with a wide range of inputs from other applications, including screen grabs, images, maps, and audio recordings. The scratch notes that I had put down throughout the day became trip offs for the filling out of more comprehensive ethnographic field-diary entries. By writing them into a fuller text, re-enforced directly with the data in its original form in a note, I compiled a rich set of findings for subsequent analysis. Even looking back at them now, they are capable of transporting me back to the times and spaces in which they occurred, re-embedding me in the research. This process of reduction and amplification allowed for this otherwise disparate assemblage of empirics to come together into a whole that ultimately constituted more than its constituent parts:

"Stage by stage [in the transformation] we lost locality, particularity, materiality, multiplicity, and continuity, such that, in the end, there was scarcely anything left but a few leaves of paper… but at each stage we have not only reduced, we have also gained or regained since, with the same work of re-representation, we have been able to obtain much greater compatibility, standardisation, text, calculation, circulation, and relative universality, such that by the end, inside the filed report, we hold not only all of [the field site]… but also the explanation of its dynamic" (Latour, 1999: 70-71).

This forms part of a broader, ongoing approach in long-term ethnography whereby "this process of inscribing, of writing field notes, helps the field researcher to understand what he has been observing in the first place and, thus, enables him to participate in new ways, to hear with greater acuteness, and to observe with new eyes" (Emerson et al. 1995: n.p., emphasis added). As such, this process of notation not only renders the past experience as legible, but also better calibrates us as researchers to the environments we continue studying.

4.9 Limitations

Whilst mobile phones open-up a range of possibilities for inscription practice in complex field*sites*, they come with a range of vulnerabilities that needed to be considered and safeguarded against. Firstly, is the physical vulnerability of loss or theft (to which I became victim in 2018). Whilst data was password protected and I was able to remotely wipe the phone of its contents, I did lose a week of notes I had not been able to back-up whilst remotely wiping the phone turned it into nothing more than an elegantly designed paperweight for the thief in question - it was critical this safeguard was put into place prior to field entry as otherwise my data and that of my participants could have been compromised.

Similarly, the material vulnerabilities of the phone had to be carefully managed. Phones and water famously disagree, and working outdoors through a UK winter made getting wet inevitable. Protecting it with cases and waterproof 'sheaths' was essential. However, working in the cold rain did degrade the material integrity of the phone's battery to the point it was practically useless by the end of fieldwork. A necessary cost of the labour.

Whilst these vulnerabilities could be managed to the greatest of my ability, a less identifiable, and therefore more difficult to mitigate, security threat was posed by the work itself. To access the platforms I needed to download and install an application direct from the companies that is not on the App Store. Even opening it required manually over-riding the permissions and security measures Apple puts in place. What they want – and have – access to was not transparent, and I am still unclear to this day how much access they have. This is, however, a reality faced and managed by all gig-economy workers at present, and I see this as an anxiety that simply comes with the work and is constitutive of it. I 'cleaned' my phone of trade-union contacts before beginning work for either platform and migrated to more secure message services such as Telegram and Signal for my communications with them - whilst their names were kept as pseudonyms in my phone's memory.

Interlude 1 – MEET THE PLATFORMS

"You don't get hired here… You come on board. We call it on-boarding. You don't work *for* us – you work *with* us." Maloney (Platform manager in Ken Loach's *Sorry We Missed You*, 2019).

I1.1 Introduction

The platforms studied in this thesis have been given pseudonyms to anonymise their identity. These pseudonyms will be carried forward in any other publications from the project where this is possible. What follows is some expositionary detail that provides context for the platforms being studied. Both platforms operate in London, nationally and throughout Western Europe, offering gig work to couriers who sign-up to them. They both offer riders the ability to use their pushbike, motorcycle, or car, and require that they either wear branded uniform, or use unbranded kit to complete work (i.e. they explicitly state that you cannot wear the uniform of a competitor). Both platforms distribute work to couriers via a 'worker' application which can be used on iOS or Android in current update cycles. Both were founded in Europe and went through rounds of Venture Capital (VC) funding in the early stages. One platform is a market leader, whilst the other occupies the smaller position of challenger in the London market. The chosen pseudonyms have been taken from mythological figures to obscure the identity of the platforms under scrutiny. This is a direct reference to the way in which couriers referred to their algorithms as 'gods' that need to be pleased; surrounding them with myth and legend of how to curry favour with them. Any shared characteristics between the platform and the god they are named after are entirely intentional. However, if there are any courier firms using these names to operate, I am unaware of them, and these pseudonyms do not refer to them in any way.

I1.2 Mercury Meals Ltd

Mercury Meals Ltd. is a market leader in the UK. At the time of research, they had in excess of 15,000 couriers 'onboarded' (signed-up to the platform) and a waiting list of 35,000 couriers wanting to join the platform in the UK. It was founded in the UK in the early 2010s and was in 'late-stage venture funding' at the time of research - meaning it was not listed on the stock markets (instead, stock options are privately held and non-transferable). It is valued of in excess of $1billion – making it a 'Tech Unicorn' (Carreyrou, 2019: 178). It operates globally across multiple markets

predominantly in Europe and Asia. Workers are classified as 'independent contractors' engaged in a 'supplier agreement' with the platform; meaning they receive none of the benefits of 'worker' or 'employee' rights such as holiday or sick pay. Trade Unions and workers are contesting this as misclassification in court. The platform operates a Business to Customer (B2C) model, meaning that orders are made directly though Mercury Meals' 'customer app', which are then sent to restaurants and managed through Mercury Meals' 'restaurant app', before being offered to riders who are given work and managed by the 'rider app'. To manage these systems, Mercury use a set of machine learning algorithms to automate decisions such as distributing labour to riders (they anthropomorphise this algorithm in communications to riders, I give it the pseudonym 'PHIL', short for 'Philocothetes' – a Greek hero who trained Achilles, he had winged shoes to represent his speed). Taken together these apps represent the three-sided marketplace that Mercury Meals have positioned themselves to mediate in its entirety. It extracts approximately 30% of the order value in commission from the restaurant as well as charging customers a delivery fees and pay riders directly. The approximate unit economics of a £100 order made on Mercury Meals would be:

Income: £30.00 [£30 commission + £3.00 customer delivery fee]
Costs: £4.50 [Rider payment]
Profit: £25.50

Mercury Meals deals exclusively in the delivery of food and drink – however some 'restaurants' are self-branding as off-licences and other types of store and supply cigarettes, alcohol, or other groceries.

Mercury was a major Roman deity and messenger of the gods. He is often depicted with winged shoes or hats and carrying a caduceus; a staff entwined with serpents and topped with wings symbolising speed and agility. His additional duties were as the god of financial gain, wealth, good fortune and thievery; characteristics that alongside 'mercurial' have all been used to describe the platform it represents at interview.

I1.3 Iris Delivery Ltd

Iris Delivery Ltd operates across Western Europe and is currently a challenger in the UK market. There are no public figures that state the number of riders they have working in the UK. They were founded in the mid 2010s and were acquired by a European logistics operator after early funding rounds. Just like Mercury Meals, Iris Delivery riders are classified as 'independent contractors' engaged in a 'supplier agreement' to the platform; meaning workers are also deprived the protections that come with 'worker' or 'employee' status. Unlike Mercury Meals, Iris Delivery. delivers both food and non-food items. However, the bulk of their order volume is food, and riders are required to carry equipment needed to carry food (insulated delivery bags) at all times. Iris operates a Business to Business (B2B) model, meaning that their marketplace only has 2 sides, rather than three. Rather than customers logging in through an app supplied by Iris, customers buy directly from a business, which then uses a commercial app developed by Iris to request orders. Order fees are calculated based on time, distance, and vehicle type. Approximate unit economics on a £100 order are:

Income: approximately £10.00 [Delivery fee]
Costs: £4.50 [Rider payment]
Profit: £5.50

Iris was the Greek goddess of the rainbow and messenger of the gods. She is chosen to represent this platform not only as a reference to acting as a courier ("And now Iris, fleet as the wind, was sent by Jove to tell the bad news among the Trojans" The Iliad, Homer, 1999[~750BCE]: n.p.) but also in her close relationship to the weather - famed not only for the rainbow, but also her responsibility of taking water from the sea and rivers to fill the clouds with rain. Similar to Mercury, she holds a caduceus and is often depicted with wings. She is either represented as a female god with golden wings, or as weather forms themselves, such as rainbows.

To exemplify the difference between these B2C and B2B business models, a case study for hypothetical restaurant 'Smokey Joe's' is below:

If 'Smokey Joe's' used Mercury Meals to manage their food delivery, they would create a profile on Mercury Meals' customer facing app, and be notified of orders by Mercury Meals, who also dispatch a courier to complete the job. In exchange for this, Mercury Meals takes a commission based on the total order price.

If 'Smokey Joe's' used Iris delivery to manage their take-away service, then customers would place their order directly on Smokey Joe's website, and Smokey Joe's would receive the full value of this order. They would then use Iris Delivery's app to request a courier for a set fee, who would then pick-up the package and deliver it to the end customer.

Chapter 5 – THE LABOUR PROCESS: DESIGNING, CONFIGURING AND ENGAGING IN PRACTICE

"My father didn't riot, he got on his bike, and he looked for work" Norman Tebbit

(Secretary of State for Employment, 1981-1983)

5.1 Introduction

For Mozorov (2013: n.p.), the gig economy is "neo-liberalism on steroids", echoing the sentiment that it represents the natural conclusion of neo-liberal technological development and industrial relations under late capitalism (Murillio *et al*., 2017 Srnicek, 2017; Zwick, 2017). With Tebbit's words in mind then, it is perhaps fortuitous that those in his grandchildren's generation are both getting on their bike to look for work in the gig economy *and* protesting in the streets when they find it unsuitable. Whilst Chapter 7 explores protests and other forms of resistance to gig work, this chapter examines the experience of working on the bike in London's gig economy with particular reference to labour process and organisational spaces of

work.

Whilst historically, the bike held liberatory potential for the working class to seek work opportunities beyond their immediate locale (Oosterhuis (2016), it has been the location of work itself for a small minority ever since the bike was invented (Downey 2002). In many senses, this work of riding a bike has remained relatively stable throughout the past 150 years, in part because bike technology itself has remained unchanged since the penny farthing was abandoned and the pedals were removed from the front wheel and placed on cranks attached to a drive train. However, the technologies used to organise bike work have changed and developed over time. As such, this chapter will first explore the incursion of digital tools into the labour process, specifically the new proximity of organising technologies to the courier's body through the imposition of a worker app on a rider's phone. Discussion will then turn to the way riders approach the sociomaterial labour process of their work in light of this proximity in the efficient performance of their duties. Analysis will then consider how riders manage risk once efficiency gains are exhausted, before discussing the way riders exploit the proximity of the surveilling application to their labouring bodies to build a sense of agency. The chapter will conclude with a discussion of how these various elements come to construct the 'workplace' for gig economy riders as triadic relations between the city-platform-rider.

5.2 Digital Incursions into the Labour Process

From the telegraph boys of the late 19th Century, the postie of the post-war years and the messenger since the late 1970s, bike work has been precipitated at the meeting point between technological advances and limitations (Badger, 2021). Telegraph cables meant messages could travel over long distances from post-office to post-office, but not to their end recipient so the final part of the journey was done by bike before being rendered obsolete by the widespread adoption of the telephone. Similarly, the boom of bike messengering occurred at the flashpoint of post-industrialisation in large urban centres that needed documents to move quickly through densely populated urban space. However, it too suffered at the ongoing

march of technology, and the network society in the informational city (Castells, 1989) as fax machines and ultimately email usurped the messenger as the fastest way to get information to travel across urban space.

Whilst relying on technology, messengers traditionally define themselves in opposition to the formalised technologies of the workplace, seeking the freedom of the road over the constricting straight jacket of office life spent in a cubicle (Kugelmass, 1981). For Kidder (2011), this escapism into the analogue of pedals and cranks offered an authentic way out of the trappings of white-collar employment by being at one with the city. However, this freedom has never been clear cut. In reflecting on his experiences as a bike messenger in London, Day (2015: 66) finds "the central paradox of the labour of cycle couriering, therefore, is its strangely oppressive freedom". Whilst enjoying the liberties this work offers, the reality is that you end up being "one of capitalism's foot-soldiers, paid to pass the parcel around a massive financial circuit". This paradox has always existed because messengers are bound-up in - even if they consider themselves opting out of - the shifts within capitalism and the ongoing technological changes it brings. The heyday of messengering was its heyday precisely *because* of the shift toward post-industrial economies. As capitalism has found its 'new spirit', and entered into its late stage, these relations have naturally changed, reproducing similar paradoxes in different contexts. Critically, with regards to the gig-economy, its positioning as a form of bike work precipitated by advances in technology and organisational form and structure is not new. What is new, is the direct enrolment of digital technologies into the labour process of bike delivery itself.

For couriers like Day (2015: 66) the freeing analogue elements of the "oppressive freedom" of messenger work are done with very little oversight from human management, leaving couriers free to enjoy the city as they move through it. In the gig economy, the human manager is replaced by an algorithmic manager via the platform's app. On the one hand: "it's great because you don't have someone breathing down your neck the whole time" but on the other "you feel like Mercury Meals is just watching you, remembering everything you do" (Monzil, interview, April

2019). The algorithmic manager not only makes decisions about what work to offer riders and for what price, but also supervises riders while they complete the work and then rates their performance. As such, digital incursions into the labour process of delivery work is at once omnipresent - never further than an arm's reach away on the mobile phone – whilst simultaneously feeling distant as it is not materialised in the traditional way – a manager's body prowling the workplace.

For Moore & Joyce (2020), Labour Process Theory (LPT) provides the perfect lens for studying and understanding this intersection, given its long heritage of scholarship focusing on the results of when work brings humans into constellation with machines. For Gandini (2018: 2) LPT represents an "under-utilised resource" for unpicking the internal paradoxes of the capital-labour relation in gig work, like Day's "oppressive freedom". LPT therefore offers a tangible means for investigating the truth behind competing claims of "freedom and flexibility" from platforms and "wage slavery and coercive control" from unions. To investigate this intersection, this section of the chapter reflects on the incursion of digital tools into courier work before introducing the basic elements of the labour process. It then considers the platform's value production. This top-down approach to the labour process forms the basis for a bottom-up, sociomaterial approach to the labour process that follows in the second section of the chapter, that socialises the interaction between human and machine.

5.2.1 The Labour Process in Detail

In the gig economy, the "oppressive" elements of Day's (2015: 66) "oppressive freedom" are continually enrolled into the gig labour process through their omnipresence on the platform's smartphone app. Here, the paradox at the heart of the gig economy comes into full view, as platforms declare riders free and flexible to carry out work on their own terms, whilst simultaneously deploying a range of technological tools to micro-manage the labour riders undertake. For Day (2015) the analogue authenticity of traditional messenger work made him into a 'Cartesian Centaur' as long hours on the bike left him feeling as though the cold steel

of the frame, the rubber of the tyres and the leather of the saddle began to merge with his fleshy body on an almost atomic level, body and bike becoming one in the homo-machinic assemblage[24]. However, in the gig economy, this sociomaterial assemblage of distributed agency between body and bike is complicated as platform apps are entered into the equation by force.

Where traditional couriers communicated with their managers over a two-way radio to receive jobs, planned routes through the maps in their heads, were paid by the postcodes they traversed and had jobs signed-off on paper manifests; platform couriers are communicated to via the app, but are unable to speak directly to a 'manager', have their routes presented to them on digital maps that are calculated by an algorithm that simultaneously calculates their pay based on the route and are continually accountable thanks to surveillance and tracking tools developed as part of the app. Instead of being a 'complete job', tasks are broken down into sub-tasks, with riders responsible for reporting back at the successful completion of every stage. In sum, the balance between 'oppression' and 'freedom' is radically upset by the way digital tools are enrolled into this once analogue labour process.

This enrolment does not simply equate to the overlaying of digital tools onto an already existing labour process. Instead, it works to intimately change the very nature of the labour process itself, and therefore, the experience of work. For example, the inclusion of digital mapping systems radically changes the way riders work and approach the city, whilst simultaneously deskilling the job. I reflected that:

"I spend too much time looking at my phone rather than what's in front of me because I'm reliant on the route-mapping system. It's not like staring at it, but it's just flicking my eyes up and down every few seconds – micro interactions – to make sure my arrow is still following the blue line laid out for me in digital space. When I do that, I find myself subconsciously changing

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[24] Informed by O'Brien's, (1967) fictionalised account of 'atomic theory' of exchange between bike and body

my road position and speed, and I often end-up nearly missing things that are happening, so I have to react, rather than proactively mitigate oncoming hazards. It's like my attention is split between my phone and the city so the riding doesn't flow. It's staccato and stop-start compared with when I ride away from the platform and know where I am going" (Field Diary, August 2018).

This highlights how the constant reliance upon – and awareness of – technology in the labour process shapes interactions with the city at work. By comparison, traditional couriers who do not know a route still have a stop-start rhythm, but over much bigger time frames – reading a map, memorising directions, riding for a few minutes, and then stopping to check the route again (see Chappell, 2016).

With that in mind, the labour process of bike delivery for Mercury Meals is outlined below (figure 5.1). The moments at which riders must interact with the platform via a 'swipe' gesture to confirm completion of a sub-task are highlighted in orange. The rest of the job, such as cycling to and from the pick-up location, for example, is in blue. Workers are GPS tracked throughout the entirety of this process.
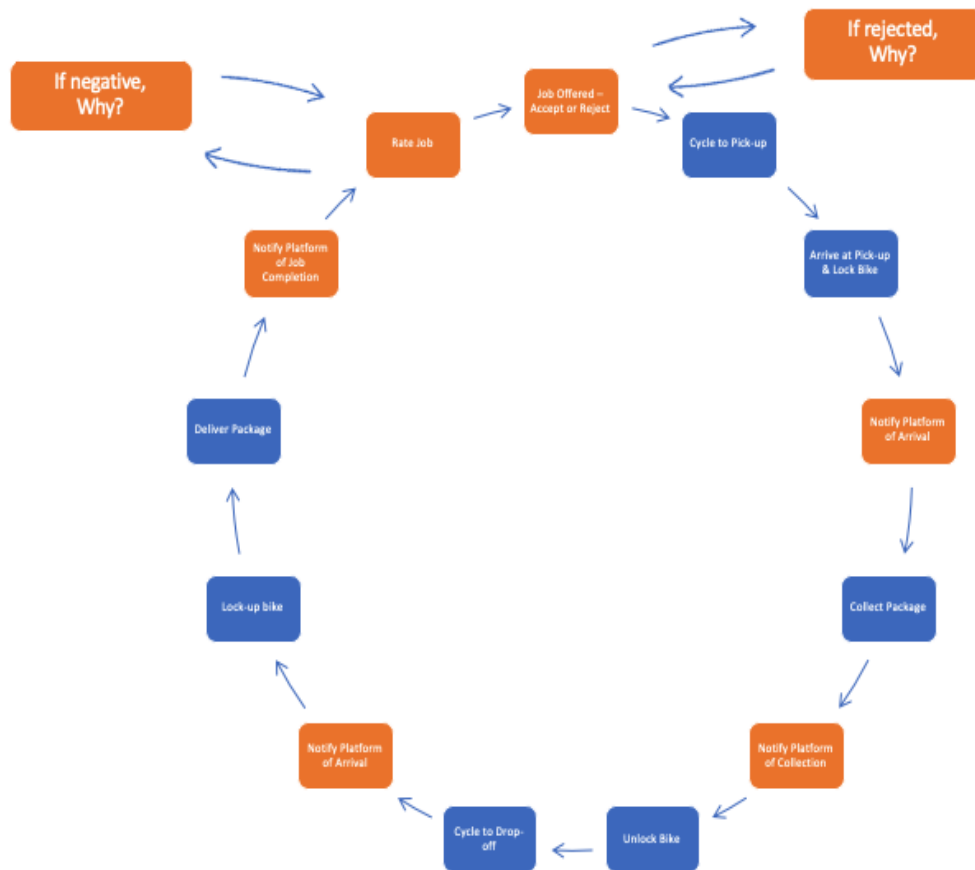
Figure 5.1. *Diagram showing the 'stages' of the labour process.*

This top-level overview of the labour process necessarily removes much of the detail involved in the work, such as navigating complex traffic systems (see Kidder, 2006; 2011 or Fincham, 2009) to plot a course across each section of street (these details are explored in greater depth in Chapter 6). The high proportion of actions where workers must report directly to the platform is immediately striking, imposing new labour process elements and augmenting the rest of the labour process in various ways:

"I spend half my life telling them what I'm doing rather than just doing it. I know I don't have a manager breathing down my neck the whole time so I can get away with some stuff, but this is worse in some ways. It's almost as if Mercury Meals is a paranoid lover, forcing me to check in every few minutes to prove I've not done anything wrong" (Ethnographic Field Diary, November

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2018).

This facilitates, live order tracking – a USP Mercury and Iris offer – enabling customers to view and track their delivery's (read 'rider's') progress through the job. When placing an order, customers are given a list of stages that are checked off as progress is made, including "the restaurant has received your request, the restaurant has accepted your order, your food is being prepared, and your rider has arrived to pick up the food" (Field diary, November 2018). Once in transit, customers are given a live location map, in which the worker, and their algorithmically defined route come to resemble a loading bar tracking across urban space as riders move across the screen towards their destination. During my own time working for the platform I have had customers call me whilst I have been riding to ask "what is taking you so long", and "why aren't you travelling in the right direction, my house is over here". The fact I was following the platform's route is neither here nor there to the customer who, afforded a view into my labour process attempted to take on the role of manager in dictating to me how work should be carried out. In de Certeau's (1984) terms, the customer takes on the role of the institution or producer, with the bird's eye view of the city playing out before them, meaning for platforms, customers offer an avenue for indirect control over the workforce.

This granularity relies upon the sub-taskification of each job, with moments of data production at the start and end of each discrete sub-task. The platform's central role in breaking down the task of bicycle delivery into these sub-tasks is neither natural, nor inevitable. It is done because it is advantageous for the remote management of workers by the organisation (see Moore, 2018a on quantification and management objectives). Whilst riders are 'free' to accept or reject jobs or make small changes to the proscribed route they take, they have no flexibility with regards to how tasks are broken down. Each discrete sub task provides a moment of accountability and must be passed through in order to progress to the next stage and eventually complete the job. The platform is the architect and administrator of these systems, and as self-declared 'tech-companies' it is a core element of their business model. The next section of this chapter explores just how exactly platforms design

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and develop informational asymmetries that coerce riders into cooperation with these systems.

5.2.2 Information Asymmetries

Participation in technical labour process elements is ensured through the creation of artificial information asymmetries (see Gandini, 2018; Rosenblat, 2018; Vallas & Schor, 2020). For example, when in the past, bike messengers used to be told where to pick-up and drop off a package when the offer of a job was made, this is now discovered in stages as the job takes place. Figure 5.2 shows one zoomed in section of Mercury Meals' labour process, covering the time from when I arrive at the pick-up location, pick up the package, and set-off to deliver it:
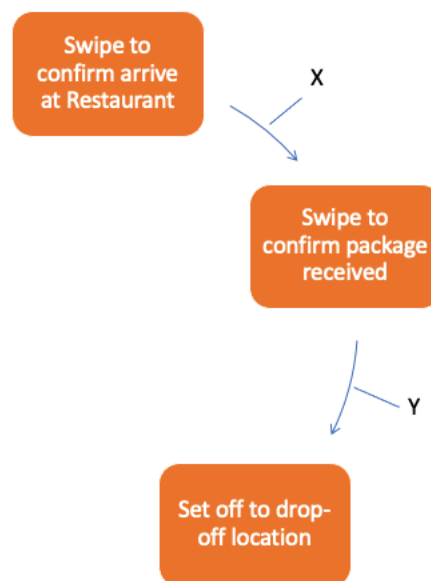
Figure 5.2 – *Partial labour process diagram displaying when task elements are completed (in boxes) and when information vital to the next stage of the task is released [x and y]*

"I don't find out what I'm supposed to be picking up until after I arrive at the restaurant [X] and I don't find out where I have to take it until I have the package in my possession and am ready to set off [Y]. Up until this point, I don't actually know the exact place I'm taking it to. And if I decide I don't want

to take it there because it's an area I don't feel safe in, or if I don't think it's worth the money then I *can* cancel the job but I won't get paid for any of the work I've already done so far on it (cycling to the restaurant, liaising with the front of house staff to get it, waiting for the order to be finished, etc.). That's all for nothing if I cancel." (Field Diary, January 2019).

As such, this sub-taskification not only gives workers more points of accountability, it also allows platforms to restrict information to riders until the last possible moment at which they will need it, at which point riders may feel pressured into completing the job to not lose any earnings for work already completed. Thus, information asymmetries are artificially created and then wielded by platforms as power asymmetries that reduce the agency of the worker because essential job information trickles down to riders as the labour process unfolds.

This restriction of information directly impacts rider decision making whilst on a live job. However, the manipulation of how information is presented to the rider is also harnessed to impact rider decision making on whether to accept a job or not in the first place:

"When you're offered a job on mercury meals, alarms start going off on your phone and a map comes up on your phone with some lines on it and a big price comes-up in the middle of the screen. You have 20 seconds to make your mind up and accept if you think it's worth it. If you're cycling that means finding a safe place to stop. Then looking. Then making up your mind. It's high pressure" (Ethnographic diary, February 2019).

These calculations include trying to perceive the total distance required, but also take into account other known factors, such as past experiences with the restaurant (i.e., are they often slow to prepare the food and thus impart high waiting times) as well as the general direction of travel (i.e., will this job take riders out of their way and risk them missing other work opportunities as they cycle back to the busiest areas of the zone). It is clear that riders do not *need* knowledge of the city to

work, but that in order to work successfully or profitably, they do require specific knowledges of their zone's geographies to accurately assess if a task will be worth it or not. Tim reflects on how he thinks Mercury Meals manipulates cartographic representations to make a job appear worthwhile:

"They play with the scale of the map all the time, so all jobs look the same length, just a couple of inches on the phone screen, but the money goes up and down. Like if it's a long job they zoom the map out so in the 20 seconds or so you have to decide if you want to accept it, you see a map that makes it look easy and you just hit accept. Then when you get to the restaurant and the drop off, it's like 'shit, that was miles away'" (Tim interview, December 2018).

By showing riders a map alongside the price (as opposed to a distance or estimated time to complete alongside the price), riders with less intimate knowledges of London may get lured into jobs that are too long for the money and not worth it. However, by the time they get to the restaurant and see the final location it feels too late, so they complete the job so as not to lose any labour already expended on the job unpaid.

These information asymmetries are crucial in the organisation's attempts to increase their own agency and decrease the agency of workers, thus aiding their efforts to increase job acceptance and completion for ever decreasing wages. They facilitate the exploitation of workers. However, they are also used to create a second form of value, an asset beyond that of service delivery: data. This is explored in greater detail in the following section.

5.2.3 Dual Value Production

In addition to the work of service delivery, riders are also perpetually engaged in data labour. Every movement is rendered into a live stream of data creation captured by the platform's ongoing geolocation services whilst every swipe, press

and gesture of the app is recorded too. Because it is generated as part of the labour process itself, all this data is already contextualised in the platform's own infrastructures (Gitelman & Jackson, 2013), and made parseable for future speculative profit opportunities. According to Gus, a computer scientist and Mercury Meals rider who accessed the data Mercury Meals held on him through GDPR:

> "They capture everything, but it's really hard to understand because it is already made to fit Mercury's systems, like it came pre-coded and sorted ready for Mercury's algorithm to work with" (Interview, April 2019).

Unwittingly or not then, riders do 'data labour' as a core, integral part of their work. Because of how the labour process has been broken down into sub-tasks, each requiring an interaction with the app to progress (through to 'swipes' or 'presses') riders *must* perform these interactions that are generative of data if they are to perform the task of service delivery and get paid. Riders are not remunerated for this data labour and there is no way to opt out of this data collection or to assert your preference as to how data may be used (as with website cookies, for example). Instead, it is the property of the platform who can do what they wish with it.

The data becomes one of the platforms' primary assets, disembodied from its rider-creator and centralised in platform data storage sites where it is processed to simultaneously performance manage riders and feed machine learning algorithms that are continually finding more efficient ways to organise the labour processes. As such, the data is an asset in its own right, but it also contains within it a speculative value that is performed to potential investors as a resource for the continued refinement of the labour processes that may be the key to giving the platform the edge in making themselves profitable in the future. I have argued elsewhere (van Doorn & Badger, 2020) that this represents a system of 'dual value production', in which workers are exploited for the labour of service delivery, whilst their data labour is expropriated from them (without payment or consent) as part of the labour process. This section of the chapter investigates the way data labour is inscribed directly into the labour process and what this means in the broader context of the

gig economy moving forwards.

Data collection, optimisation and processing is a central element of platform business models. Indeed, this is the basis of the argument that they are technology companies rather than taxi or take-away firms and thus forms part of the 'disruption' (for good or ill) that they offer to investors, customers, and workers as part of their entry to the market. For Srnicek (2017) this insatiable appetite for data has made it a key resource for platform capitalism, as oil and coal were for industrial capitalism before it. Whilst this thesis contends that Mercury Meals and Iris Delivery are delivery companies, not tech firms, it is useful to entertain their position - momentarily - to consider their approach toward data capture and the naturalisation of data labour as part of the broader labour process.

Platforms design the labour process with data in mind, organising and structuring it around this core purpose. Following Agre's (1994: 109) five step "capture model" of surveillance illustrates how previously non-surveilled activities become imposed-upon by digital tools and technologies as new "grammars of action". In stage one, "analysis", firms study the existing activity of food delivery to understand its basic components. In stage two, "articulation", engineers work with managers to "articulate a grammar of the ways in which those units can be strung together" to create a "complete, closed, formally specified picture of the activity" (Agre, 1994: 110) such as the labour process mapped in figure 5.1. In the third stage, "imposition", this grammar is "given normative force… [wherein t]he people who engage in the articulated activity are somehow induced to organise their actions so that they are readily 'parseable' in terms of the grammar" (*ibid*: 110). In stage four, "instrumentation", the "social and technical means are provided… for maintaining a running parse of the ongoing activity" as "participants begin, of necessity, to orient their activities toward the capture machinery and its institutional consequences" (*ibid*: 110). In the case of Mercury and Iris, this is the coerced cooperation in data labour as part of their work that becomes normalised as just part of the job. Finally, in stage five, "elaboration", captured 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 (*ibid*: 110). It is in this final stage that the speculative value of data – as resource for continued elaboration of the labour process, is drawn.

To understand this better, it is important to understand how data is produced – how the labour process represents a reorganised grammar of action. Figure 5.3 below shows the points of the labour process in which riders directly interact with their phones as part of a job at Mercury Meals (note this process is almost identical at Iris Delivery). This occurs over a backdrop of continuous GPS tracking that spatialises each of these moments of data generation and contextualises them into a time and place.
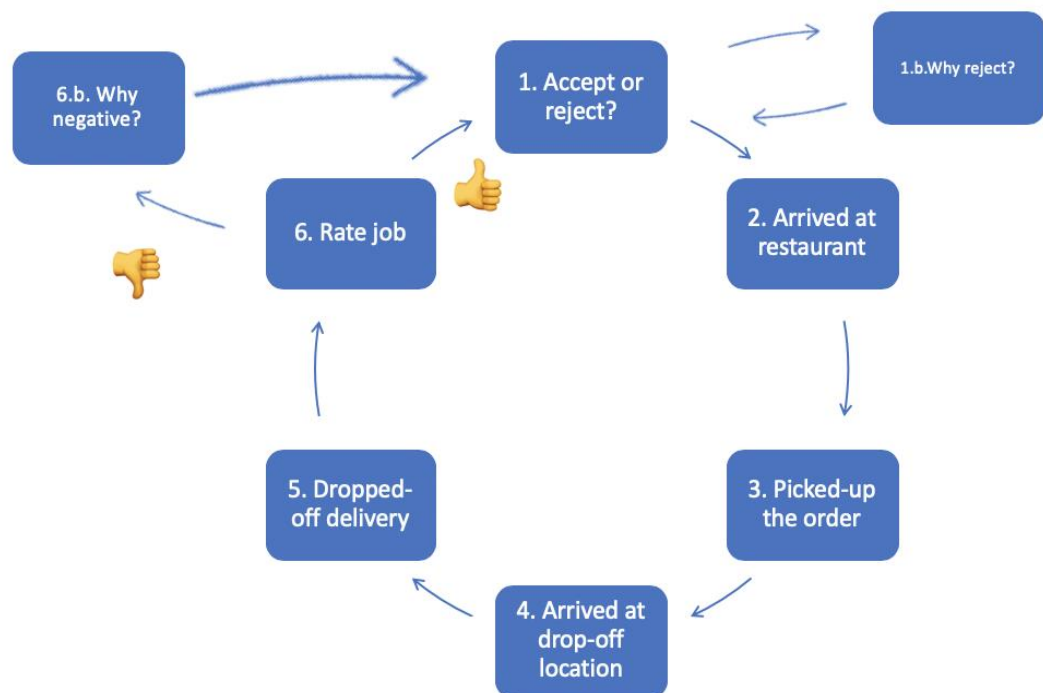
Figure 5.3 – *Diagram showing moments of interaction with Mercury Meals' app that simultaneously generate data and trigger new information to be issued to riders.*

Every interaction, even the rejection of a job ("1.b. Why reject?") creates data

that can inform the platform's future development. This creates highly specific data sets that are already pre-contextualised and pre-optimised into the systems of organisational need. For Gitelman and Jackson (2013), this differentiates data from oil and other extracted natural resources, as there is no such thing as 'raw' data as it is already shaped by the contexts of its production and use.

Whilst riders may be aware they are producing data as part of their work, they cannot know, nor exert agency over how it is used:

"I feel like everything I do has an afterlife with all the data I leave behind. I've got a feeling it'll all come back to haunt me as this disembodied version of my former self mixes with the data of everyone else's disembodied data selves in the platform's mega system. And I'm sure it'll try and use what it learns to make me work harder or for less. But because I don't really know what they're looking for I can't know how to make the data run in my favour. Like I know I have to do it to work, but if I knew more about how the data was used behind the scenes, I could at least try to make 'bad' data that would throw their algorithms off of learning anything useful or make 'good' data that would help me get better work." (Ethnographic diary, March 2019).

This inability to know how data is used behind closed doors, and the lack of agency to intervene in data use, leaves workers disempowered to create data that would favourably shape their future (although workers do speculate on how to create favourable data, something that is explored below). Instead, it is in the hands of the platforms and how they use it.

In conclusion, it is becoming clear that this data is being harnessed as part of a broader pathway to productivity and a key agent in encouraging future investment. For example, Uber's (2019: 155-156) IPO documentation cites "managing the complexity of our network and harnessing the data from over 10 billion trips" as a core part of their business function and that it "exceeds human capacity, so we use machine learning and artificial intelligence, trained on historical transactions to

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automate marketplace decisions" and build future efficiencies. This ongoing process of dual value production through captured data assets puts the rider in a curious position. Their fleshy bodies, in synthesis with the hardwares of the phone and softwares of the platform's app, are rendered into key sites of translation for platforms, where the enormous complexity of the city and the gig work that goes on there is transformed into 0s and 1s that are ready to be read, worked on, and optimised by digital infrastructures for future efficiencies. However, it is not only the labour process of gig work that platforms seek to make more efficient. They are trying to 'disrupt' the entire cities in which they operate, simultaneously reshaping last-mile logistics and urban space as they go. They have flooded the street with brightly uniformed workers, and through heavy promotions and customer recruitment, are starting to totally transform the restaurant and culinary cultures of cities all over the globe. The Covid-19 pandemic appears to have only sped-up this change

Similarly, Uber's ride hail service is transforming transport in our cities, using data from their 10 billion trips as part of their pitch to local governments for contracts to operate their public transport systems and thus take the monopoly position in any given geography. This has begun to be successful in the case of the Uber-Thames Clipper partnership in London. If this trend continues, it threatens our entire public transport systems as private platformised interests weasel their way into public services to secure monopoly status (from where they will likely charge exorbitant monopoly rents). The rider's role in creating data through the labour process – of translating the complexity of the world into 0s and 1s that can be read by machines – is a key part of what platforms are using to "optimise" our urban spaces. The impacts are therefore multiple and extend beyond the continued exploitation of gig workers. The next section of this chapter narrows in focus onto the acts of individual gig workers seeking to 'perform' better in light of datafied surveillance in the labour process.

5.3 Riders' Sociomaterial Approaches to the Gig Economy Labour Process

Both Mercury Meals and Iris Delivery predominantly serve the food delivery market. This means there are extreme peaks in demand around mealtimes (11.30am – 1pm and 5.30pm – 9pm) where there are too many jobs for riders to complete them, with practically no jobs available outside of these temporal windows. Coupled with a piece rate pay structure, this puts riders under immense pressure to perform and make enough money in the limited opportunities that exist. For Cant (2019a), this direct exposure to market forces becomes internalised for workers who end-up engaged in an ongoing process of self-discipline to find the most efficient means of working to maximise their profit making potential. However, the nature of 'efficiency' is different depending on perspective. For platforms harnessing enormous labour pools and data sets (such as Uber's 10 billion trip data) the goal is to be efficient in an economy of abundance. For workers desperate to earn enough in a hyper-competitive work environment with no safety nets, they are attempting to be efficient in an economy of scarcity. Whilst the section above took a top-down look at the labour process to show how platforms engineer economies of abundance for themselves, this section explores workers' attempts to improve their efficiency in an artificially engineered economy of scarcity. It showcases four examples: creating efficiency gains in their own labour process to make individual jobs more efficient; working sustainably to make an entire shift more efficient in light of local geographies; taking-on risk when the absolute limits of performance are reached and; mythologising the platform to *perform* efficiency.

5.3.1 Efficiency Intervention I - The key on the hairband trick

On the surface, gig workers and factory workers approach efficiency differently. Whilst the latter worked in a tightly controlled and optimised environment, the former moves through the city with a relatively high degree of autonomy over which jobs they accept and how they do them. For example, riders are told to put a package in the delivery bag, they are not told *how exactly* to do so, based on measurements of other workers. However, just as the time and motion man was the face of management's efficiency efforts under industrial capitalism (Braverman 1974), gig workers have internalised this role, scrutinising and analysing

their own behaviours and practices to find the most efficient way of doing things:

> "It feels like all of this freedom basically means I can 'freely' find the best way to exploit myself in the most efficient manner I can fathom - that saves Iris Delivery the expense of getting the time motion people in to study the work and not exuding that 'bad boss' energy of telling me exactly how to do things... Because I can't change the discrete stages of the labour process [sub-taskification] then all my marginal [efficiency] gains need to come within that structure." (Ethnographic Diary, January 2019)

In this sense, the gig-economy unites elements of Taylor's scientific management (centralising knowledge and process with management through the capture of data and the implamentation of a rigid labour process) whilst simultaneously outsourcing the role of human relations management onto the worker who, alongside being managed by the algorithmic architectures of the platforms, comes to manage their own labour in an effort to make it more efficient and therefore more profitable.

The first efficiency gain is one such example that I implemented during my own time working for the platform. It was raised in all interviews and was observed being done by other workers throughout ethnographic research. It focuses specifically on the time spent locking and unlocking the bike. Although it seems like a small element of the labour process, it occurs four times across every delivery (twice at both the pick-up and drop-off locations). When I began riding, I kept my keys in my pocket and my bike lock in my bag - for want of any other place to store them. Every time I stopped, I had to search my bag for the lock, find the right key on the chain and then lock-up. Equally, when leaving somewhere I had to find the right key again and then open my bag and put the lock back in it. The labour process of locking-up looked like this:

1. Take bag off
2. Find lock

3. Get keys out

4. Find correct key

5. Unlock lock

6. Lock-up bike

7. Put keys back in pocket

8. Check keys are safely stowed before leaving

This slow and frustrating process is missed by top-level labour process diagrams. I was experimenting with quicker ways when I noticed there was a semi-universal approach deployed by experienced riders to the problem. The trick was to eliminate the frustrating task of finding the lock and key by putting the key on a hairband and keeping the hairband on my wrist. This reduced the eight-stage process to three:

1. Pull key from wrist

2. Unlock lock from bike

3. Lock-up the bike

Although only small, this action saved me lots of time, every time. Occurring 4 times for every job, at an average of 15 jobs a day, that's 60 efficiency gains per shift; eliminating 300 individual procedures that were required in my previous approach. Whilst management directly benefits from this saving, they do not *directly* exploit it. Rather the worker is compelled to do so because of declining rates of pay and increased competition for jobs.

These kinds of approach may or may not be significant in terms of *actually* precipitating greater earnings. The shortness of some peaks, such as lunch times, mean that marginal gains may not accumulate enough time to secure another job before demand disappears. However, it is significant because it highlights how the labour process pressurises riders to self-discipline in reflecting-on and making their labour process as efficient as possible in the hope of mitigating the precarity of the

work. Furthermore, these approaches increase the sense of 'flow' riders experience at work. For example, Jon reflected that:

"One of the things I really don't like about this job is that so much of it is not spent on the bike. Reducing that time as much as possible makes me feel in the flow of things" (interview, January, 2019)

Not only does it make Jon quicker, but it also makes Jon *feel* quicker, minimising the more frustrating elements of the job.

5.3.2 Efficiency intervention II – "It's a marathon not a sprint"

Elsewhere, local strategies have been developed by riders that respond specifically to the local places in which they work. For example, in Brighton, riders take an approach to efficiency that privileges sustainable longevity of riding over and entire shift over short bursts in response to the area's challenging topographies. Brighton rests across a steep descent towards the sea. To the North, East and West, the city rises sharply from sea level, meaning significant climbs in almost any direction. To exacerbate the issue further, almost all of the popular restaurants that comprise Mercury Meals' pick-up locations in the city run along the Grand Parade and North and South 'Lanes' that together carve out the lowest point above sea level. Almost every job requires cyclists picking up at the lowest point of the city and hauling the package to residential areas at the top of a steep incline. Whilst for weekend cyclists, the sharp ascents surrounding Brighton make it a fun and interesting challenge, for working delivery riders they present a grinding, painful activity that slows the pace of work and leaves lactic acid coursing through the riders' body. This impacts the work in a range of ways. Firstly, almost all riders in Brighton use bikes with gears - standing in contradistinction to London riders who often ride single speed bikes thanks to the generally flat terrain. Brighton riders also remarked on paying much closer attention to the set-up of their brakes and the speed at which they ran through brake pads. As one interviewee simply put it, "what goes up, must come down" (Gus, Interview January 2019).

However, the real change towards more efficient riding comes in their management of route options. Rather than taking the algorithmically suggested route; that charts the most direct and therefore - in theory - quickest route to the drop off location, riders made small adjustments throughout to ease the stress incurred on their bodies by each task. Carson recounted that:

"I've basically developed a shorthand system for getting up the hills. Every big hill on the way out of Brighton has little roads and cut throughs that go across the slope, rather than straight up it. So now if I know I'm delivering up toward Moulsecoomb, or Preston, there's other routes I can take that flatten out the journey and reduce the incline That way I can save my legs for later. Otherwise the gradient is *brutal*...." (Interview February 2019)

These adjustments include the use of non-road spaces and footpaths where riders must dismount and carry their bike over steps or across grassy patches to ease the journey. In low gears these slightly longer, but crucially flatter, routes can still be traversed quickly enough to get the order there in good time. Critically though, it 'save[s] the legs" so that riders can work an entire shift. In comparison, London rider Jon "just tries to get the food there as quickly as possible and forget everything else" (Interview January 2019). To work an entire shift in Brighton, adjustments must be made to both body and bike as they work in unison to take riders from the popular pick-up locations at the bottom of the hill, to the popular drop off locations at the top of any number of hills. Findings show to the local attunements made by delivery riders echoing Gregory & Maldonado's (2020) study of Edinburgh couriers who also follow the topography. It is clear that place and locale play an important role in the way riders work.

5.4 Risk

It is not always possible, even with self-imposed efficiency gains to meet either the expectations of the platform or a riders' financial goals. Just as workers

seek to become more efficient to earn more, platforms are becoming more efficient by reducing their costs and spending less. These interests are actively antagonistic towards one another, given that the biggest outgoings of most businesses are staff costs. Whilst technological development may reduce some costs, reducing rider pay is now the avenue many platforms are pursuing to reduce cost and improve profitability. For van Doorn (2020: 7) "the wage is no longer just an incentive but also becomes an object of prediction and experimentation; a constantly changing figure and shifting target appearing on a gig worker's phone as a peculiar form of clickbait." By capturing data on what prices workers will find acceptable platforms are able to develop 'dynamic pricing' systems that experiment with wages offered and ratchet down prices over time. Whilst in the past, riders could earn enough to survive, trends have shown an ongoing decrease in worker pay in the platform economy as companies move toward becoming profit making (Mellino et al, 2021; Field & Forsey, 2018). For Shapiro (2020: 14), dynamic pricing "allows firms to leverage control at the aggregate level while maintaining the façade of autonomy at the individual level". This results in the sub-entrepreneurialism (Kaine & Josserand, 2019) of riders and precipitates their self-management strategies to improve their earning capabilities. Given each workers' self-employed status, this type of wage depression from above results directly in the experience of work intensification for riders.

Once efficiency efforts are spent (there is, after all, only so efficient a riders' labour process can become), riders are left with very few options to improve their earnings. One solution is to take-on various forms of risk to complete jobs quicker that will hopefully lead to an increase in earning. For Gregory (2021: 327) risk "fundamentally informs both the process of becoming an on-demand rider and the experience of work" as riders "are left to themselves to parse their own sense of risk and to determine when the work is 'worth it' or not"… however "such a choice cannot be consistently made in the absence of crucial information about how worker data are gathered, analysed and used to determine the frequency, organisation or distance of deliveries". As such, it is the rising precarity of decreasing pay combined with platform enforced informational asymmetries that leave riders feeling the need to take-on risks. Riders manage this by transforming their financial risk (i.e. precarity)

into bodily risk as they take on more dangerous situations at work.

Crucially these risks are felt unevenly by different parts of the labour force. Intersectionality becomes a critical factor in both the decision to take on risks in the first place and how these are experienced. Indeed, not all risks are equal or comparable for all people. This section of the chapter examines some of the risks riders undertake in their labour. Although these risks blend together, and riders will often be managing multiple risks simultaneously, they are separated here for analysis into road traffic risks, climatic risks, risky roads (traffic risks) and risky places (risk of crime).

5.4.1 Risky Roads

Being a courier has always been a risky job. For Downey (2002), the visibly hazardous nature of Telegraph boys' work was instrumental in the establishment of worker compensation laws. Furthermore, "the first enquiry held under an expanded Workman's Compensation Act (1906) was into the death of bicycle messenger James Hayes, who died after losing control of his bicycle and crashing into a wall (Scotsman, 1907)" (in Gregory, 2021). Indeed, managing this risk is – for some traditional couriers especially – part of what makes the job enjoyable (explored in greater depth in Chapter 6). However, Mercury Meals and Iris Delivery riders are not traditional couriers, and they have less of the individual and social group identity traits traditional messengers do (Popan & Spinney, 2020). Platforms are not seeking to attract the dare-devil group excited by traditional forms of messengering. Rather they "actively whitewash the risky aspects of work" and "often rely on images of young, male, healthy, able-bodied individuals shown seamlessly riding through the urban environment…" selling "a sanitised version of messenger culture that suggests anyone is capable of doing this work" (Gregory, 2021: 318).

The reality is that this work is dangerous, comprising the risks traditional couriers face, compounded by those created by the platform's digital interventions into the work via the platform app. Riders are deeply aware of the dangers and often

deployed gallows humour at work to come to terms with these, for example Aron reflected that:

"We face death every day. It's only our skill that keeps us alive. But one mistake and the end could be messy, leave us splayed out all over the road for some man in a plastic suit to come and collect up what's left and get rid of the skid marks our bodies leave under a white tent" (Interview November 2018).

To deal with financial precarity, riders may take more daring risks on the road to get ahead of time and complete jobs quicker:

"Being on a pushbike opens me up to way more risks than other vehicles. Firstly, I'm totally unprotected so that's risky, but secondly, because I can slip through urban traffic surveillance systems to get jobs done, like going through red lights or against the traffic." (Ethnographic diary, January 2019)

Taking risks such as these constantly throughout the day made me noticeably quicker. Over time, it galvanised into a new, riskier riding style that became the norm for my work, exposing myself to greater risk all the time. However, these risks have limits, and consequences if they do not go according to plan, as Monzil recounts:

"I was working long hours and riding hard to earn enough. Anyways I was at this roundabout and this uninsured driver came straight into me, smashed my bike, broke my leg, it was a total mess. I couldn't work for ages… to be honest, when I put it all together, all I ever got from Mercury Meals was a broken bike, a broken leg and £16,000 in credit card debt. I've gone into more debt that I ever earned because of the injury" (Monzil, Interview April 2019).

This illustrates how financial risks transform into physical risks. Equally, Raoul said at interview that he had returned to work not long after an accident on his motorbike and was out delivering whilst still on crutches. Driving a scooter on

crutches is dangerous and highlights the financial precarity riders experience, and how it becomes manifest as bodily risk without sick pay or high enough earnings to build a financial reserve to withstand workplace injuries. Riders are forced to continue to take greater risks as wage decreases leave them fighting to earn enough to survive. Most accidents do not end in death. However some do, and this increased precarity is a central motivating factor in workers taking risks and suffering consequences, explaining in part the recent increase in rider deaths as platforms have placed greater pressures on take-home pay.

5.4.2 Climatic Risks and Platform Incentives

According to Rosenblat (2019), platforms are able to issue workers with 'nudges' to incentivise them to log-in and work in their attempts to manage supply and demand moving through their marketplace. Rather than slowing orders down through client networks – as this is a primary source of income – platforms instead opt to manage the labour supply by encouraging people to log-in and work. Messages are 'pushed' directly to workers' phones via app notifications, text messages and emails, typically reading 'there's a fee boost! Make an extra £x on each completed order today between y o'clock and z o'clock in [name of zone]". Whilst they can be used for all sorts of purposes; say in the event of a customer discount or recruitment campaign, they are most often deployed in instances of poor weather. It's no coincidence that these messages from Mercury Meals in February 2020 (figure 5.4 below) for example, correlate perfectly onto what was the wettest February since records began in 1862, and the fifth wettest month of all time on record (Met Office, March 2020).

With over 200% of the typical rainfall for the time of year more people stayed in and ordered take-away. More riders opted to stay at home too, not seeing the measly pay as reward enough for getting torrentially soaked and taking on the risks these conditions pose. Furthermore, rain gets more dangerous in greater quantity, with standing water posing a direct threat. Similarly, skin remaining wet for hours on end leaves riders with the risk of developing infections. For myself, these risks were

doubled as rain accumulating on my glasses makes visibility of the road poor. Beyond these concerns, rain and handlebar mounted phone screens do not mix well, making the app almost unusable, or meaning riders needed to put the phone in their pockets and keep taking it in and out; risking water damage to their phones in the process.

These surge payments represent the incentivisation of risk; to push riders out to work when they may already feel uncomfortable working - a strategy that is effective for many. Tim reflected that:

"I often go out for the rewards. I might not fancy it but the extra money is just too much to resist most of the time" (interview December, 2018).

By systematically underpaying riders, platforms create the conditions for these surge or boost payments to be irresistible in the face of mounting costs. This extends to much more dangerous scenarios, with platforms offering up to £16 a delivery in some cases for riders to go out during the height of the COVID-19 pandemic, or surge pricing of up to £5 a job being offered to riders to go out and brave the 'Beast from the East' in 2018. The conditions were treacherous - I was cycling to and from UCU picket lines - where I met up with Jon, a Mercury Meals rider turning up to show solidarity after his shift had ended. He said that he was getting:

"£5 extra a job. The money is mad… it's pretty ropey out there, like I'm frozen, I think my bike is fucked, and it's just getting sketchy… like it was okay this morning when it was all fresh snow, but now its slush and ice and I can feel something's going to go wrong" (discussion recorded in field diary, March 2018).

I asked if he was going to stay out, to which he replied:

"Yeah I'm gonna have to. I can't afford to miss the money. It started off fun and now it's sketchy, but yeah..." (*ibid*.)

Whilst platforms assert that these payments are supposed to make it easier for riders to take their time and maintain safety, within the greater contexts of precarity that workers find themselves, this is rarely the case. For workers that rely on the platform as their primary source of income, the platform impoverishes them through poor payment to the point that they must take full advantage of these opportunities. Furthermore, despite the understanding that payment is higher to allow more time, the platforms do not appear to tweak their algorithmic management systems to allow for this to be the case. As such, riders still get notifications to inform them that they are working too slowly, encouraging them to take-on even greater risks.

5.4.3 Risky Places and the Threat of Crime

Beyond the risks of the road, climatic conditions effecting the road, and efforts to incentivise riders to work in harsh conditions, riders may also feel coerced into entering spaces that present a risk to their personal safety. This is precipitated by the segmentation of the labour process by the platform and the ensuing informational asymmetries that are deployed to make workers comply. By restricting information about the final address of a delivery until when a rider is at the restaurant and has waited for and collected the food, they present workers with a dilemma if the area they need to drop off in is one the worker perceives as risky. They can either:

"Cancel the job and lose any potential earnings for it – including the time already spent on the task – but preserve personal safety or take the risk that makes you uncomfortable, but complete the job and don't let the work already done go to waste." (Ethnographic Diary, December, 2018).

This effects people differently, intersecting with gender and ethnicity as riders in community WhatsApp groups (not reproduced here) reported experiencing greater anxiety, concern and vulnerability if they were non-male or non-white, citing these features as factors shaping their experience (echoing Rose's (1993) discussion of various reflexive experiences of the city as felt by different bodies).

For Mya, a female courier in London, the platforms she worked for often put her in uncomfortable situations she felt compelled to endure in an effort to earn enough money:

"I hate it. And it's worse when the winter comes because it gets dark really early and you can't see as much. It all goes through your head… 'what if someone dragged me inside their door' or 'what if someone popped out? How would I get away or defend myself?'" (Interview, October 2018)

Mya also expressed that the way the platform transmitted her live location to the customer was a great safety concern:

"I know it's supposed to help if we can't find each other, but what if it wasn't a real customer, but someone who wanted to rob me or rape me? They could hide and know *exactly* where I am because they can see a little icon of me on their phone moving across a map. It's terrifying. I bet that was a man's idea, designed by a man, and meant for male workers. A woman would have thought about how it might be misused." (*ibid.*)

Fortunately nothing has happened to Mya, but this highlights the risks she experiences as part of her work and finds difficult to avoid because of how information is restricted to her on the one hand, and is represented freely to customers on the other by transmitting her live location. The toll on workers' mental health of these systems is immense.

A tragic example of risks being realised for riders is highlighted by BBC London (2018) report into rising moped crime targeted at food delivery riders. Links to the report, translations of what it said, and its ramifications were discussed in worker community groups across both platforms I worked in, and across multiple cultural-linguistic groups. In it, a driver notes a delivery that he sees may cause him problems because it is delivering to a postcode known to the worker as associated with gang activity. He says: "I don't want to go there because it's a very dangerous area, but I don't have any choice… because it's not a busy time, it's summertime and I need to get enough money to survive, so I have to take it" (BBC London, 2018: 5:26-5:41). This highlights the challenges the cyclical rhythms of the seasons present in compounding risks facing riders. For Mya, the darkness of winter increased risks, whilst for the rider in this extract, the lean nature of the summer months within rhythms of seasonal demand (as more fair-weather riders come out to work and more potential customers opt to collect their own food in the sun) push him to accept a job he would rather not. Given that it is mostly migrant men and women that do this work full-time on mopeds and scooters – and that their vehicles are valuable enough to warrant theft – this risk disproportionately impacts migrants working in the gig economy. In response, community groups have formed that protect each other (in light of riders feeling ignored by the police). When a moped is stolen, word is spread via WhatsApp to other riders who abandon their jobs, come to the area and confront the thieves and reclaim the bike. This has formed community solidarities in response to risk that socialise and communise the risk of lone working at night in dangerous areas that the platform encourages and facilitates.

In conclusion, all these risks amplify both 'real' and digitally felt conditions of platform work. All are worsened again by the long exhausting hours riders work. In my own experience, I was burning in excess of 6000 calories a day in effort exerted through my bike over an average of 50-70 miles through London's congested streets. Even eating enough to keep fuelled for work is a challenge, and near black outs were a semi-regular occurrence. To combat this, I would often eat mashed potato sandwiches, have two breakfasts lunches and dinners, and load-up on carbohydrates to keep me fuelled.

For Kidder (2011) being a bike messenger is a job that completely consumes the body and the mind. This is necessary thanks to the ultimate risk of death or destitution failure to succeed brings with it. Whilst traditional messengers' work is structured by the business day (9-5), gig-economy couriers work to other people's meal times that transgress traditional working hours. In reality, many regularly work up to 14-hour days, taking a day off early in the week to recover. Over the course of 80+ hours of constant exertion, mistakes happen, particularly toward the end of a shift when navigating dark, inhospitable streets. Most of the people doing these hours are migrant men, often on scooters which are also exhausting to drive for these amounts of time. This reflects the intersectional nature of precarity in the gig economy. For lorry drivers who are also heavily surveilled (Kanngieser, 2013), tachographs strictly limit their work to 9-hour days, 56-hour weeks, or 90-hour fortnights because of an awareness breaks in concentration occur more regularly after long working hours, despite their irregular working times. For couriers, this is not the case – and not necessarily something many would argue for; the low wages mean workers ride for extended periods not because they want to, but because they have to. Limiting these without implementing fixed minimum wages would therefore be disastrous. However, it is unmistakeable from both my own experiences and those of other couriers at interview that tiredness in this line of work is accumulative, driven through the application's management systems and low pay, bearing fruit as increased accidents and mistakes as couriers navigate ever more challenging risks.

5.5 Building Agency, Performing Efficiency

Whilst minute changes to the labour process or taking on extra risks can make a rider materially quicker, there comes a point at which all tangible speed and efficiency gains reach their limit. There is, after all, only so far a rider can go in making themselves as efficient as possible, or risks they can safely manage. However, the pressure to increase speed and efficiency never disappears as rates of pay continue to fall. Once all actual efficiencies are met, the question becomes how to *appear* more efficient without *actually being* any quicker. The need for this is continually

reinforced by the rider community rumour mill that reports tales of other riders being terminated for being too slow. This section of the chapter explores the ways in which riders seek to 'appear' quicker by *performing* speed, even if they do not go any quicker through active manipulation of how their labour is performed to surveillance architecture (in)capabilities. It begins with a discussion of how workers mythologise the platform, before considering their approach towards impression management for various human and computational audiences, followed by an example of riders' attempts to disentangle the physical and technical elements of the labour process in an effort to *appear* quicker to the platform's performance management systems.

5.5.1 Mythologising Mercury and Iris

For riders, earning enough means being successful at two things: being able to complete jobs quickly and being offered jobs in the first place. I recounted that:

"I seem to spend a lot of time sat still, both inside and outside of peak hours. I'm sure there must be work because I see other riders going into places and picking up or dropping off, so it's just that they [Iris and Mercury] aren't giving jobs to me…" (Ethnographic Diary, November 2018)

This ignorance is created by the information asymmetries put in place by Iris and Mercury. Because I did not know what factors led to being offered a job, I could only speculate as to what I could do to improve my chances. When a strategy seemed to work, like waiting in a certain location or not rejecting too many jobs in a row, I concluded that this must be the trick, until next time when the same would happen. As such, I was testing the system, using a process of trial and error to divine effective strategies for being offered work.

For Tim, success effectively amounted to "pleasing the algorithm gods" (interview, January 2019) to assure a continued stream of work:

"Everyone has different approaches and tricks *they* swear works. For me, I

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refuse to reject more than 6 jobs in a row. I've noticed that after the 6th one they give me a long wait until the next job offer, so I've stopped doing that. I'll take a duff one before then to stay on Phil's good side." (*ibid*.)

Mercury Meals workers have begun mythologising the anthropomorphised labour distribution. Tim's strategy is just one approach he has idiosyncratically developed to seeing how Phil treated him and his actions at work. Even though riders did not receive formal performance reviews during my fieldwork at Mercury Meals, the year before I began work, riders did receive them. The folkloric legacy of these performance reviews rippled through the rider community:

"We used to get fortnightly performance reviews that said how quick we were being. It was relative to how quick we were the fortnight before - had we improved - as well as being ranked against the rest of London. If the metrics fell below a certain amount we'd be terminated, but we were never told the actual value of the baseline or if there even was one… [Adam: "I've never had one of those, do you still get them?"] No, we don't get them anymore but I'm sure they're still recording that data. They're just not sharing it with us because it makes us look more like employees." (Jon, Interview, January 2019)

In this sense, the performance review and the platform's technological tools and organisational practices are mythologised as a spectre that haunts the rider community in the day-to-day application of their duties. There may not be any systematic performance review of this sort anymore, however, speculation on the platform's surveillance capacities and knowledge of their previous practices align to create the effect that riders are being performance managed. This speaks to the experience of precarity workers endure through their work.

This practice illustrates the advanced interpretations - if not necessarily concrete knowledges - riders have of platform systems, motives, and the way their labour becomes represented in, to and through the platform's application and

algorithmic architectures. Additionally, it shows that riders interpret the behaviours of the platforms they work for, in addition to the systems they deploy that directly impact the labour process. Workers become aware they are creating data, and to some degree the type of data being produced and the ends for which it is used to manage and potentially fire them. Actions at work reflect what Engster & Moore (2020: 201) term the "interface of [workers and platform companies'] mutual capitalism socialisation" as workers consciously shape themselves and their labour in light of inferred understandings of machine learning systems to continue the successful reproduction of their labour. Whilst the efficacy of these actions is unknown, what is significant is their role in actively curating the data they are producing, which in turn becomes a proxy for their own impression management to the platform itself.

5.5.2 Impression Management

These mythologised conceptualisations of how the platform operates become the basis of riders' impression management strategies. This is reminiscent of Goffman's (1959: 17) *Presentation of the Self*, albeit brought into the digital/analogue hybrid space of contemporary gig work, rather than simply face to face interactions. This requires an "individual act in a thoroughly calculating manner, expressing himself in a given way solely in order to give the kind of impression to others that is likely to evoke from them a specific response he is concerned to obtain". However, in the gig economy context, riders are simultaneously giving their impression to a human audience (customers, restaurant staff, platform support staff, etc.) and to a computational audience (the digital surveillance systems that track, monitor, and manage their work as part of the labour process) that parallels the dual value creation of the work. Thus, riders perform their bodily self to the people around them, and their data selves (derived from riders' embodied interactions) to the platform's algorithmic systems as the platforms capture their bodily engagements as data. Given the platform's role in offering or restricting work opportunities to riders, the primary audience for the performance of this kind of gig work is not the customer or the client, but rather the platform itself. This concurs with Moore & Robinson's

(2016: 2786) assertion that "the value of social performances is entirely reduced to managerial metrics without remainder." Conversely, in traditional bike messenger work, performances are only given in radio communications with a controller, in client offices and through the speed at which tasks are completed, the performance for gig workers is now a continual, ever-present process; made possible and parseable by the material realities and proximity of the mobile phone (i.e. data recording device) to the workers bodily performance.

Here, Goffman's 'regions' further serve as a prism through which to understand worker conceptualisations of surveillance in the gig economy. Workers are only able to perform this version of themselves and their labour process because of the incompleteness of the platform's surveillance structures. For Goffman (1959: 109), a region "may be defined as any place that is bounded to some degree by barriers to perception." Rather than comparisons to Bentham's or Foucault's panopticon that has been made elsewhere in regards to technological surveillance in gig work, the reality is much closer to Latour's (2005) and Amin & Thrift's (2002) understanding of "oligopticon" (see also, Kitchen & Dodge, 2011). Building on Moore & Robinson (2015: 2785) a platform's surveillance systems create data that "claim[s] to show us what a body can do, but in fact they only show us what bodies have been seen doing." By interpreting what platform surveillance systems can see; and therefore capture, workers curate their observable performance to create positive data streams and elicit positive responses from algorithmic platform management. The regions where platform surveillance and rider performance meet is in the spaces of digital imposition into the labour process. The interacting of these elements creates a sociomaterial assemblage that brings certain elements into high resolution (see Ash, 2016) whilst others remain out of reach. This means that the platform is well equipped to surveil, capture data, and act-upon the points at which riders interact with the app. Similarly, they always know where riders are, given the continual GPS tracking of their movements and the ongoing presence of the mobile phone as sensing device on the riders' person. However, what is less clear is what riders are *actually doing* in these places. As such, the resulting oligopticon "do[es] exactly the opposite of panoptica" it "see[s] much too little to feed the megalomania

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of the inspector or the paranoia of the inspected, but what they see, they see it well"
(Latour, 2005: 181). This perfectly explains the situation in which riders perform their
ideal efficient selves to the platform. Aware of the infrastructures in place that
render some interactions in high resolution and others in low-resolution or near
invisible, riders can eke out a space where they can directly deploy their own agency
into the labour process. They believe they know what the blind spots in the system
are and operate from these spaces and shadows to their advantage where possible.

5.5.3 Disentangling the Labour Process

To exploit this oligoptic surveillance regime, riders have developed strategies
that allow them to appear quicker to the platform, without actually having to get any
quicker. This is done by disentangling and de-synchronising the performance of
physical completion of task elements and digitally reporting when task elements are
completed to the platform. This opens-up a gap within the technical tools designed
by the platform to manage and surveil the work remotely, shifting the performance
of the labour process into areas the platform's oligoptic systems cannot see to
facilitate a particular performance of efficiency. This gives workers a sense of agency
as they feel able to understand, gamify, and then 'win' through their performance of
the labour process.

Specifically, steps are taken to exploit the granularity of the labour process,
and the way datafication's enrolment in the sub-taskification of work presents both
barriers and opportunities to the agency riders can exert on the job. This highlighted
to riders that whilst they may be responsible for their own earnings and elements of
the labour process, there are many things already out of their control and beyond
their influence. Riders are aware that they are measured on key performance
indicators (KPIs) even if they are not fully aware of what they are, or the limits of
their use in the decision making process for work allocation and in worst case-
scenarios, contract terminations. For riders, the job is to get from point A to point B,
pick up a package and take it to point C. As time spent waiting for those at point B to
complete their part of the labour process are out of a riders' control, workers feel

they cannot do anything to reduce this time, and that it should not logically impact the way the platform understands their work or rates their performance.

Interviewees inferred that time spent in transit would be seen as 'their' time and therefore their responsibility, whilst time spent waiting at restaurants was beyond their control. This awareness, in tandem with an awareness of the sub-taskification of each job led most riders I spoke to conclude that efficiency – with reference to how platforms rate their performance - does not apply to the order as a whole, but rather to the discrete stages of it that they may or may not have agency over. Moments of datafication (highlighted in orange in the labour process flow-chart on page 196, figure 5.5) are understood as checkpoints, at which responsibility and accountability shifts to another party. For example, swiping to confirm you have arrived at a restaurant implies you are ready and willing to pick up the food immediately, and therefore the issue is located with the restaurant and not the rider if any delays are incurred. Equally, swiping to confirm you have the package and are setting off to the end-customer's address implies you have the food and are ready to go; transferring responsibility back to the rider. I found this process to be "like playing chess with a clock, the swipe to confirm a stage of the process being complete mirroring the slamming down of the button to start your opponent's timer and freeze your own" (Ethnographic Diary, January 2019). With experience, riders find the best ways to shift as much of their labour process onto the restaurant's time and responsibility as possible.

In scenario A, the rider informs the platform the food is collected as soon as they receive it. In scenario B, the rider informs the platform the food is collected as they set off to leave. In doing so, they shift the moment of data creation to signify the stage of the task is completed back, offloading more elements of their labour process onto the responsibility of the restaurant and thus appearing quicker and more efficient to the platform.

By exploiting the grammar of action imposed on the labour process by the platform, riders are enabled to shift as much of what they conceive as 'their' labour

process as possible onto the restaurant's time. The datafication of the labour process is what allows riders to *appear* quicker than they are because the data will show them to be quicker, regardless of their performance in physical space. This dis-entangles the connection between undertaking a part of the labour process and swiping to confirm that stage as complete, taking advantage of the mutability of physical action and the immutability of the digital recording systems tasked with capturing data and on progress made.
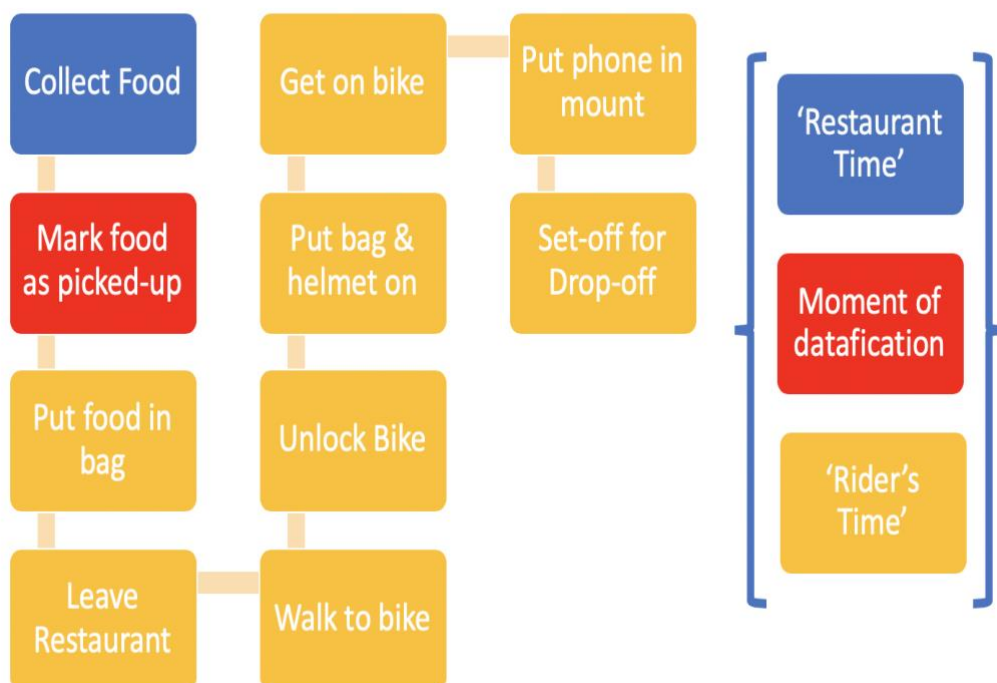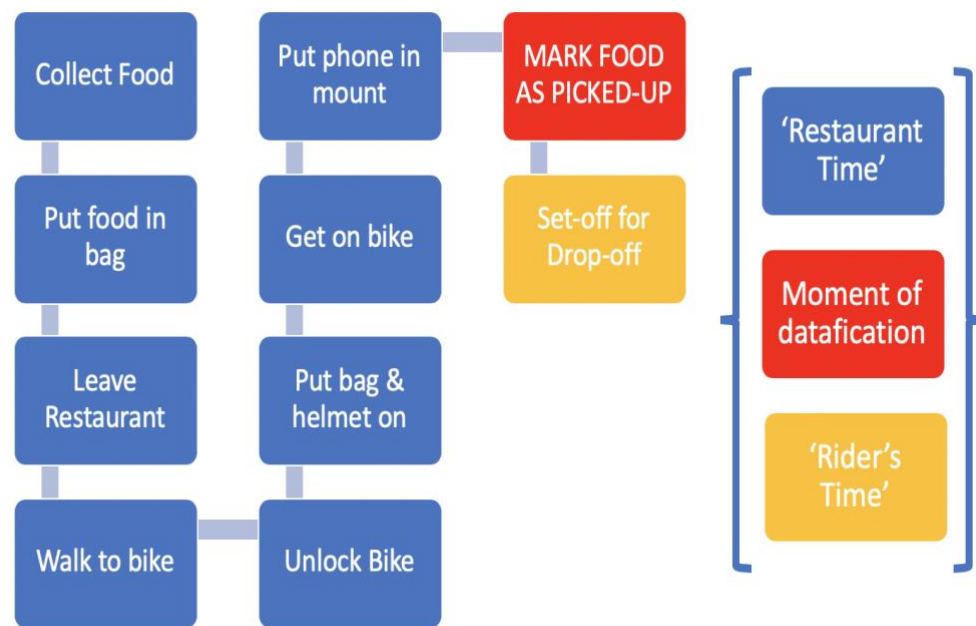
Figure 5.5 - *Chart A and B show the same stage of the labour process (moving from collecting the food, to setting off to the delivery location).*

The advantages of this are two-fold - simultaneously speculative and material. Speculatively, riders assume it makes them appear quicker and the restaurants slower to improve their performance metrics. In reality, no-one knew conclusively how much this would have an impact on their standing; however, Jon's reflections summed up the feeling among interviewees that:

"it's all the same either way… it's no extra work for me to do it in that order than in the order we're supposed to. So it's hedging my bets a bit… free insurance against myself in case they do look at that." (Jon interview March 2019)

For Jon, it is like Pascal's wager. It makes no difference if he swipes to say he has the food immediately or once sat on the bike and ready to go. It just might stand him in good stead so is worth doing.

Materially, for platforms that have a waiting time payment systems, it ends the waiting time clock as late as possible. This process can be applied in reverse with reference to arriving at a pick-up location too, with riders swiping to confirm their arrival as soon as they are within the last 0.1 mile of their journey, rather than when standing ready to accept the package in a restaurant; thus expanding the window of time they are considered to be 'waiting' and the likelihood of receiving waiting time payment.

In sum, these efforts highlight two key findings. Firstly, that platform systems and the enrolment of information asymmetries into the labour process create an opacity that workers experience as precarity. Secondly, it shows that workers do not take this lying down, and are able to interpret the platform's use of digital tools and develop highly nuanced strategies that take advantage of the platforms' oligoptic surveillance systems.

Whilst wins for riders such as skewing the labour process to favour them may be seen as a necessary and critical intervention, it also creates fertile ground for workers to buy-into the process and thus silence the more existential, systemic critique required as a seed of change. Returning to Burawoy's (1979: 82). discussion of this process in the factory context, "as long as workers are engaged in a game involving their relations to a machine, their subordination to the process of production becomes an object of acquiescence." It is possible that by finding a way to exert agency in the labour process, riders are counter-intuitively pulled further into that labour process and the exploitation and expropriation it brings with it. Here, the slight economising of the truth and cheating the system involved in pushing responsibility onto restaurants becomes part of the buy-in to the broader platform systems that continue to leave workers on the breadline. This fits within Marcuse's (1964: 12-13) critique of advanced capitalism that asserts "the manifold processes of introjection seem to be ossified in almost mechanical reactions…" and that within this, "alienation seems to become questionable when the individuals identify themselves with the existence which is imposed upon them and have it in their

development and satisfaction". Whilst the next chapter explores in greater detail the rich experiences of working through complex urban spaces, the final section of this chapter concludes the above findings to consider the workplace of the gig economy as the meeting of triadic elements, city-rider-platform.

5.6 Conclusion – City-Platform-Rider

In conclusion, it is becoming clear that gig work is a complicated and contested phenomenon that occurs in a complex site of production. If Srnicek (2017) and others are right, and platform capitalism represents at the very least a new development in capitalism's functioning, and at the most, a new era in capitalism itself (emergent, yet still distinct from late-neoliberalism or capitalism's 'new spirit', Boltanski and Chiapello, 2005) then it is essential these contested phenomena are explored in depth. Following Lefebvre (1991) and Marcuse (1964), the site of production is an exemplar of the broader currents within capitalism. Much sociomaterial analysis, like labour process theory, has involved the study of relatively neatly bound places and organisational contexts (albeit extended to remote working contexts, and continually arguing for a more nuanced and holistic approach to the boundaries of work). As such, office environments, home working, and the omnipresence of the smartphone have been key areas of study. Notable exceptions have investigated the complex worlds of outdoor work, such as Symon & Pritchard's (2015) study of 'Rail Engineering'. The gig economy, however, requires this be taken one step further.

By its very nature, bike messenger work does not fit neatly into any simple, bounded definition of 'workplace'. The assemblage of body and bike – coming together to create a 'rider' (see 'interlude 2 - Meet the Rider' below) create a certain kind of intimate space (Day, 2015), whilst the city in all of its complexity makes for a very difficult and diverse workplace to define. Indeed, the bike messenger's job requires riders go in and out of the workplaces of others – such as restaurants, offices, hotels, and homes. This resonates with Massey's (2005) conceptualisation of space as 'bundles of trajectories' we pass between as we go through life. The

courier's trajectory falls into and out of bundles of others which whom they interact with in their work (chefs, waiters, PAs, reception staff, cleaners, concierge, etc).

In the gig economy, the city is the primary space in which work is physically performed. As such the latent capabilities and functions of the riders' smartphone, the ways they are used by platform technologies, the riders' body and bike, and the city in which they are working come into constellation to construct the rider subject and the possibilities open to them. Although the platform cannot materially organise urban space to suit their own ends and make delivery more efficient, they do actively seek to organise and manage workers' movements through urban space, via their smartphone app and associated technologies.

Whilst the organisational spaces of white-collar platform employees (such as coders, C-suite executives, marketing, PR and UX staff) is the glossy office environment, the riders who rely on the markets and tools their white collar-counterparts create have more complex conceptualisations of organisational space. It is a far cry from the cool office with the free food budget. Instead, riders work in the city, without shelter, without sanitation facilities, a lunchroom, or central heating. They exist in and through the complex space of flows (Amin & Thrift, 2002) that comprise the multi-faceted working environments of the urban arena. There is a clear organisational space - the platform's app - through which they receive work, update the platform on their progress, and generate data useful to the platform. However, they also exist in the city that neither they nor the platform can hope to fully control or exert meaningful influence over. From the riders' perspective, their movements through the city on a macro-scale are dictated by the platform's set of instructions taking them from pick-up location to drop-off. However, this organisational rendering of space becomes entwined with the semi-organisational spaces of the city; of small gaps between cars, of pedestrians stepping out in the road under your wheels; of the heating fans that pump warm, patisserie and coffee flavoured air from the side of a *Pret A Manger* and give some relief against the harsh cold of winter. This space requires skill to navigate successfully and must be navigated efficiently in order to satiate the otherwise insatiable diet for efficiency

and control the platform's organisational rendering of space demands.

What emerges from this complex interplay of organisational space, non-organisational space, and organisational attempts to organise the unorganisable space of the city, is a distinct sociomaterial assemblage that both constructs the rider as an active agent within this assemblage, and simultaneously limits their behaviour within permeable boundaries, providing moments of agency for riders to assert their working identity in others. To incorporate and subsequently investigate all of this complexity this thesis follows Lefebvre (1991) in applying a triadic framework to conceptualising the gig economy. Thus, the gig workplace is comprised of the city-platform-rider that form the basis of the field site. These triadic relations create a dialectic wherein one element seeks to dominate the other two. In platformised delivery work, the battle for domination between platform and rider plays out across the urban spaces in which riders work, and which platforms seek to understand. For Lefebvre (1991), the city is a space of capitalist production and so therefore is not neutral in this process, but rather is tied into the ongoing development of capitalism in contemporary society. By understanding contemporary gig work, we can begin to unpick the changing modes of (platform) capitalist production and the impacts it is having on our urban spaces.

For Spinney (2006: 717) "the bike and body are thus produced as one: refined and maintained in conjunction with each other through and within movement" that occurs within a specific context. As such, the gig rider; whose practice of riding is informed by platform logics, becomes a particular *type* of rider. The next chapter will explore who this rider is; and the ways in which they develop highly skilled working practices as a direct result of being thrust into this sociomaterial mangle; relating to both their skilled engagements with their own bike and body, and their skilled engagement with the urban environments they traverse.

Interlude 2 – MEET THE RIDER

"A rider, said Anquetil, is made up of two parts, a person and a bike" Tim Krabbé, *The Rider* (2002: 5)

"The gross and net result of people who spent most of their natural lives riding iron bicycles over the rocky roadsteads… [is] their personalities [become] mixed up with the personalities of their bicycle as a result of the interchanging of the atoms of each of them and you would be surprised at the number of people in these parts who are nearly half people and half bicycles...when a man lets things go so far that he is more than half a bicycle, you will not see him so much because he spends a lot of his time leaning with one elbow on walls or standing propped by one foot at kerbstones." O'Brien, *The Third Policeman* (2007 [1967]: 88)

I2.1 – Introduction

Throughout this thesis, gig economy couriers are referred to as 'riders'. At points in this introduction to the rider, you will meet the rider-researcher (me), at others, you will meet riders more generally defined and characterised as a group. 'Rider' has been chosen as a term for three reasons. Firstly, platforms refer to workers as 'riders' in their direct communications with them, be that a 'Mercury Meals Rider' or an 'Iris Delivery Rider'. Consequently, adopting this terminology does important work to appropriate the term back from its corporate usage (where it doubles up as an euphemistic cover-all to avoid terminology such as 'employee' or 'worker' that have legal ramifications) and return it to the purview of the working body as emerging through the skilful navigation of social and material elements within a complex urban-organisational context. Secondly, 'rider' distinguishes the specific mode of *riding* in which gig economy couriers partake, informed by the inherently stop-start nature of the job as interrupted by frequent breaks to pick up or drop off food. Skill development may influence their broader approach to cycling; but in the gig economy this riding style is particular and unique. Finally, 'rider' acts as a lexical bridge to academic and literary discussions of cycling and traditional bike messenger work that proceeded this study (Krabbé's, 2002, *The Rider* for example), whilst also acknowledging the difference between the sociomaterial realities of each kind of work. Unlike traditional couriers who are managed by human controllers, platform riders are remotely managed through an application built on algorithmic readings of the city. Whilst there used to be the need for messengers to manage and negotiate a very human relationship at work with often volatile, but at least knowable, controllers, platform riders must negotiate a relationship with an often

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volatile but unknowable assemblage of labour distribution and management algorithms. As such, the 'rider' becomes a critical lens through which to develop, make knowable, and therefore analysable, the triadic relations of platform-city-rider.

For Spinney (2006: 717) the 'rider' is made-up of two parts, "the object [bike] and subject [body]" that "develop in conjunction with one another through practical use." Over time, the riders' assemblage of bike and body becomes a "…place of sense" (*ibid*.: 717) through which to understand the world. By developing this place of sense in tandem with a sense of place of the environments in which they are working, riders are enabled to carry out their work effectively as they careen through the city at speed. Once this place of sense is sufficiently tuned and calibrated to the regimens of riding and the city, the rider is better placed to perceive the world as it unfolds in front of them in real time. Critical to this perception is the active enrolment of the senses into work.

In developing a place of sense on the bike, riders are better equipped to develop a sense of place in the areas they work in. For Ingold (2000: 158), "as perceivers we select from all the stimuli falling on our senses only those that interest us, and our interests are governed by a pattern making tendency." For Luiselli's, (2013: 36) leisure rider, this pattern appears because the cyclist can find "just the right pace for observing the city and being at once its accomplice and its witness". Returning to Spinney (2006: 725), "the senses are thus shown to exist as aspects of the functioning of the whole body in movement, in conjunction with the environment. Any one sense draws in the others to enable more accurate apprehension." By developing sensory awareness through work, riders are able to attune their place of sense/sense of place to the demands of gig work.

This academic discussion of the sensual and bike/body/environment conflux echoes a broader narrative that emerged through my diary entries and interview discussions in far less complex terms. That of "becoming one with the bike" (Tim, Interview, January 2018). This relates to the total sense of familiarity and comfort

riders feel with a bike they have spent a long-time riding and that is in good condition. It represents an extension of the sensing body into the very material of the bike as it forms a direct interface with the city, something Day (2015) terms the 'Cartesian Centaur". But the Centaur, like the rider, is half human, half other, and as I observed of better, more experienced riders moving through the city "it feels as though it's hard to tell where the man ends, and the bike begins." (Ethnographic diary, February, 2019) This highlights the ways in which the body develops according to its capacities and how they are extended through interaction with tools (Ingold, 2000).

My tool of choice (and necessity) to begin with was a second-hand hybrid bike with badly damaged gears and a clunky aluminium frame. Whilst I loved it dearly, the bike was continually degrading underneath me and the strain of the work, with seemingly endless maintenance bills and mishaps that would nearly land me in accidents. As a result, I was forced to expend much needed attention on sensing the bike and its feedback to me, rather than on the city I was moving through. This meant constantly seeking a eurhythmia with my bike in place of seeking the much lusted after, yet illusive, eurhythmia with the city. For example, I often found myself feeling with my legs and listening with my ears for the characteristic change in pull or click that signals I'd successfully changed gear (which on this bike, was a lottery at best) over and above what was happening around me. I was constantly distracted; prioritising getting the bike-body collaboration right ahead of the city-platform-rider collaboration.

A rider's choice of bicycle becomes a reflection of both their riding style and of their skill, fitness and finesse. After a while of struggling with my old hybrid, I opted to switch for a new single speed bike with a track geometry. Upon purchasing, I fitted clipless pedals, as well as replacing the stylish drop handlebars with more practical upright ones that would give me a better perspective on the city from an elevated position. This reflected my progress to an aggressive frame geometry, capable of more agile movement, whilst also remaining committed to being able to see the city around me. I also switched to riding with a fixed rear wheel that meant the back wheel and pedals turn in unison and cannot be unsynchronised in free 'rolling

movement'. In practice, this created a single being attached through the material interface of the pedal and shoe that - over much time and experience - gave me a single, unbroken sensorial line, from eye to brain, to heart, to leg, to tarmac via the pedal, chain, wheel, and tyre. As such, I could pick-up on the small changes to the road surface and respond accordingly. Similarly, because I only had one gear, the extra distraction of sensing if the bike was changing in and out of gear was gone, allowing my focus to rest solely on the road.

Riding 'fixed' also shaped my visual senses and the ways I interacted with the city. Although I kept both a front and back brake, riding fixed encourages the rider to not rely on the brakes and instead slow the bike by exerting reverse pressure on the pedals to slow the rear wheel. Whilst this provides very fine motor engagement and response to the undulating flows of the city at speed, when wanting to come to a complete stop, this method can be slower than brakes. As such, my eyes moved from the road only a few meters ahead of me, up towards the horizon in an attempt to take in more of the environment and be better placed to anticipate the actions needed. As I became more familiar with the city and relied less on the platform app for directions, I was further liberated to look up. In this way, my gaze was altered by the bike I was riding, my experience of the city, and my own riding style, impacting the way the city became rendered as inputs in my cognitive attempts to create a sense of flow through smooth riding. I became less distracted by the quotidian nuances and malfunctions of my old bike, whilst being opened-up to a wider field of sensory input through the distributed enrolment of the senses into my new bike. Furthermore, I was able to read much finer detail of the environments I was passing through, which in turn allowed me to approach the city in a smoother, flowing manner. In a sociomaterial sense, the development and application of skill emerged over time from the co-constitutive entanglement of the material and the social in my everyday working life. The change of bike gave a greater capacity for sensing finer details and reacting with fine motor responses through the greater sensitivity afforded by the machine. Thus I deployed my body and bike as a more finely tuned *place of sense* to develop a correspondingly finely tuned *sense of place* to facilitate smooth, flowing riding through the complex urban environment.

Whilst this represents my body and bike working in unison, this wasn't always the case. This intimacy is enabled by continual maintenance of the body and bike. The next section looks at how the body and bike were maintained, concluding with a brief reflection on how the demands of the work precipitate changes as bodies and bikes meld together over time.

I2.2. Maintaining the Body

In general, cycling improves bodily fitness, extends life-expectancy, and provides a broad range of mental health benefits (Oja et al, 2011). However, when cycling all day for a living through dense urban traffic and against the clock, the toll of work on the body can begin to take effect. For example, knowing when you're hungry is a must for riders who will be working full days on the bike. This embodied sense of the self, and fine-tuned ability to understand what the body is calling for is essential in staying safe and productive on the road and avoiding mistakes or lapses in concentration. If not managed correctly, the result is everything grinding to a halt:

"The man with the hammer came for me today. I nearly blacked out on a long job. Coming up from Brixton, I knew I was hungry but by the time I'd got to halfway through Hyde Park, my body just gave in. I sat there for 20 minutes, chewing through a bag of mixed nuts, breaking them down as much as I could in my mouth, hoping the calories would get into my blood stream quicker and allow me to carry on." (Ethnographic Diary, October, 2018)

The need to eat is an ongoing chore for full time riders. In a typical shift I would burn between 3000 to 5000 excess calories depending on terrain and distance. This means consuming 5,500-7,500 calories per day. Whilst this sounded like a dream come true for someone like me – harbouring a proclivity for pies and other complex-carbohydrates in all of their delicious forms – the demanding nature of the work and the limited financial remuneration made it difficult. Healthy food is expensive, and 6000 calories of salad is more than I could reasonably chew my way through or carry

around all day. The reality is meals snatched in moments of quiescence between peak times, supplemented by high calorie snacks like Snickers bars and dextrose tablets. An extract of a daily food diary highlights my calorific intake:

"Breakfast: Porridge, double portion: banana; handful of nuts

Second Breakfast: two Danish pastries

Lunch: double portion of Hare Krishna from outside SOAS (chickpeas, pasta, rice, potato curry)

Afternoon snack: King-size Snickers and a 1L bottle of Lucozade orange

Dinner; pasta (double portion)

Supper: Toast

… + 7 litres of water, 1 clearance tuna sandwich, rice cakes, and ~18 cigarettes" [Ethnographic Field Diary, April, 2019]

There were also changes in how my body excreted all this extra input. On hot days, I drank my way through 7-9 litres of water, and would only use the bathroom once in 10 hours. Conversely sweat would be pouring through my skin and aggregating in the cotton t-shirt or spongey pads built into courier bags that would later crystallise in salty tidelines to demarcate the effort expended in the day. This felt unnatural, and not the sign of my body working in its normal state.

Over the course of the research I still lost weight; ending my time as a courier 15 kilos lighter than when I started. Cant (2019a) and Waters & Woodcock (2017) both note the difficulty of satisfying the insatiable diet of the courier, in addition to the unavoidable irony of working to deliver food whilst struggling to find time or money to feed yourself. Knowing when the body needs fuel is essential in successful courier work, providing the power to fuel the bike.

I2.3 Maintaining the Bike

I cycled approximately 5000 miles during my time in the field. Given the set-

up of my bike, (45 teeth on the front chain ring, 17 teeth on the rear chain ring, and 28-inch wheels) we can determine the gear inches (74 inches, i.e. the number of inches travelled for each complete rotation of the pedals) which means my legs completed approximately 4million turns of the cranks over this 9 month period. Naturally, this kind of wear on body and bike is exceptional; but even then, only goes part of the way to covering the kind of miles of a full-time rider (i.e., someone working full-time all year round) whose mileage (at a conservative estimate that assumes riders only work five days a week at the lower end of the mileage estimate) is 13,000 miles. Through such sustained use, the body calibrates to the bike, and the construction of the rider (i.e., body and bike assemblage) as a place of sense became more complete. The work is as tough on its steel and rubber as it is on the bone and flesh of the body and mind, so knowing when the bike needs maintenance is a key part of the job.

I observed through interview and workplace discussions, three typical approaches to bike maintenance taken by riders along a continuum of expense and skill. The most expensive and least skilled approach was to always get a professional to fix the bike; the most skilled and least expensive was to undertake all repairs yourself. The most common middle ground was doing most simple jobs yourself, whilst leaving more technical work to a professional. The IWGB estimates the average cost to maintain a messenger's bike and body is 20 pence per mile (Field Diary, August, 2018), demonstrating the significant impact it may have on earnings.

This meant that most riders knew how to; change a tyre or inner tube, tune their brakes or replace wheels and brake pads after significant wear. All these processes can be done quickly and efficiently on the job, with a handful of inexpensive tools. Some couriers would attempt more complex work such as trueing wheels or running new brake cabling. Fitting new parts such as a crank set was the realm of the professionals; these are the engine rooms of the bike and, as the site of power transfer from body to machine, take the most sustained wear. Similarly, for those with gears, the derailleur was often left to the professionals as they are one of the more complicated parts that if set-up wrongly (for example poorly indexed gears)

can lead to expensive damage to other areas (gear-cassettes) and massive losses in efficiency of energy transfer.

To learn these skills, some key resources were critically important. Independent bike shops provide information to riders if they come in seeking advice; offering to educate as well as fix the problem (often at a courier discount of 10%). Similarly, resources such as the London Bike Kitchen's (LBK) 'drop in DIY' workshop were frequented by couriers who would pay a small fee (£14 per hour + parts) to fix their own bike under the guidance of a trained mechanic. Given the typical cost of a mechanic's labour (£40 - £60 per hour + parts) and LBK's commitment to teaching you how to fix the problem yourself so you didn't need to come back again, representing both an immediate saving, and an empowering knowledge transfer. Knowledge transfer also happened in online spaces, such as the biblical *Sheldon Brown's Technical Bicycle Info* (Brown, no date) website.

To know when the bike needs attention, the relationship between the rider and the bike is key. Whilst a perfectly set-up bike should run in near silence, every courier will be the first to tell you that their bike has its own personality and set of quirks that they recognise and collaborate with. The saddle on my bike, for example, has never been the best and I've never had the money to replace it. However, through hours of sitting on it, I know when it feels like everything is working, and when a failure is imminent, meaning I can take extra precautions.

Ultimately, riders become able to sense most problems with their bikes before they manifest into larger issues. For example, the chain stretches over time and use, resulting in a latency between the pedals and the back wheel. Once riders feel this starting to happen, they will fix it quickly. Due to the interlinked nature of key bike components, particularly in the drive chain, the failure of one part can result in excess wear to other more expensive and difficult to maintain areas. In my case, when I first started work with a geared bike, I allowed the chain to wear too much, which in turn damaged the gear cassette and created an expensive and difficult problem to fix (it would have cost more than I paid for the bike in the first place to

repair). Whilst the chain was the main issue (a £10 part with a minor labour cost, or replaceable myself) it destroyed the gear cassette (a £60 part, plus labour). By knowing the bike and sensing problems early to take corrective action, experienced couriers save expensive parts and mechanics' labour time. Similarly, an issue with a brake pad (a £5 part) can destroy a wheel rim, that can cost anywhere from £60 to £150 to replace. By sensing issues with the brake pads early, communicated by the haptic feedback it offers the hand whilst stopping, riders can take pre-emptive action that will save time and money in the long run. As such, riders develop a distributed 'knowing' of both their own body and the sensory feedback their bike gives them. It is only by being in tune with the bike and the signals it gives the rider that maintenance can be done on the tight budgets couriers have to work with.

Ultimately, this need to be able to maintain and sense issues often prompts riders to make specific choices about the bikes they use to ride for work. This is also informed by fashion (Kidder, 2016; Fincham, 2006; 2008) as trends in the messenger community have gone from mountain bikes, to road bikes, to track bikes over time. Track bikes only have one gear, and often only have one brake. There are significantly fewer, easier, parts to monitor than in the case of geared bicycles. However, this further interplays with the local geographies in which a rider works. In London, it is possible for even relatively unfit (i.e., me) riders to use a single speed bike because of its flat topologies. In Brighton, track bikes are rendered impractical as the effort expended to get it up the city's large hills would shorten the riders' shift and earning potential. Similarly, the salty air blowing in off the sea erodes the steel frames preferred in London for their strength and durability, and as such, experienced riders in Brighton will often opt for aluminium, given its material resistance to rust. In sum, the material realities of the bike, the sensorial receptiveness of its rider, and the broader urban context through which it travels are all key determining factors in the choice of machine and the knowledges of the city it facilitates.

I2.4 Melding the Body & Bike

Couriers become hardened to the physical stresses of undertaking the job

that train their bodies to endure more over time. This is particularly acute at the main site where the body and bike meet, the saddle. The early days of my life as a rider are characterised by an ongoing battle with saddle sore:

> "There's nothing worse than having to get back on your bike for a second day of work, knowing you've got to go for 9 hours and feeling like you can't sit down from the start... Knowing how bad it'll be makes it worse... then you try to sit on a different bit of your arse and that just gets saddle sore. By about Thursday you're in real trouble." (Ethnographic Diary, December 2018)

Gracefully, I was joining a long line of cyclists in locating the derrière to be "the locus of historic dramas, of furious boils, of sneaky swellings..." (Fournel (2012: 112). However, over time I noticed that the excruciating pain began to fade, and just like Fournel, it became the location "of a particular intelligible sensitivity. With my eyes closed I'm sure I could recognise, just by sitting in the saddle, the texture that a road long ago inscribed in me." (*ibid*: 112) In essence, my body became calibrated to the realities and materialities bound up with the job; my soft flesh taking on the hardness of the city just as the chefs whose food I was picking up had developed 'asbestos fingers' through a continual process of burning and re-healing the skin on their fingertips. My body's sensory capabilities were shaped by – and tailored to – the occupation I found myself in. Being able to translate these newfound sensory abilities into action was an essential part of performing the work well over time. Similarly, I developed an ability to withstand various elements the British climate throws at anyone who works outside. I could cycle through scorching heat, driving rain, and frozen vistas as my body altered to the demands of the work, (un)covering myself with clothes to protect me. In the face of this evidence, it becomes practically impossible to conceive of platform work as digital or immaterial; reflecting the need to consider the riders' labour in the round, rather than as an explicitly digital experience.

Even the materiality of the air in London becomes bound-up in understanding the rider's bodily experience. Throughout the research, London's air was considered

'illegally' polluted, with micro-particulates from petrol and diesel burning vehicles being pumped into the atmosphere all day long. Being a platform rider on the road gives you a distinctly first-hand experience of these. The metallic taste of a bus and the warm suffocating blanket of fumes being pumped out their exhausts combined with the tobacco smoke being ingested at regular intervals to give me a persistent cough and rattly chest. Whilst I could have given up the smoking, being a rider is hard and I found respite at the bottom of my tobacco pouch.

Ultimately, despite the diet of saturated fats and cigarettes, my body felt the fittest it had ever been. However, the extreme conditioning and disproportionate growth of some parts of my body at the abandonment of others became pronounced. Cycling is a whole body workout but the gyroscopic motion of the bike put less emphasis on my core for balance than my legs for power. By the end of my fieldwork, my thighs and calves looked equal parts grotesque and statuesque. Meanwhile I still sported a (reduced but present) paunch around my middle. Now, as I sit to write this thesis, the muscle in my legs appears to have relocated as more comfort weight at my waist. I am wearing the socks I used to wear whilst out on the road. Where they used to fit tightly, they now dangle limply (and frustratingly) around my ankles, with elastic overstretched to near comic proportions. In reality, they simply reflect the changing shape of my body having left the field; the absence where bulging calf muscles were once built to withstand the demanding physical realities of working full time as a rider in London's gig economy.

Chapter 6 – ALGORHYTHMS: DEVELOPING AND DEPLOYING SKILLS AT THE INTERSECTION OF PLATFORM AND CITY

"No man ever steps in the same river twice" Heraclitus (535-475 BC)

"No rider ever cycles the same Oxford Street twice" Adam Badger (Ethnographic Diary, January, 2019).

6.1 Introduction

There is a body of cycling literature growing out of the way cycling encourages particular modes of being and philosophical thought. For Krabbé (2002: 33-34), who road raced among the French cols, it turned his mind into "a monolithic ball bearing, so smooth, so uniform, that you can't even see it spin. Its almost perfect lack of surface structure ensures that it strikes nothing that might end up in the white circulation of thought." For cyclist-poet Fournel (2012: 143) the practice of cycling is tantamount to the practice of life itself, opening him up to new ways of seeing and being in the world: "the cyclist is his own gyroscope. He produces not only movement but equilibrium." For courier-academic Jon Day (2015: 15), "cycling, like writing, forces you to think not just in terms of individual steps but in terms of conjunctions, routes and structures: how am I to get from here to there? How exactly will I navigate this particular snarl of metal and rubber and steel and chromium? How will I get to the end?… The rhythms of movement provided by cycling seem perfectly suited to the writer's need to notice." In reality, we all have different experiences of cycling, informed by the contexts through which we ride. Being a courier is one specific way of *being* a cyclist.

For Spinney (2006: 717) "the cycling anatomy - of both bike and rider - does not come ready made; it is crafted through the cultural practice of cycling. There is a need, therefore, to study artifice rather than artifacts…", to understand knowledges that are largely implicit and "deeply embedded in the particularities of experience'' (Ingold, 2000: 369). As such, a good velodrome racer is not necessarily a good mountain climber. Similarly, a good courier is not a good velodrome racer nor a

mountain climber, and vice versa. As a gig economy rider, I was moving simultaneously through the unknown technical worlds of the platforms I worked for and the messy urban worlds of the city I was in. My body was the point of translation between these two realities, not really distinct, but interwoven through each others' realities. In the gig economy, there is no totally abstract digital space, neither is there totally concrete urban space. The task of the rider is to take these worlds and join them together in movement, accompanied by a package on board as they trace lines from A to B and onwards. Their bodies and bikes come to reflect the stop-start nature of their work and the need to jostle with urban traffic, rather than the climate controlled wooden boards of the velodrome or the snowy peaks of the mountains.

This chapter investigates how the nature of gig work shapes the bodies and minds of the riders that participate in it. It begins by very briefly examining problematising definitional frameworks of 'skill' to establish the feminist readings of embodied skill upon which this thesis builds. This is followed by two ethnographic field diary entries – taken from the first and last days in the field. By juxtaposing these two vignettes, the role of skill in negotiating this work and being successful at it is rendered clear, providing the counter narrative to assertions that gig work is somehow low or unskilled and therefore deserving of its low value. An understanding of rhythm is positioned as central to this skilled work and therefore the next section of the chapter addresses 'algorhythms' as the meeting point of technical and analogue rhythms in space. This informs the following discussion of 'routings' that exposes the rich details of platform work – moving from 'macro-routings' that inform riders of the directions they should travel, to 'micro-routings' that involve the conscious and sub-conscious deployment of skill in navigating urban space to accentuate the gulf in difference between knowing where something is (macro-routings) and actually being able to get there (micro-routings). Finally, this becomes the basis for an exploration of 'flow' as the ultimate experience of skilful work in the gig economy. The chapter concludes by arguing that gig courier work is akin to jazz, requiring a rhythmic understanding and ability to apply a corpus of accumulated knowledge and skill in an improvisational manner to create eurhythmia in an otherwise complex, noisy and polyrhythmic environment.

6.2 Problematising definitional frameworks of 'skill'

Before embarking upon an exploration of riding in the gig economy as a skilled form of work, more needs to be done to problematise already existing definitional frameworks of 'skill', such as The International Labour Organization's (ILO) International Standard Classification of Occupations (ISCO). It defines 'skill' as "the ability to carry out the tasks and duties of any given job" whilst "skill level is defined as a function of the complexity and range of tasks and duties to be performed in an occupation." This measurement of skill is comprised variously of:

- "The nature of the work performed in an occupation…
- The level of formal education… required for competent performance of the tasks and duties involved; and
- The amount of informal on-the-job training and/or previous experience in a related occupation required for competent performance of these tasks and duties." (ILO, n.d.)

This poses a conundrum for the conceptualisation of skill in the gig economy. Platform riders perform a job that is invisibilised and pushed to the edges of society. They require no formal education or previous experience, nor are they offered any on-the-job training (possibly not offered as platforms attempt to maintain the bogus self-employment status of their rider workforce, see Cherry & Aloisi, 2016). However, they go to work every day in immensely complicated cities and risk their lives in the performance of their duties. Indeed, the only thing that keeps them safe is their ability to skilfully engage with urban landscapes that are often hostile toward cyclists.

The closest fit in this framework to food delivery work in the gig economy are "messengers, package and luggage porters and deliverers" and "hand or pedal vehicle drivers". Both are classified within the group "elementary occupations", the

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"lowest" skilled of all (ILO, 2004a; 2004b). This problematically re-enforces the notion that riders are unskilled workers, and thus somehow undeserving of higher remuneration.

As this thesis has already argued, riders develop skill through their engagements with their work at the point of translation between top-down and bottom-up (lived) labour process elements in their efforts to skilfully manage their data labour and disentangle their corporeal actions from the data generated through platform surveillance of these actions (see chapter 5). It has additionally argued that riders (through bodily skill) develop a particular sense of embodiment that includes the bike, the city and the platform app via their smartphone (see Interlude 2).

Whilst a rider's proscribed duties (on the surface at least) may appear to be low skilled in ISCO categorisations, or indeed in the public consciousness, it is the particular way in which knowledge and skill is embodied (Grosz, 1987) in movement through the city that problematises these classifications. For Spinney & Popan (2021: 141-2) this is represented by the rider's ability to "juggle such complex tasks, while also running red lights, avoiding a dangerous area, rejecting an order from a restaurant with long waiting times and still delivering an undamaged pizza on time, mak[ing] the difference between a successful and respectable messenger and a less effective one" These observations build-upon feminist conceptualisations of social reproduction, affective labour and the body to encourage a line of questioning that undermines the misclassification of riders as 'low' or 'unskilled', just because these skills are unseen, undervalued, and often incur the onboarding of risk or violence to the worker's body (Gregory, 2020). The remainder of this chapter will explore the embodied nature of skill at work in greater detail, by paying particular attention to the affective capacities of the 'rider' ("to both affect the world and be affected by it" White, 2008: 183) within the triadic relations between city-platform-rider.

6.3 Developing Skill: Reflections on novice and experienced work

For most of my participants and I, work took place in London and comprised of moving packages around from A-B in relatively tight geo-fenced zones. This was the same London that Sinclair (1975) walked through in his search for the occult, the same London of Raban's (2008 [1974]) *Soft City*, and Selvon's (2006 [1956]) *Lonely Londoners*. It's the location of Bowie's (1970) *London Boys* and the city that called out to The Clash at the height of the punk scene. It's one of the most diverse cities in the world. But just as it was London for all of these artists, my time spent riding was in a different London, understood through the eyes of a platform rider, and the particular sensibilities and ways of being in the world this engendered. My London - full of intimate knowledges and happenings that occurred at the intersection of my own self-directed movements and those orchestrated by the platforms for which I worked. Much of the time, I was confined to the city's eastern corner, the EC postcodes that contain The City and stretch into E2 and E14 to the East, or the WCs of the theatre district and SW1s of Parliament to the West. This was the theatre in which my experiences – like those outlined below – played out. The first is taken from the diary entry of my first day as a rider for Iris Delivery. The second is from my final shift as a rider for Iris before leaving the field:

"I knew it was going to be tough but nothing like that bad. Although I thought I know roughly how to cycle in London, I realised pretty quickly today that I don't. I'd confused experience of my daily commute from Limehouse to Senate House for some sort of general competence I don't have. Fool… The traffic pushed me around like I've never experienced before. Usually I just use cycle lanes and a few roads I know, but today everything just seemed to bully me into tiny spaces on the road and I just kept getting caught with nowhere to go, blocked in by buses and taxis and vans. When I did move, I kept getting pushed into potholes that shot straight through my saddle and into my arse and spine (followed by turning the air blue…). It felt like being one of those inflatable men they have outside of tyre shops that flaps its arms everywhere. Lots of being pushed around by the elements but not really getting anywhere very quickly. Not only that, London seemed like it was mega loud today. Like the traffic is always loud, but the difference between being next to it on the pavement and being in it on the road

is crazy. It roars… It's sensory over-drive; like everything is coming for you and if you make one mistake it's going to hurt. What made it worse was that I felt huge and all the gaps between cars in traffic looked tiny. Like a fat cat with tiny whiskers. Less square peg round hole, more camel and eye of needle… None of this is helped, of course, by being lost all the time, second guessing every move I made with my phone to make sure I hadn't made a mistake in the gap between my movements in space and the lagging movement of the arrow that represents me on the screen. I thought I'd got a working knowledge of London, but go one street off a main street and I may as well be in a new city… I didn't know where any restaurants were either… so that took me ages to find everything even when I got there… I ended up checking my phone every few seconds to make sure I was going the right way, on time, etc. I feel like I spent half the shift staring at the phone and not at the cars in front of me. And when I arrived at my first pick-up, I had to ask the girl behind the desk at Burger King how to use the app and go to the next screen so I could see the order number. How embarrassing…" (Ethnographic Field Diary August, 2018).

When beginning work as a rider in the gig economy, my first impressions were of being totally overwhelmed. It constantly felt like *everything* was happening *all of the time*, and much of the 'stuff' that was going on seemed on a direct collision course with me as I haphazardly lolloped through the city carrying an unwieldly large backpack at below-moderate speed. I felt every ounce of my lack of experience weighing heavily on me as I tried to move through the city delivering packages. For Spinney (2006: 718) "it is through rhythm that riding is inhabited" and that these "rhythms are intrinsic to movement but are not innate." Because I was totally unskilled, I was unable to find the rhythm of the work or the city, so I did not feel like 'rider' or someone 'riding' particularly well in these early experiences. The dislocation between the rhythms required for movement in this job and my own inability to find them highlighted the skilled nature of the work (albeit through vast absences in my own skill sets). If the work really was as unskilled as people said it was, then I should have been able to just do it without hesitation, training, or experience. The fact this is not possible is testament to the skilled nature of the work. In reality, platform

riders cultivate rich understandings of both bodily and urban rhythms, deploying them to ride both quickly and safely through the city to make the intrinsic rhythms of movement innate. This is essential in creating the skilled experiences invoked in the final day extract below:

"I feel like Mickey Mouse as the Sorcerer's Apprentice – where he dreams of himself conducting the elements of the night sky and the waves as they move in response to his every gesture and command – harnessing the raw power of the uncontrollable. As I move through the city I feel at once like its conductor and it's choreographer, drawing sense out of the patterned chaos as I move through it. It's a new type of confidence that has come over me slowly as I've got better and better. It wasn't like a definite moment when it changed but now I feel like I can push the traffic around, rather than being pushed around like flotsam or jetsam like I did at the start. I'm obviously not always in this perfect flow all the time, but I am for a fair bit of the time I'm on the bike now. The traffic still conspires against me sometimes, like two buses boxing me in and trapping me in a steel cell with passengers ogling at me through their windows like a curio in an urban zoo. But this is rarer now, and usually, even if it's not perfectly smooth, I can keep moving at least. Along the bigger course of travel, I know where most places are, and the ones I don't are easy enough to find (I've developed a keen eye for spotting the well disguised restaurant…) That means on my way to a pick-up at least, I don't look at my phone so much so I can look at the environment, take it in, and plan my next steps. By knowing more about this larger course of travel, my mental processing is freed up to think about the smaller course of travel as I move across the roads to solve the ever-changing traffic puzzle. Because I don't look at my phone as much, my eyes are nearer to the horizon than my handlebars so I can see more, have more time to think, to react and respond. This has slowed my perception down so a minute of real time simultaneously feels like an hour and an instant as the present slips unnoticed into the past… I'm a big man on a big bike, but I've calibrated myself well. I know exactly how big I am and how big any gaps are (more specifically, how big the gap will be by the time I go through it, because they change all of the time with movement of the traffic). That really

helps with going quickly too." (Ethnographic Field Diary, April, 2018)

This extract from my final shift for Iris Delivery is in a dramatically different in tone to the first, recorded nine months earlier. Reading it back for analysis it feels as though I am in command of the city and I have the confidence to move through it at will. The difference between these accounts represents the difference in skill I had developed as a rider during my time in the field. If the work really was 'low-' or 'unskilled' then – logically – the tone of these accounts would be similar to one another. The remainder of this chapter explores the nature of skill in this work. An ability to perceive, 'go with' and make sense of rhythm was instrumental in that and forms the basis for the next section of my analysis.

6.3 Algorhythms

Returning to Spinney's (2006: 721) discussion of skill and the senses, "the development of the rider's habitus and practical know-how are inseparable from the development and affordances of the machine. The longer the rider and machine have to develop together the more pronounced and intimate becomes the symbiosis." For riders, the 'machine' is two-fold - encapsulating the machine of the bike through which the city is sensed and mastered, and the platform's algorithmic machine, processing and representing the city and the culinary marketplace operating through it. However, whilst there is a clear organisational space platforms can exert control over (the platform's worker app that distributes and manages jobs) they have little to no control over urban spaces, or the restaurants and delivery locations riders frequent.

This highlights the contested nature of organisational space in the gig economy. Accordingly, platforms are unable to directly organise these spaces beyond the app, however they do attempt to organise rider labour, which in turn must organise, or at least rationalise, urban space in an effort to respond to platform demands[25]. Part of

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[25] Following Lefebvre's triadic approach that asserts each element of the triad seeks domination. In this instance, the platform seeks to dominate the worker and city through controlling the labour process and the market.

the rider's job is to skilfully elide understandings of the computational with the complexities of the urban to successfully facilitate the offer of orders, their movement across the city and, by extension, the earning of a piece rate wage. As such, they exist in-between the algorithmic structures of the platform, the rhythmic processes of the city and their own body's position in it. This section of the chapter explores the point at which these forces collide, and how riders develop an algorhythmic comprehension to make sense of it all.

The term 'algorhythm' was coined by Miyazaki (2013: 135-6) to describe what occurs when "when real matter is controlled by symbolic and logic structures like instructions written as code: "'Algorhythms' let us hear that our digital culture is not immaterial, but lively, rhythmical, performative, tactile and physical." As such, they "oscillate in-between the symbolic and the real, between codes and real-world processes of matter". Whilst this thesis contests the unreality, or immateriality of the algorithm through a sociomaterial approach to technologies and their performative unfolding in space, what is useful here, is the theoretical elision of body and code as rhythmic interaction. Borch et al (2015: 1090) bring algorhythmic theorising to the workplace in their rhythmanalytical study of High Frequency Traders (HFTs) in the financial markets, uncovering "how bodily rhythms and market rhythms are reconfigured through technological developments". This thesis extends and nuances this work in the analysis of algorhythms in the context of riders in the gig economy.

Borch et al (2015: 1091) found that traders do not use their bodies as a market metronome, nor do they seek to merge eurhythmically with market rhythms. Instead, they calibrate their bodily rhythms to their algorithms (and thereby indirectly to markets)" (*ibid*. 1091). However, for gig economy riders, the situation is different. Firstly, they are not employed by the platform - whereas traders are generally employed by the fund they work for. As such, riders are directly reliant upon the market - and their knowledges of it - to make enough money to survive, whereas traders are reliant upon their salaries and overall health of the fund - albeit often complicated by generous bonus payments for performance. Furthermore, the material properties of the city are far more immanent for riders, for whom they

present a direct physical threat. For traders, the primary environment in which they engage with algorithms is the carefully climate-controlled office. If they make a mistake they may lose their job, rather than their life. Whilst 'the market' is volatile for both traders and riders, the workplace in which they encounter the market is very different. Critically, traders become rhythmically in tune with the algorithms they have been in part responsible for coding and creating. In the gig economy, the information asymmetry between the platform - who create, control, and administer the labour management algorithm - and the rider means that workers are unable to fully understand the algorithm they are managed by. Both traders and riders must calibrate their bodies to algorithms to indirectly calibrate themselves to market rhythms. However, the key difference between them is that whilst traders attempt to administer and manage algorithms, algorithms attempt to administer and manage riders. Therefore, their relative perspectives and engagements with algorithms at work reflect the difference in their relationship to algorhythms. Critically, this thesis extends Miyazaki's (2013) and Borch et al.'s (2015) work by bringing their theorisations of algorhythms into discussion with the rider subject who can only infer algorithmic process amid a complex urban environment, as opposed to the trader subject who can administer an algorithm from their office.

6.3.1 Navigating Algorhythms

Riders must navigate the clear organisational spaces of the platform's app through which they receive work, update the platform on their progress, and generate data useful to the platform. They also exist in a city that neither they nor the platform can hope to fully control or exert meaningful influence over. From the rider's perspective, their movements through the city on a macro-scale are dictated by the platform's set of instructions taking them from pick-up location to drop-off. However, this organisational rendering of space becomes entwined with the semi-organisational spaces of the city's streets. This space requires skill to navigate successfully and must be navigated efficiently to satiate the otherwise insatiable diet for efficiency and control the platform's organisational rendering of space demands.

As such, riders are enrolled into a skilful negotiation of the city that relies upon them knowing it. Indeed, just like traditional messengers, their "experience of London is formed by the demands and rhythms of capitalist circuits…" Day (2015: 5) as they work with and *through* the demand as dictated to them by the platform app they work on. They work not only through an understanding of the rhythms of the market, but also through developing and understanding how the platforms they work for internalise, process, and intervene into these rhythms through the active management of the labour distribution algorithm. This means riders develop both intuitive knowledges of the zone they work in, and how the platform behaves in that area. "The city exists as a space of flows woven through each other; flows of riders through streets and flows of information directing them as they travel along the electromagnetic waves that carry mobile signal" (Ethnographic Dairy, March, 2019)

Just like Borch et al.'s (2015: 1090) traders, riders 'discuss algorithms' at work as they come to know them. Critically though, traders discuss them as technical objects, referring to coding languages and softwares whilst riders, who are not informed of how the algorithm works, speak of behaviours and effects, anthropomorphising them as the businesses they work for. Iris Delivery riders would often comment to each other on meeting or in community chats "come in Operator [the labour distribution algorithm], I'm empty" mimicking the way traditional couriers would contact their operators or controllers to ask for more work over the two-way radio. This personifies the algorithm and sarcastically points to the workers' inability to directly 'speak' to it or fathom just how exactly it works. Meanwhile at Mercury Meals – who actively named their algorithm 'PHIL' - riders would check in with each other to gauge how the algorhythmic systems were playing out on any given day. A frequent question would be how's PHIL doing today?" (Ethnographic Diary, March 2019) as riders tried to ascertain if they were going to earn well or poorly in the hours that followed.

Riders discussed the ways they thought PHIL was giving them a rough deal, or any hints and tricks they had worked out to try and get PHIL 'onside' in an effort to "please the algorithm gods" (Tim, Interview December 2018). For Tim, PHIL took on

the qualities of an all-knowing, capricious, and suspicious manager that "was playing psychological games on an individual level" to elicit more work through coercive offer-making (*ibid.*). Similarly for Gus, PHIL came to represent a key issue for the procurement of work as he and other workers would "try out different things to see what would work… we'd also play PHIL chicken, where we'd all stand in a circle and reject an order if it was a shitty one. The person who thinks his stats are the lowest would end up having to take it." [Gus, Interview April 2019] As such, it became clear that PHIL had become an agent in the riders' work process, and one that they sought to satisfy through their bodily engagements with the city.

6.3.2 Calibrating to Algorhythms

These discussions of demand inform how riders come to know the algorithmic bosses that manage their labour, and the decisions they make at work:

"The offer of a £4.30 job to go 1.5 miles is different at different times. In peak times, it's not good because there's lots of other – better – work available that might be better paid for the same distance or take you less far from the busy parts of the zone but for similar money. When there's less jobs on though, it might be a good offer of work because there's less in the system so you might not be offered anything else if you reject it. So, the value of a job changes by the time of day, location you're in and how the rhythms of the platform and the city *feel* compared to other times. You have to try and gauge the market before you know whether to do the job or not" (Ethnographic Diary, April 2019).

This highlights how riders interpret the strength of the market by synthesising various inputs (time, place, feel, etc.) to ascertain the value of a job. However, the opacity of the platform's systems, combined with the volatility of a marketplace characterised by short, sharp peaks in demand makes this difficult.

Both Mercury Meals and Iris have taken efforts to illustrate some of the platform's rhythms of demand to riders. It is after all beneficial to the platform to make sure they show they are busy to attract enough riders to work at these times.

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Iris uses a mix of ad-hoc texts sent to riders (see figure 6.1 below) if demand is unexpected to get them on the road, or later, began using a 'multiplier' system that is published each week on Monday for the following week (Figure 6.2 below). This lists the 'boosts' that are planned in advance and signal to riders when there may be an abundance of work. Riders read this as "the higher the boost, the more the platform needs you" (Monzil, Interview October 2018) and therefore as a proxy for the display of market rhythms. Mercury Meals have a more sophisticated way of managing visibility of demand via a colour coded traffic light system ranging from grey for very low demand, green for regular demand through yellow for high demand and a dark orange for 'very high demand' (Figure 6.3, below)

Figure 6.1 – *Text message sent to riders from Iris delivery detailing 'LONDON REWARD's (June*

London		$\lightning$ **Multiplier** $\lightning$			
	Morning	Lunch	Afternoon	Evening	Night
	7:00 – 10:59	**11:00 – 13:59**	**14:00 – 17:29**	**17:30 – 20:59**	**21:00 – 23:59**
Monday				1.25	1.10
Tuesday		1.10		1.25	1.10
Wednesday		1.10		1.30	1.15
Thursday		1.15	1.10	1.35	1.15
Friday		1.30	1.30	1.80	1.20
Saturday		1.15	1.30	1.50	1.20
Sunday		1.15	1.25	1.30	1.10

Figure 6.2 – *Weekly emailed chart for 'Multipliers' – these are fixed bonuses to the wage that multiply the base value of each job and are pre-set at the beginning of the week. (June 2019)*

Figure 6.3 – *Live demand indications for 'normal' and 'very high' demand on Mercury meals (December, 2018)*

In the early stages after its introduction, riders expressed that they paid close attention to this traffic-light system to calibrate their own bodies to the platform's

relative market. By taking time to observe moments of high and low demand when working, or when away from work, by logging in periodically and checking the app, riders began accumulating knowledges of when they could choose to work in an effort to target the best paying opportunities. However, over-time, these representations of demand – pushed to riders through their mobile interface – became detached from the reality riders experienced on the road and in their invoices. This is a deeply frustrating situation, especially if you've left your home and decided to work as a direct response to the call for more workers in times of 'very high demand':

"So it said there was 'very high demand' today in EC, so I strapped on my uniform, grabbed my bike and cycled in. I sat there for a whole hour with 'very high demand' constantly on display and didn't get a single job. WHAT SORT OF DEMAND IS THIS?!" (Ethnographic Diary, December 2018).

Here, the representation of demand and the experience of demand were mis-aligned. I had come to work expecting to be going from job to job, and instead spent an hour sat on cold hard concrete. This became an increasingly common occurrence at Mercury Meals, and a point of increasing frustration among the workforce. It is provoked by information asymmetries that do not make clear to the rider what 'demand' is measuring. Does demand (as represented in-app) represent total order volume? Or does it represent order volume relative to the number of riders logged-on in a given area? The first is a representation of demand from the platform's perspective, the second is a representation of demand from a workers' perspective, of how demand is felt. The difference between these scenarios is 'how many jobs are in the system?' And 'how likely am I to be offered one?'. In lieu of the fact riders do not know what is being represented to them, they have begun observing the activity of other riders around them and the busyness of restaurants in order to calibrate themselves to demand based on experience rather than representation. This involves looking into popular restaurants that serve as an acid test. If they're full of riders, the whole system is probably busy. If not, the app is lying, or at least only showing a partial truth. Others "cycle past key waiting spots in the city to see if riders are

waiting and chatting. No riders means they're probably out on the road delivering, so there's probably more jobs. Lots of riders chatting means no demand" (Monzil, Interview October 2018). Readings of the city and observation of other workers either moving through the city or in stasis become a barometer for how busy the platform is, supplemented by the less trustworthy information offered by the app. Just like the difference between riders and traders, this illustrates that the key to how algorhythms are felt, is a matter of perspective, a person's relationship to the algorithm in question.

Elsewhere, riders have harnessed the customer - rather than the worker - app to measure the relative strength of the market. They are still attuning themselves to the algorhythmic nature of their work but choosing to do this through the information offered to customers via their interfaces, rather than through that offered to workers. I quote Gus at length here, as he eloquently explains how this innovative system works:

"Every time there's a boost or something saying "high demand" and it's outside of the normal pattern of demand like a Friday night, then I open-up the customer app on my phone and take a look… [Adam: Why do you do that?] Well, they have an estimate of how long you should expect an order to take to arrive at your house. That comes from how busy the restaurant is, and how busy Mercury is as a whole. So it's basically how long will the kitchen take to make the order, and how long will it take for a rider to get here. So, I have a baseline restaurant that does food that's rapid to prepare - it's an ice cream parlour - and I know that the estimated delivery time to my house at a really quiet point in the day is 15 minutes. So, if I check back when Mercury tells me its very high demand and its still 15 minutes then I'm fairly confident that they're lying to me. It costs them nothing to get us out on the road and logged in, so they want to make sure they have a surplus of riders all the time. If it says 30-45 minutes to deliver it to my house this means either the ice cream parlour is crazy busy, or, more likely, Mercury is really busy and that extra time represents how long they think it will take them to free up a rider to be able to take the order. Which for me as a rider,

means there's more work than the platform can handle, so there's going to be plenty of work for me if I log in." (Gus interview, January 2019)

Here, Gus elaborates on how he algorhythmically calibrated to the market by using what is offered to him in the worker app *and* through algorhythmic expressions of demand in other parts of the platform ecosystem. This becomes a proxy for how much work he might expect to receive and the wages he might potentially earn. He also factors in what he can observe from his bedroom window; of how busy Brighton is that day and the climatic conditions to make an educated guess as to whether his own algorhythmic metronome is calibrated effectively. Waiting time plays a performative role in Gus's decision making with regards to his own availability and willingness to provide labour for the platform. Whilst the 'resolution' (Ash, 2016) of representations of demand in the worker app are managed to disempower riders to really gauge the algorhythmic state of the market, the resolution of what workers can see in the city and how platforms represent demand to customers to manage expectations is made transparent. Gus also expressed that he does this semi-regularly throughout the year to calibrate his own internal sense of the rhythms of the city and the culinary markets that are a part of it. In a tourist town like Brighton there is a pronounced 'on' and 'off' season, for example. These tests allow riders to tune themselves to the real algorhythmic demand rather than algorithmic representations offered to them in the rider app, thus counteracting some of the information asymmetry that exists.

In sum, it is clear that algorithmic representations offered by the app are only part of the algorhythmic way riders calibrate themselves to the market on a daily basis. Riders have learned to become sceptical of the offerings given to them by platforms and instead synthesise these with their own observations to make informed decisions about if, when and where to log in for work. Their behaviour is informed by the 'pattern making tendency' of market rhythms so that what interests them, and shapes their movements through the city is their relationship to both the urban *and* the platform. By getting a sense of the broader market rhythms as they become manifest on/in/through the platforms they work for, riders are better placed

to begin making more informed choices about macro-routing decisions of where and how they work. This is the basis of the next section of the chapter.

6.4 Routings

To perform successfully, riders must be able to route their way around the city. For Kidder (2011: 77-78) traditional messengers engage in two primary types of routing: 'macro-routing' and 'micro-routing'. Macro-routings refer to the abstract, bigger movements riders make across the city, the directions they travel. These are the movements that can be plotted and drawn on a map. Micro-routings refer to the myriad small adjustments riders make in moving through the city – of swooping around a pothole or darting through a small gap in the traffic. They are the minor adjustments to road position that allow riders to move quickly through urban space and stay alive while doing so. In the traditional courier context, riders are left to their own devices to manage both macro- and micro-routings, developing intimate knowledges of the cartographic and congested city. Mercury Meals and Iris Delivery provide maps for their riders and calculate their pay based on the distances of the routes they recommend (note, not the route a rider *actually* takes). This naturally simplifies the macro-routing riders undertake but does not completely eradicate it. Furthermore, regardless of discussions of gig work that cast it as low skill, the micro-routing elements of this job remain the same. No amount of route planning can compensate for the skill needed to navigate past lorries, busses, cabs, and pedestrians at speed on a road surface suffering from entropic forces that leave it unstable. This section of the chapter explores the way couriers route their way through the city, borrowing Kidder's micro- and macro- routing framework and extending it to consider gig work. Whilst the ability to macro-route relates to knowing where something is, the art of micro-routing means really knowing *how* to get there.

6.5 Macro-Routings

For traditional couriers who do not have access to digital maps via their phones, macro-routing involves building-up a knowledge of the city's streets and addresses

by moving through and along them in the undertaking of their work, with the nature of their pick-ups shaping these knowledges. A traditional courier should have a generally good knowledge of central London. Medical couriers have highly developed knowledges of hospitals and private clinics, Harley St, etc. Couriers servicing the media and film industry know the West End. For traditional messenger Day (2015: 3), it was the intimate knowing of London's streets that were one of the most satisfying aspects of the job: "most of all I loved learning what London taxi drivers call 'the Knowledge'… parallel to that contained within the *A-Z* but written on the brain, read by leg and eye." It was these knowledges – and mystical abilities to apply them in moving themselves and their packages across the city unfathomably quickly – that gave bike messengers the folkloric identity of the 'urban cowboy' in the post-industrial cities they worked (Kidder, 2005; 2011). However, for riders in the platform economy, the incursion of digital tools into the labour process means this learning experience is complicated by the platform's omnipresence in the labour process through presentation of the map and directions.

This is exemplified by the way Mercury Meals riders in different cities develop different macro-routing knowledges and practices despite the relative homogeneity of the app's systems. Consider the Brightonian riders who use different bikes and deviate from suggested routes to make the hills more manageable (from Chapter 5) in comparison to London couriers who travel direct routes on flat terrain. As such, the unifying factor (the platform) gives riders a sense of shared approach that is tempered by the furnace of the spaces they actually work in. To investigate how this works in practice for riders, this section first develops and extends Ingold's (2016) conceptualisations of transport and wayfinding, before considering how these accumulated knowledges become manifest within the broader organisational contexts of the platforms that riders operate under. These are presented as two distinct bodies of knowledge – of the city and the platform.

6.5.1 Knowing the City

When first starting the job, being a rider felt like:

"Moving through a hybridised network that includes the digital networks of the platform whose instructions I'm following, and the network of locations joined together with the roads I have to traverse through the city." (Ethnographic Diary, August 2018).

I felt forever in transit between nodes, concentrating on the job at hand too much to really appreciate the mode of travel beyond the imminent dangers it presented (i.e. of dodging cars and pedestrians along the line between A-B). The inability to effectively micro route left me struggling to learn the macro-routing skills necessary for the job. Following routing instructions across the city as it played out in front of me, and along the clean cartographic route represented on my phone resonates closely with Ingold's (2016) cultural history of lines and movement, in which people 'follow threads' on their journeys through life.

Ingold (2016: 78-9) finds that there are two primary modes of travel along lines of movement, "transport" and "wayfinding". These refer to different modalities of movement that in turn, correlate to different experiences and knowledge making for the traveller. "Transport is destination oriented. It is not so much a development *along* a way of life as a carrying of goods *across*, from location to location…" whereas "…the wayfarer is continually on the move… he is movement". The job of the rider – at its most basic – is to transport goods across urban space from location to location. Their movement is the architype of transport. However, they are equally archetypal wayfarers, continually on the move and at times, the embodiment of movement itself. Whilst Ingold presents these activities as ontologically separate, these two modalities of movement are both present in the courier's work, and thus in the way they develop knowledges of the urban as how to macro-route their way around the city. In my case, this meant my knowledge of London developed over time "There was no eureka[!] moment where I could say 'I know London now'. I just didn't at the start and I did by the end" (Ethnographic Field Diary, April, 2019). This knowledge was forged over time, through the transport of hundreds of packages across thousands of streets that – when accumulated together – made me a wayfarer of the

city too. Through time spent transporting and exposure to the greater elements of the city, I developed wayfarer's knowledge – able to navigate on feel alone.

The two extracts below, taken from earlier and later-on in my fieldwork respectively show how this process developed over time:

"When you're in it, moving through a map of London feels like cycling along a noodle in a bowl of ramen, only less well organised… you're never really certain where you're going until you get there and when you do, you find out it's the wrong place." [Ethnographic Diary, September 2018]

"Pick a place anywhere East of Kensington Palace and North of the river and I'll get within a quarter of a mile without a map. I might need to check to get the specifics, but I can get really close without… it's odd roads that show me the way … Everyone knows Oxford Street and the Strand, but I find myself using Gray's Inn Road or the Theobalds Rd/Clerkenwell Rd/Old St run as the arteries through the city" [Ethnographic Diary, March 2019]

The second entry reflects what came to later be a repeated analogy of the city as a body, comprised of vascular networks of arterial roads - where the trade routes that I always found myself on, no matter what the job or the day, met labyrinthine capillaries of streets that took me to the final destination. Over time, the amount I had to look at my phone decreased and my ability to find my way either directly to the door of my destination, or at least into the neighbouring streets improved. This in turn benefitted my ability to ride quickly and safely through the city, in addition to shaping my ongoing relationship with the technologies of work. As I became more experienced, the lessening need to look at my phone meant I could spend more time focusing on the traffic, which kept me safer. When I did not know concretely where I was going, feel was enough to get me close as my experience of the city today connected to the not-quite ephemeral experiences of the same streets I had travelled in the past. This gave a sense of agency and skill that became critical to my identity performance at work, both to myself and to other riders. The absence of the

phone from my handlebars once I became experienced, and my confident body language manifest as interlinking flowing movements.

By the end of fieldwork, I pretty much always knew where the river Thames was in relation to my location, and could therefore work out East and West too. The lay of the land was my compass, as without knowing I began to internalise a topographical knowledge of my corner of East Central London. This is because bikes are topographical divining rods that make a gradient's presence known through effort in the legs as the correlation of exertion or relaxation that comes with going up or downhill. It wasn't until after leaving the field that I realised I was in fact navigating London based on the gentle faux plats of the River Fleet and River Lea as they approach the Thames. Similarly, architectural landmarks provided waypoints, much like the stars now drowned out by light pollution in the celestial – wayfinding - navigation of old. In this way, my experience of the city echoed Lefebvre's (1991: 118) call for us to understand "architectures as 'archi-textures'… treat[ing] each monument or building, viewed in its surroundings and context, in the populated area and associated networks in which it is set down, as part of a particular production of space." The particular production of the rider's space was informed by the "way the soaring buildings of the material City [of London] compete for physical space in a small bounded area, and also symbolic space" (Nash, 2018: 14) that produced my courier space on the ground level, occasionally reaching up to the top of buildings on deliveries via loading bays and lift shafts.

Views - of the BT Tower, the Gherkin, The Shard - partially obscured from my ground level vantage by other buildings all became points on my mental map; the red lights that signal to low-flying aircraft that they should be avoided giving me a near continual calibration to my own position in an urban space constantly under development. My reading of the city, from the vantage point of the bike, became part of the way I produced the spaces I worked in. Taken together, riders develop a wayfarer's knowledge of the city and are able to macro-route themselves around it over time. However, this is built through a commitment to transporting themselves and goods around the city in their day-to-day working lives. Traces of the otherwise

ephemeral and fleeting routes of transporting goods through space concretise over time. "To outsiders these paths, unless well worn, may be barely perceptible... yet however faint or ephemeral their traces on land and water, these trails remain etched in the memories of those who followed them" (Ingold, 2016: 78). The city's inability and indifference toward preserving these lines of travel render the riders' presence forever fleeting - a flash of brightly coloured uniform darting its way through traffic, or lingering on a street corner waiting for work to come in. It is precisely their ephemerality and transience in space that renders them both out of sight and out of mind for the public at large, creating the fantasy that these platform riders are somehow low-skilled. Once materialised, these lines reflect the hard work couriers do, and the skill and knowledge they build up over time as they begin to accumulate on top of one another in their minds; adding layer by layer like stalactites, becoming larger, and more completely formed with every new deposit. In this way, the platform's circuits of capital through the city become ossified into well-trodden trade routes in riders' minds. These are both practices of work, but also of skill development; different personalised mental map making that reflects the way any given individual goes about their work as a rider among the broader fleet. They are informed by the rhythms of the workday, the circuits riders navigate around (Day, 2015), and the "rhythms and performances of place [that] can be constitutive" of the city (Nash, 2018: 2). Knowledge of these market rhythms are explored below.

6.5.2 Knowing the Platform

Knowing how the platform instructs an individual's movements relative to the city is an acutely algorhythmic way of understanding the city and the rhythms of work that take place within it. Riders pick up on the many rhythmic changes in the city that have direct impacts to the culinary market, which in turn, shapes how the platform constructs, manages, reads and performs the delivery market to riders. Some of these are relatively reliable, for example, the body's circadian rhythms that dictate dietary rhythms, producing two distinct peaks in activity - lunch and dinner - that are consequently tied-up in the broader rhythms of labour and social reproduction in the city. Others, such as sudden extreme weather events are less so. In either case, the

platform attempts to meet demand by managing the bodies of its workforce to move them around the city and incentivise them to work wherever demand is exceeding supply. The worker attempts to understand this process to exploit agency where they can in securing the highest earnings.

Platform management of daily rhythmic phenomena follows the shifts that occur in the spatiotemporal delivery market across the day. The EC zone is a particularly strong example of this, with:

"Peak demand at lunch being centred in The City and as workers in offices use corporate accounts to get meals to their desks. This is met with a correspondingly weak market to the east of the zone that's dominated by mixed residential buildings. As the evening progresses, the centre of demand gravitates eastwards, and Shoreditch and Whitechapel experience much stronger demand as The City and business districts soften and begin to quiet" (Ethnographic Diary, December 2018).

To be successful in EC, riders must be aware of, and attuned to, both markets if they are going to work across both peaks. A knowledge of the busiest pick-up areas informs the areas of the zone to wait for orders at different times. As such, "I have deep knowledge of Brick Lane at night, but a patchy sense of its daytime life - with the closest I regularly get being *Rosa's Thai* restaurant located on the adjacent Hanbury Street" (*ibid*).

Market shifts are also significant at longer time periods than the daily. For example, the regularity of payday at the end of the calendar month provides a rhythmic backdrop to the platform's delivery market. Generally, each month follows a similar structure. The middle weeks are stable, the first week of the month is quiet and the final week is busy. Jon noted that "payday makes a massive difference. You want to be working on the payday weekend because people always treat themselves" (interview, March 2019). These are met by targeted campaigns by platforms that nudge customers into buying with discounts at the end of the month.

Here, the financial rhythms of customers come to shape the size of the market available to delivery riders. Despite being on a weekly payment schedule the platform and riders must become attuned to the broader, more stable financial routines of the salaried.

There is also a significant seasonal change in demand. In the winter there are significantly greater numbers of orders, as customers choose to stay in and not leave the house to eat or collect food, whilst the number of riders dramatically decreases as many choose not to brave the elements to work. Conversely, in the summer, many customers opt to go out and collect their food, or eat out to take advantage of the nice weather, whilst many riders come out to work in the hope of picking up some extra pay working through the long evenings summer provides. As such, there is a desperate shortage of riders and over-supply of jobs through the winter months, and an over-supply of labour to an undersupply of jobs through the summer. These larger rhythms of feast and famine come to dictate the gig workers' approach; and affect workers differently. For those who see gig work as a secondary income, the smaller opportunity for jobs may be less concerning. Equally, for year-round riders who rely on this income to survive, the lack of work is devastating. As such, riders "see winter as the key time to make your money. You need to take every job going while they're there because you know by the time that March comes around there'll be way too many riders again and the work will dry up" (Tim interview, January 2019). This annual platform rhythm therefore informs the macro routing choices riders make and their decisions to accept or reject jobs.

Festivities also shape the market that plays out in the city, reflecting and amplifying the diverse populations that exist in myriad ways. This is particularly heightened in the run up to Christmas and the New Year, both particularly lucrative times for riders:

"People seem to stay at their desks longer to get it all done before the holidays or they're too busy decorating or shopping to cook or because they just want to treat themselves to a takeaway as part of the festival of overspending"

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(Ethnographic Diary, December 2018).

The subsequent austerity of the New Year - imposed through a lack of disposable income in the aftermath of Christmas and the self-imposed austerity of a 'new year new me' (gyms, healthy eating, six-packs, and beach bods) means the market practically vanishes overnight. New Years eve is busy. New Years Day is busy too, as people assuage hangovers with take-out food. The second of January is where the food courier's struggle really begins. Similarly, riders spoke of the 'Ramadan bump' as many of the platforms' Muslim workers would log off in the run-up to Iftar, with some ordering food in to open their fasts. This was felt particularly strongly in the EC zone that covers much of Tower Hamlets, which, with 38% of residents being Musilm makes it the ward with the highest percentage of Muslims in all of England and Wales (Tower Hamlets, 2015) This meant that for a two hour window, there was increased demand and a reduced workforce as one large demographic of London workers logged off; thus providing ample opportunity for riders that stayed on the road to make increased earnings.

Whilst the platforms can plan for rhythms that can be anticipated to take place at known intervals and allow for those that are normal but less tied to precise dates (such as the general decrease of riders and increase in demand of autumn and winter) there are events that impact the food delivery market that the platform cannot plan so easily in advance, such as unanticipated extreme weather events. By incentivising riders to work, as with the heavy rain of February 2020 in Figure 5.4) and expanded in Chapter 5, the platform can demonstrate their need for riders through the boost system. By tying bonuses to tasks, rather than simply logging on for a set amount of time, the platforms can deploy this strategy with limited financial risk to themselves (as it costs them nothing if too many extra people respond to the nudge to work). As such, these surge payments reflect the incentivisation of risk, pushing riders out to work when they may already feel uncomfortable working. However, experienced riders are able to apply their knowledge of routes and rates to calculate what a 'good' offer might be and adjust their macro-routing or their position accordingly.

In sum, a rider's ability to develop knowledge of the city and of rhythms of platform demand directly inform their macro-routing decisions. This illustrates the algorhythmic way workers develop knowledges and make decisions at work in the gig economy. However, knowing where things are, and what represents a good offer of work is only part of the job. Riders must also be able to negotiate the complexities of the urban environment to actually get there. This is the focus of the next sub-section on 'micro-routings'.

6.6. Micro Routings

There is a difference between knowing where you're going and knowing how to get there. Whilst the above 'knowings' are essential in facilitating effective work as a rider, they miss one of the key skills riders develop through their day-to-day activity, the ability to deploy tacit knowledges to make countless small adjustments in their movements through the city. Whilst the app may do the work of route planning for the rider, presenting it neatly on a cleanly drawn map with an arrow for direction, this representation of space is abstracted from the complex realities the city presents riders with. It is ultimately still the rider who must make informed decisions about how to traverse urban space, considering the messy realities that exist beyond the solely cartographic elements depicted on phone screens (see figure 6.4 below).
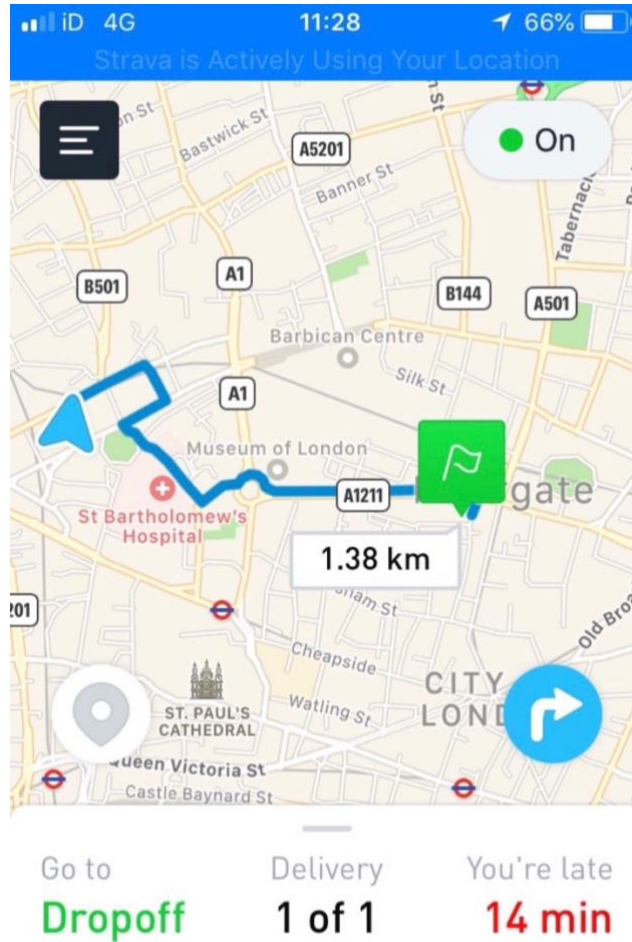
Figure 6.4 – *Mapped representation by Iris Delivery of a delivery route (February, 2019)*

Kidder (2011: 77) terms this skilled response to solving the puzzles created by a shifting urban traffic system as 'micro-routing'. Unlike macro-routing, that deals with cognitive or computational processing of the city's street network to produce a route from A-B, micro-routing concerns "the small choices a rider makes within his larger course of travel… [it] is about whether cyclists go left or right around a car, or whether they take the left, middle, or right of a lane…" Thus, knowing (or being told by the platform) that the Barbican is West of Spitalfields Market is only a tiny part of being able to get from Spitalfields to the Barbican quickly and unscathed. Whilst the "journeys were imposed from above they were still unauthored" (Day, 2015: 17).

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Being the author of these imposed journeys and finding the way to write them well, is one of the most skilful elements of the job. It forces you to:

"Learn not only its [the city's] abstract properties… but what it *feels* like to ride down a particular road in the wet (mapping the placement of slippery drain covers that wait to catch you out on sharp turns) or the dry; the specific sequence of lights at a much crossed junction. As a courier you learn to inhabit the places in-between the pickups and the drops." (*ibid*)

To deploy these learned tacit knowledges as micro-routings is essential to the successful performance of gig work. This sub-section explores this process of micro-routing by first examining how couriers see the city and solve traffic puzzles in it, before concluding with a reflection on the micro-routing couriers engage in in an effort to maintain momentum.

6.6.1 Ways of seeing and solving traffic puzzles

For Kidder (2011: 77), understanding bike messenger work requires us to first conceive of it "as an endless series of puzzles that messengers solve." I, like he and almost all the couriers new to the job, started with a practically immobilising sense of risk at work. Less talented messengers and novices "work their way through the urban maze, but in a less fluid manner. The rookies' movements appear less choreographed and reveal a process of trial and error" (*ibid*: 77). However, over time, and a long series of near and not-so-near misses riders develop the skills to navigate the complexities of work. The result is that risk becomes an opportunity for the application and expression of accumulated skill and as such becomes a rewarding and authentic element of the job. This is part of what makes riding exciting as "dodging cars and pedestrians while attempting to chart the most efficient course through the city is anything but boring" (*ibid*.: 167). Whilst the challenges of the city are considerable, and the risks they present if negotiated poorly are bad; they are experienced unevenly and comprise part of what makes the job rewarding.

The "ever-shifting puzzle of the urban landscape is like a kaleidoscope, moving in unknowable ways that despite its complexity, show patterns to the experienced eye" (Ethnographic Diary, November 2018). Riders must be able to tune-in to what surrounds them; entering their own bodies into the rhythmic movement of the city in order to negotiate them successfully, safely, and at speed. Being able to do so only occurs when the weight of experience balances the scales against the unpredictability of the city. For Luisellei (2013: 36-37) the experienced cyclist "finds just the right pace for observing the city and being at once its accomplice and witness…[to] see things as if through the lens of a movie camera: he can linger on minutiae and choose to pass over what is unnecessary". The city throws-up all sorts of complicated and deadly realities for the platform rider as they operate at the intersection of cartographic representation and lived reality and being able to perceive it and respond to it in real time is essential in negotiating it successfully. As such, riders bridge the gap between the messy complexity of the city unfolding and reproducing itself in front of them, and the smoothness of the application that guides them. Our bodies become the point of translation between these two sites - not really distinct, but interwoven through each other's realities. The task of the rider, is to take these worlds and join them together in movement, accompanied by a package on board as they trace lines from A-B and onwards. To do so, they must calibrate themselves perfectly to the city and develop an intimate knowledge of their own size, shape, and relative position within it.

Given London's traffic is always generally busy during the day, oscillating between slow-moving and standstill during rush hours, the ability to move through both traffic situations becomes paramount. In the standstill of rush hour, roads take on the appearance of car parks and riders filter between vehicles to maintain momentum, or deploy knowledges of alternative routes that – whilst longer – may lead through quieter roads and be quicker overall. When traffic eases throughout the day and becomes slow or fast moving, the skill of the rider is in negotiating moving vehicles to plot a route through the city; knowing when to move around a bus or pull out into the outside lane ahead of other traffic. When riders get it right, the movement of cars and bikes feels choreographed, ascending from the chaotic

realities into an ordered dance of drivers and pedestrians all moving seamlessly through urban space. When it goes wrong, entire junctions can grind to a halt and "the fleeting sense of peace is sacrificed to a cacophony of car horns and expletives that reverberate through the mid-rise buildings that line many of London's streets" (Ethnographic Diary, March 2019).

Because riders become more skilled over time, and their macro-knowledges of the city allow them to spend less time staring at routes on their phones, they can take-in more of their surroundings as they move through them. The calm that comes with experience gives riders the time and ability to *notice* more of the city and move accordingly:

"Although mostly sub-conscious, I judge every car I can. If you're a cabbie, I'll give you space or get out in front of you; bus drivers are generally fine. If your car has a dent in it, I'm making sure I won't be the thing that adds another one. White vans are a pain, so too are the 4x4 Chelsea tractors paraded by the peacocking wealthy. If a chauffeur is driving it, I'm fine. If it's the owner, I'll make an adjustment. Courier branded vans are a gamble. Very skilled drivers, but on a hurried schedule like me, so sometimes liable to make quick, unpredictable decisions. I also work out what I can from what the driver's doing. If you're on your phone, I've noticed; if you're having an argument, I've noticed; if there's kids playing up on the back seat, I've noticed" (Ethnographic Diary, March 2019).

By observing, even sub-consciously, I could pre-adjust myself to mitigate against the dangers that may appear. Whilst these changes might not feel perceptible on a conscious level, when reviewing why I didn't end-up dead in a snarl-up, it's often because of the subconscious judgements I have made to maintain safety, based on observations made of the traffic and the small adjustments made in advance.

Preserving momentum is central to riders' work. Being a successful courier is not about being the quickest in terms of top speed but is instead about being able to maintain a good speed across the entire course of a journey. All couriers I spoke to

at interview discussed the role of traffic lights in their work, relating them to their own identity as skilled workers through their manipulation of them. The riders' ability to neutralise traffic lights that are against them is a key component of success – so much so that Nyssa (2004) positions 'running reds and killing peds' as an instrumental example of courier lexicon; a work-based language founded in the job that couriers do and the way they do it. Thus, riders often approach traffic lights in a specific way that maintains speed by either 'running' a red, diverting around it, or slowing down just enough to make sure the lights are changing as they approach them so they can sail through a fresh green. Lights mark a crucial departure for riders and ordinary cyclists who more often race from one light to another, before stopping and waiting for them to change. Similarly, this ability to go through red lights distinguishes cycle couriers and motorbike/car couriers who are bound to respect the traffic light system thanks to their number plates that enter them into urban traffic surveillance networks. For Tim, there are:

"Satisfying routes I look forward to where if I can see there's a green light with amber a hundred meters away from me I know it's going to turn red before I reach there so I know I can take a quick left down a side street and beat it. If it's red I know it's going to turn green, and I can go on ahead. I've sort of learnt to conserve my energy, keep a bit more of a consistent pace throughout and don't let red lights slow me down… there's something nice about feeling like you're on top of the city and that you've mastered the technical side of things there in terms of shaving seconds off too." (Interview, January 2019)

By knowing the system and trusting himself to respond appropriately, Tim was able to micro-route his way through space. Beyond learning the specific rhythms of specific sets of lights, riders also remarked on how they learned the pattern of lights more generally by combining their corpus of knowledge about light sequences with the ways in which they read the city as they move through it. The signals intended for other road users are read like a text when approaching a junction for the first time and weighing-up whether to run the red or not:

"I've just kind of learnt how the lights in London work I can usually guess if I can get through safely or not. The key is, it's not just about your light [the light directly instructing the rider] but about all the other lights too, the roads its connected to, and the markings on them. If you're going against your light you use everything else you can see to work out if it's safe to go." (Ethnographic diary, February 2019)

Here, my general knowledge of the London traffic light system, and my ability to apply it in a range of contexts when encountering them for the first time enabled me to micro-route through new urban terrains. If I couldn't run the red, or didn't feel totally safe doing so, then I would take the opportunity to rest and observe the lights changing, registering the specific sequence in my brain to be deployed in the future and shave off yet more precious seconds should I need to take the route again. In Ingold's (2016) terms, this is a wayfarer's rather than a transporter's knowledge, and thus only becomes possible for experienced riders. By making tiny adjustments to their trajectory to maintain momentum, riders are able to join-up their cycling movements into flowing sequences of action.

6.6.2 Climate

All these adjustments are impacted by modifying factors such as the climate, that shape both road conditions and the way traffic behaves. Whilst heat provides the challenge of staying hydrated, wet and cold weather - often shrouded in darkness - presents a particular kind of immediate danger to the rider. Street furniture and road elements that were previously innocuous become life threatening elements that need to be considered and negotiated with caution. For example, manhole covers transform from simple road features into "banana skins" (Ethnographic Diary, November 2018) in the wet. Similarly, vehicular traffic takes on a longer stopping distance on wet roads, so whilst falling off the bike almost always results in a bruised ego and a damaged package, the threat of being hit by a car, bus or lorry is amplified in wet conditions. These long-term seasonal rhythms also precipitate material changes to the bike technologies riders use. For example, many couriers swap tyres

for more grippy and resistant compounds in the autumn and winter months.

Weather also influences everybody else in the city, so to stay safe riders must be able to gauge the changes other people make. For example, this reflection on the City of London highlights the increased threat pedestrians pose in the rain:

"All the rules of the road go by the board when the heavens open and the skies turn black. In The City, everyone seems to have those comically large golf umbrellas to keep them dry. It's also true of The City that the normal rules of road crossing cease to exist and people just flood the streets and cross anywhere they see fit. The result, is people darting out into my oncoming path with no prior notice, meaning I have to take evasive action through the traffic and against the wet tarmac." (Ethnographic Diary, December 2018)

The skill needed to avoid people is being able to continually perceive minute changes in body language and pre-empt those about to embark on "a lemming like leap of faith into the middle of the road" (Ethnographic Dairy, December 2018) or as people climb out of cabs or buses.

The minute adjustments needed to micro-route successfully become harder with cold fingers and wet layered clothing; something exacerbated by the long breaks between busy periods and the intensity of peak hours in which time the body cools. As such, Felix (Interview, November 2018) asserted that "you don't really know this job unless you've done a winter. Then you can really understand what it's like." This points to how 'working a winter' has become a folkloric rite of passage for couriers both in the gig economy and in the traditional messenger community (see Chappell, 2016; Kidder, 2011; Sayarer, 2016). The demands on body and bike are so vastly different that it feels like an entirely different job. The same task that was enjoyable in Autumn can become a fight for survival in the winter months.

6.7 Flow – The optimal experience of applying skill at work

'Flow' is a topic already latent in discussion of the city (Amin & Thrift, 2002;

Castells, 2010; Harvey, 1981; 1990a; 1990b), bike literature (Kidder, 2011; Day, 2015), and psychology (Csíkszentmihályi, 1990). The gig economy rider brings many of these discussions together owing to the nature of their work as one that requires skilled bodily interaction with the city. For Csíkszentmihályi (1990), a flow state is one of 'optimal experience' wherein a person is engaged in an activity that consumes their attention and pushes at the limits of their capability. For gig riders, this is a necessity, as concentration is a pre-requisite for being able to withstand the dangerous roads they traverse. According to Kidder (2011: 76) messengers constantly work at the "threshold between boredom and anxiety" as they engage in a city that - when they are experienced enough - matches the level of their skill. This makes it subjective for each rider, so they aren't left going through the motions, or finding it so difficult they feel excluded. However, the experience of flow does not increase in linear correlation to skill development. The innate complexities of the city present riders with a variety of unknowns and variables that greet them in movement as their labour and the city play out in real time. As such, a beginner may struggle to ever experience a flow state, whereas a seasoned rider may need to work at finding a flow, or need to push the limits of their abilities to experience flow at work. For Jon (Interview, January 2019) it was: "really hard to find… flow is like sleep, the more you go after it the harder it is to get… it might only happen a few times a shift" but it can be intoxicating when it does. The feeling of flowing as a courier "feels like you're choreographing the city" (ethnographic diary entry, January 2019). Here, the inherent polyrhythmia of the city is rendered as eurhythmia through the rider's ability to apply their skills in navigating it, meaning the rider is an active agent in the creation of a sense of authenticity at work (Kugelmass, 1981) – juxtaposed against feelings of submission to the platform to which couriers are resigned. This section of the chapter unpacks this sense of flow, first investigating how riders build experience and skill and secondly illustrating the process of traffic choreography riders engage in as they flow through the city.

6.7.1 Building-up experience

In a practical sense, being able to flow requires riders simultaneously refresh and

update their mental maps and skilled manipulations of body and bike to develop muscle memories of how to resolve situations as they arise in the urban environment. This is intimately tied to rhythm, as riders must be able to locate their own bodily rhythms and those of the platform among the broader rhythmic complexities of the city to achieve harmony. Riders build a knowledge base that forms the foundation of their attempts to actively manage the complex urban environment through anticipatory action. As I reflect in my ethnographic diary (March 2018):

> "What makes it possible to achieve a flowstate, is feeling like you've seen it all before. I know how to respond to something often before it has even happened because I've seen it so many times. It might be the way a car door twitches before someone opens it into my path without looking, the way a pedestrian's body language changes fractions of a second before it becomes obvious they're about to step out into the road, or the way traffic jostles to create gaps and close them in front of me."

Over 9 months in the saddle, I've built up a large corpus of knowledge of how various actants in the city behave. When I feel 'in the zone' or 'in the flow' then this knowledge is deployed at speed to anticipate the world I will be rolling into in a fraction of a second's time, as the present moment slips away into the past unnoticed, creating a particularly meditative quality. "I deploy all this knowledge to slip into gaps before they appear, move around cars as they pull out, etc" (Ethnographic Diary, March 2019). This is the focus of the next section.

6.7.2 Choreographing the City – Personal Eurhythmia

Emi considered flow to be a "kind of sixth sense" (interview, March 2019) that allowed him to choreograph the various complex events of the city around his movements and desires. I described my own experience as follows:

> "It's like riding a never-ending wave when everything goes right. For a long time,

it's felt like I'm just cast out to sea and being pushed around by the waves of the city. By tides of cars and orders in Mercury's system. But when everything slots into place, it just changes. Time loses its significance and structure. Instead of having to constantly be moving out of the way, it feels like cars are parting around me to let me through – like the city and my movements through it are part of a tightly choreographed action sequence and I'm the choreographer. I see the gaps in the traffic before they've even become gaps yet, gliding across the road without having to slow down or stop for anyone. All the lights are on green, and the ones that aren't just become simple puzzles that resolve themselves in my head so I can just slip through unnoticed. For the time that you're in the flow, feels like an infinity. It feels like you're in control of it all. The platform, the city, the traffic, and most of all, yourself... all that's left is a zen-like meditative peace."
(Ethnographic Diary: April 2019)

For Cook and Edensor (2017: 17) this kind of flow occurs when the affects of the environment "penetrate the [cyclist's] body, enfolding it into the field" as "the body's rhythms intersect and clash" with its surroundings. It recalls the sensation of feeling in control of the job and the city that for so long had left me feeling disconnected. Returning to Kidder (2011: 77), "what makes flow such an important type of experience is that by dampening (and often completely halting) reflexive thought, actions appear utterly authentic... as if her mind and body are perfectly in tune – as if operating on instinct alone." This explains what for me was the zen-like state achieved through work; a kind of meditative bliss I've never been able to find before and have been unable to capture since. However, I was not able to achieve this flow-state all the time – flow was fleeting, capricious in its elusiveness, like water through my fingers. When it happened though, the mind emptied of all the other details of the day and the existential stresses of life on poverty wages in London – becoming like Krabbé's (2002: 33) mind when going well on the bike, like a "monolithic ball bearing, so smooth, so uniform, that you can't even see it spin"; opening-up the body and mind to simply exist in a sense of flow. As such, every time I set out for work, I would see London and her newest constellation unfolding as something novel, a fresh canvas to be explored by my gestures through concrete and steel. But I'd also

greet her as an old friend, a visage with which I was already familiar with every contour, freckle and smile line as I'd adjust to today's topographies anew.

This experience relies upon the riders' own location in time and space as they apply their accumulated knowledges and skills to transform the polyrhythmia of London's congested streets into a personal eurhythmia. As 'flows' have become a primary conceptual frame for the post-industrial city (Soja, 1989; Amin & Thrift, 2002; Massey, 2005) there has naturally been an increased attention given to understanding the absence or interruption of flow. This highlights how experiences of urban mobility exist in a tension between flow and viscosity that emerge from the riders' positionality within the broader maelstrom of information in the urban-platform conflux. Some days it seemed that the city "took on an entirely viscous constitution" (Ethnographic Diary, November 2018) conspiring against free-flowing movement and leaving me feeling stuck "movement coagulating into clots that form like thromboses in the otherwise open arterial roads of the urban network as cars and buses snarl-up and leave no latitude for flowing movement" (ibid). At others, everything might seem right, but I just couldn't seem to "get with it and go with the flow" (ibid). Being a rider enrols the self into the act of movement. As cyclists charged with delivering goods across the city, riders sometimes feel asynchronous with the platform and the city for reasons beyond their control.

6.8 Conclusion - Flow as improvisational jazz

For Lefebvre (2004: 68), staccato and legato present two "oppositional" styles that offer the opportunity for us to "to get inside rhythms". Legato, from the Italian, 'legare' translates as the verb "to tie or to bind"; and articulates the work of *doing* movements that flow seamlessly (i.e. riding eurhythmically in flow). Conversely, staccato has its roots in 'staccare', or 'to detach or separate" and refers here to when riders' movements become disjointed or separated from one another (i.e. arrythmia). In music, both staccato and legato are desirable and curated for rhythmic effect. In the world of platform delivery, riders must create legato – eurhythmia - from the staccato – arrhythmia - of urban traffic. As skilled practitioners of their craft,

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riders take in everything the city presents them with, and do their best to chart the path of least resistance through it. To do so, they must simultaneously be hyper aware – using all their senses to comprehend the city as it unfolds in real time – whilst also being able to dampen the recall to reflexive thought and over-analysis of inputs that can be slow and distracting; rendering them into a flow of action, existing authentically in the moment.

By achieving a sense of flow through application of skill at work, some riders are momentarily able to escape the quotidian realities of their lives; characterised by insecure and precarious employment that has trickle down effects that impact their housing and other aspects of their welfare. This is simply the reality for many of the highly skilled, lowly valued couriers who endure in-work poverty on a daily basis. Their position on the fringes of society, servicing the culinary desires of those that can afford them, make them similar to the traditional messengers who existed on the fringes of society to service the booming post-industrial economies in urban centres. However, with this discussion of flow in mind, this thesis departs from the traditional comparisons to punk infused sub-cultures that the traditional messenger community garnered thanks to their style (Kidder, 2005; 2011) and approach to the city (Fincham, 2008). Instead, it repositions their labour as more akin to jazz.

Just like courier work, jazz has grown and changed as the city and its cultures have developed over time. For Gabbard (2011) "jazz is a construct", but one that is rooted in the everyday lived experience of the precarious (often BAME or BIPOC) occupants of urban centres. Just like flow, it provides an avenue for expressing life's experience and a virtuosic release from all the difficulties of living. The genre is huge, but in respect to riders, I discuss the rhythmic and performative elements of improvisational jazz (particularly that that occurred during and after the bebop revolution). For Monson (2011: 114), these two forms highlight jazz as a music "emerging in a complex dialogue between the soloist and the rhythm section, and between the pre-existing musical knowledge of the band members and what they collectively discover in the process of improvisation." In this analogy, the gig rider is a soloist, engaging in a complex dialogue with the rhythm section of the city and the

platform. The ability to flow requires the improvisational application of pre-existing knowledge to the city's complex and dynamic environments.

For Berliner (1994) in his landmark *Thinking in Jazz*, this ability to improvise was dependent upon the 'eternal cycle' of learning that jazz musicians enter into throughout their musical lives. Firstly, the musician must learn the basic repertoire of tunes and melodies that serve as the basis for improvisation; secondly, they must learn how to embellish these and create new harmonies, before, in the final stage, being able to deploy these harmonic abilities and lifetime of knowledge in a polyrhythmic ensemble setting to create new improvised music. Taken together, this forms the eternal cycle between, perception, pre-composition and newly created ideas in improvisational music that is mirrored by skilful riding.

This is of particular relevance to riders in the platform economy because it follows their own learning cycle and skill development – developing a relationship with their bike (instrument) and learning how to use it in the contexts of their work. Critically, riders, just like jazz musicians, apply the corpus of accumulated knowledge through their working lives to the infinite possibilities that can play out in the city. In Kidder's (2011: 78) study of messengers, "the more time they spend on their bikes, the more riders hone their senses and build up a reserve of knowledge that allows the experienced messenger to really flow". To find and maintain this flow, they, like the jazz musicians in Forbes' (2021: 791) study, "rely on intuition, spontaneity, and to be open to experience; and not try to consciously control the music" or the city through which they move. Part of being in the flow then, is also a willingness to 'go *with* the flow' when the opportunity presents itself. It is this ability to bring all of your accumulated knowledge to bear on a single situation, harness'able' at a moment's notice that gives the rider the ability to achieve a flowstate. Unlike in punk, where songs and chord progressions are rehearsed and bands regularly know where it's going to go, for jazz musicians and platform riders, their experience to date *is* their rehearsal; applied to an ongoing present which is uncertain and infinite.

These improvisations are made possible by the fact riders have seen and

experienced different variations of the same phenomena so many times in the course of their work. For example, experienced riders will often be able to sense when a car will turn without indicating, or when a pedestrian will step out in front of them unannounced without looking because they have seen it happen so many times before. This explains why at interview Emi (among many others) declared that he felt he had a "sort of sixth sense" (Interview, March 2019) and that perception went from being a task of responding to things as they unfold, to anticipating things momentarily before they happened skill and experience increased over time.

This is the critical difference between knowing where you're going and knowing how to actually get there. Whilst it is easy to outline the route from Old Street to Oxford Street, what is more difficult to explain is the plethora of tactics and improvisations that happen along the way from: moving around potholes, to jumping red lights, avoiding pedestrians and not being hit by car-doors as ride hail cars drop off clients at their offices or homes. It's knowing how the weather conditions impact road condition and the temperament of those other users you share it with. Even the most skilled rider cannot explain these details before the journey begins. Instead, the journey must be travelled, and these details explored and navigated along the way as they emerge into reality from the vast infinity of possibility that is urban space. Just like a jazz solo, you cannot know what is going to happen until it does, in the context of the moment.

These immense details are continually being computed and calculated as riders deploy their exceptional knowledges of time and space to great effect in keeping them safe and moving as they go about their work. For Kidder, (2011: 77) these are the micro-routings of messenger work; the tacit decisions and "small choices a rider makes within his larger course of travel." They are sensed and captured through the finely tuned instrument that is the bike and body. These stand alongside, and in distinction to, the macro routings (the abstracted directional instructions) of the job. In the case of the platform rider, much of the need to macro-route themselves has been taken over by the platform. However, the intimate knowledges they develop of the city that are needed to undertake the micro-routings form the pre-condition for

a skilled engagement that makes the work, and the experience of a flow-state at work, possible.

In relation to walking de Certeau (1984: 98) outlined that:

"a spatial order organizes an ensemble of possibilities (e.g., by a place in which one can move) and interdictions (e.g., by a wall that prevents one from going further), then the walker actualizes some of these possibilities. In that way, he makes them exist as well as emerge. But he also moves them about and he invents others, since the crossing, drifting away, or improvisation of walking privilege, transform, or abandon spatial elements."

This chapter has argued that riding in the gig economy is a unique and specific mode of travel across the city, and in light of the platform, the rider takes on a certain subjectivity in achieving the completion of work. What is similar to de Certeau's walker, though, is that riders take the ensemble of possibilities and interdictions their work and the city provides and in crossing space invent novel routes and ways of being in the city. Part of being able to flow in the moment is being able to simultaneously exist in that moment and being able to perceive what the next moment has in store for you. It is a continual rejuvenation of the present; a feeling that, rather than the present slipping into the past, the rider is able to deploy their corpus of knowledge and skill to actively step into and shape the future amidst a sprawling ocean of infinite possibilities. In the city-platform-rider dialectic, relationships change with skill, but they also develop each other in their action. The platform is the rider and the city; the city is the platform and the rider; and the rider is the platform and the city. In a jazz ensemble, each individual musician's agency to perform is distributed through every other member of the band, who by providing the musical context generate a specific set of possibilities that the soloist can bring to life in the act of performance. A sociomaterial reading of gig work similarly shows the individual rider's agency to perform as distributed through the various elements that make-up their work; the city and the platform together provide the basis for a specific set of possibilities to emerge in the city-platform-rider triad. It is the rider's

location and performance of this space that makes them capable of agency and therefore resistance, which is the focus of the next chapter.

Interlude 3 – MEET THE UNION

"¡Hasta la Victoria, Siempre!" Ernesto 'Che' Guevara's famous phrase and adopted slogan for the IWGB Union.

The Independent Workers Union of Great Britain (IWGB) is the union in which I undertook eighteen months of overt ethnographic research. They describe themselves as a "grassroots member-led union fighting for justice for workers"

(IWGB, 2021.). They were founded in 2012 as a breakaway from Unite and Unison as it became clear that the bigger unions were "not fighting for the what the workers really needed" (Ethnographic Diary, July 2018). They promised the organising of grass-roots workers who for a long time had been neglected by mainstream unions. The IWGB's (2021) website state their mission to organise and represent "the unorganised, the abandoned and the betrayed." Early members were predominantly migrant cleaners and security guards as well as cycle messengers - groups of workers that other unions had perceived as unorganisable. This has meant the IWGB has developed an acute awareness of how the precarity of being a worker intersects with the precarity of being a migrant in the UK to create a particularly challenging and isolating environment. Reflecting on this, Jason Moyer-Lee (then General Secretary) explained in an interview with Beckett (2015: n.p.) that in his view:

"The trade union movement in the UK is overly bureaucratic and averse to confrontational tactics… and while the model of work has changed since the 1970s, I'm not sure the [mainstream] model of union organisation has. Cleaners work three or four jobs. The idea that you can leaflet them in their lunch hour is over."

To do so, they developed an 'activist machine' that aimed to "ramp up public pressure, using social media and by staging loud and disruptive protests, surprise protests [and] mini-occupations. Keep applying that pressure until they cave" (*ibid*, n.p.). This confrontational approach made workers (and their conditions) visible as they harnessed newly developing media connections alongside actions to apply pressure to companies on multiple fronts. The strategy to attack from multiple angles all at once has continued into their contemporary organising of the gig economy. For example, in their efforts to improve working conditions at Uber, the IWGB is simultaneously involved in legal action in the Supreme Court; engaging and advising in policy debates, conducting street protests; occupying Uber's Headquarters (BBC, 2018b: n.p.), representing drivers at disciplinary hearings by both Uber and the regulator (Transport for London, TfL), and building grass-roots organising networks through community chats, branch meetings, and worker events such as Open Iftars

through Ramadan that create the space for workers to discuss work together in a safe community setting.

To maintain democratic structures and relevance within each sector, the IWGB operates a branch structure, wherein each branch represents a different sector. The Couriers and Logistics Branch (CLB) represents platform riders in the gig economy, whilst the United Private Hire Drivers (UPHD) branch supports minicab and Uber drivers. There are branches for "cycling instructors, charity workers, yoga teachers, cleaners, security officers, video game workers, nannies, university workers, foster carers" and more (IWGB, 2021: n.p.). This structure aims to keep worker organising as specific and targeted as possible. Branch members support each other in solidarity at protests and other demonstrations (in addition to supporting other union members from sister unions such as the United Voices of the World, UVW), and coming together at times to form en masse demonstrations. For example, whilst working ethnographically at the union I helped organise the "Rise of the Precarious Workers" demonstration that brought together couriers, ride-hail drivers, cleaners, McDonalds workers and cinema workers to march for improved rights. These efforts mark the IWGB's commitment to collectivising and building solidarities across workforces, whilst maintaining the specificity of focus within each branch to remain effective and representative.

Beyond direct action, the IWGB engages in a plethora of other activities that galvanise workers into a community and provide basic skills training to improve their capacity. The IWGB is bi-lingual, meaning all official business is done in English and Spanish - as a result of their history of organising in the LatinX community. This is less useful for the CLB as many riders are Brazilian and thus speak Portuguese, so the CLB operate a bi-lingual English/Portugese approach where possible in smaller branch meetings. Events regularly involve food, music, and dancing, in addition to child care, legal clinics and language lessons. This approach comes in direct response to the needs of workers who organise and comprise the union, advertising to non-members that the IWGB are a fighting union that has their needs and interests at heart.

The IWGB office was located in Islington for the period I volunteered there. It was an exciting, buzzing space where the phones never stopped ringing and legal staff collaborated with each other in the build-up to cases and representations. Workers filled the two room office all the time, and at any moment you would likely hear the babble of chatter in Spanish, Italian, Portuguese and Urdu as people communicated their problems, the solutions and the matters of the day. Membership at the time was approximately 3,800 members (IWGB, 2018), however they do not disclose the number of workers in each branch. In short, they are a diverse, grassroots organisation that fights and empowers a diverse group of workers across multiple sectors. One David fighting many Goliaths and - often times - winning.

Chapter 7 – SITES AND PRACTICES OF RESISTANCE

"Socialism can only arrive by bicycle" José Antonio Viera-Gallo (Chilean politician in

Allende's government)

"As long as I breathe, I attack" Bernard Hinault (5 time Tour de France winner)

7.1 Introduction

In August 2016, a group of Brazilian Deliveroo riders went on wildcat strike in London in opposition to proposed changes to their payment structure and shift allocation, igniting a wave of strikes that swept across European cities in 2016/17 (Cant, 2018; Tassinari and Maccarrone, 2019). Whilst victories have been won along the way, they have often been small and temporary with conditions declining overall. This chapter investigates some of the resistance efforts against this trend. It begins by establishing contextual factors that are similar across platforms, expanding upon the vast inequalities between platform and worker to reflect on their significance to resistance efforts. It then focuses on four sites of resistance. These are: Site I, The App, exploring the relationship between gamification and resistance; Site II, The Street, investigating collective organising and strike action; Site III, The Courtroom, analysing a legal case brought against a leading platform; and Site IV, The Polity, investigating the role of policy in enacting change.

These analyses are rooted in my ethnographic experiences as a worker and as a volunteer in the IWGB. They allowed me to learn how the app works, partake in organising strikes, sit in courtrooms observing legal battles, aid in the organisation of policy reports and participate in research meetings with MPs at the Department for Work and Pensions. As such, these reflections are not abstracted analyses or accounts of some distant field site. They are discussions of first-hand experiences supplemented – when I was unable to be there – by interview accounts from those that were. Out of necessity, I will refer – at times – to platforms by name. This is because cursory research of the events would render pseudonyms futile and potentially compromise the identity of the platforms I did work for covertly. New pseudonyms will also be used for interviewees to anonymise any residual overlap between interviewees from the workplace and union ethnographies (thus eliminating the possibility of identifying a named platform as the site of my covert autoethnographic research. Naming platforms here neither implies that I did or did not work for them, just that I engaged with them during my ethnography at the IWGB.

7.2 The State of Play

Riders wanting to resist face a myriad of challenges. These are enforced by the platforms themselves (Woodcock & Graham, 2019; Cant, 2019a, 2019b; Gandini, 2019) and can be exacerbated by governmental factors including successive policies of austerity (Vieira, 2017). This section briefly outlines the forces that impact of all four arenas of resistance discussed in this chapter. These forces articulate as power dynamics that – through organised resistance – workers attempt to balance or over-turn. In the workplace, they represent the structural impediments riders must consider when mounting effective resistance.

Firstly, asymmetrical relations are an instrumental feature of all gig platforms. Despite platform attempts to naturalise them as objective truths (Cansoy et al., 2020; Vallas & Schor, 2020) or as part of a broader 'business ontology' (Fisher, 2009), none of these are 'natural'. They are hard coded into platform systems. Just as in any other form of capital-labour relation, the power-dynamic between worker and platform is unequal and technology is a key part of mediating this inequality (just as with Marx's factories or the Luddites, Mueller, 2021). Three primary forms of asymmetrical relations exist between workers and platforms: bargaining, financial, and informational.

Contractual inequality and bogus self-employment combine to generate asymmetrical bargaining power relations. Indeed, "what is new about the gig economy is that it gives employers something they have otherwise found difficult to attain: workers who are not, technically, their employees but who are nonetheless subject to their discipline and subordinate to their authority" (Forrester 2019: n.p.). Although contractually classified as self-employed, gig workers have no agency to negotiate pay and conditions. Far from the 'flexibility' of being a 'small entrepreneur', their only *real* flexibility is the agency to reject the contract all together.

Asymmetrical financial relations stem from the access successful platforms have to enormous liquid assets, whilst workers precariously live pay-cheque to pay-cheque. Relying on Venture Capital (VC) firms for finance, platforms are forced to reproduce and "perform" the structures and logics inherent to VC, namely growth at all costs and monopolisation as the route to profitability and return on investment (Langley & Leyshon, 2017).

Informational asymmetries are experienced on a daily basis by workers as opaque platform systems leave them unable to understand algorithmic decision-making processes (Moore & Joyce, 2020; Rosenblat & Stark, 2016). Whilst the technologies that underpin platforms may *appear* objective and unbiased (Badger, 2021, Noble, 2018), the reality is that they sociomaterially perform the exploitative logics of platform capitalism that are hard coded into them (see Amoore, 2020; Dwyer, 2020; Eubanks, 2018; Noble, 2018; Benjamin, 2019). For Moore and Joyce (2019: 15), an awareness of this is critical if we are to "expose [the] intentionality in management practices" that combine the excavation of worker data (Mezzadra and Nielson, 2017) and the implementation of opaque management algorithms (Cant, 2019a).

These asymmetrical relations combine to create an environment that is challenging to work and organise within. These factors are compounded by high staff turnover as knowledge, expertise, and experience is continually siphoned away from the workforce. Akhtar (2019) reported staff turnover in the gig economy reaching 500%. For comparison, turnover in the technology industry (i.e., those who write and manage the algorithms that manage gig workers) is at 13.5%. The fast-food industry (from whom riders collect deliveries) has a turnover rate of approximately 150%. Since riders often see the job as a stopgap, they may become apathetic toward expending energy on labour organising as they are pre-occupied with short-term struggles to survive.

Whilst the platform is instrumental in marginalising worker agency, it is critical to consider the broader role of the British state and regulators that have provided a petri-dish for these experiments in the future of work to take place (Crouch, 2019; Varghese, 2018). For Christophers (2020) this has made Britain a target location for US platforms to gain a foothold in Europe by trialling the viability of their service. This has catalysed the infusion of a Silicon Valley political economy in the UK, with British companies established around the physical space of "Silicon Roundabout" and the philosophical space of Ayn Randian Objectivism (Liu, 2020) and neo-liberalised platform capital that give platforms "free rein to create new markets and disintermediate existing ones" (Christophers, 2020: 200). This advantageous situation for tech firms is compounded by the fact that "over a dozen regulators have a remit covering the digital world. But there is no overall regulator. Regulation of the digital environment is fragmented with overlaps and gaps" (House of Lords, 2019: 3). The result is a golden opportunity for evading legislative hurdles and taking advantage of the favourable stance the government takes toward digital 'disruptors'.

This comes as no surprise. The lax regulatory environment sits atop - and is perpetuated by - broader systems of precarity, lacking social welfare, and successive austerity and hostile environment regimes that have structurally undermined the working class in the UK. These logics are refracted through platforms that actively seek to extend them through the atomisation of workers as disconnected units working within a larger market system.

This atomisation is exacerbated by demographic differences in the workforce. Given the low barriers to entry and the limited need for spoken English, platform companies provide a catch-all for those with limited options. This is experienced most sharply by migrants who are structurally disadvantaged by the systemic inequalities of the British state (through exclusions from social welfare protections, for example) and must find work to survive, even if it is poorly paid. Platforms also mostly operate in large cities, with inequality felt most harshly by BAME and migrant communities. This is closely reflected in the communities of workers that emerge. In London, for example, many workers are from the Asian Sub-Continent or Brazil who

form their own communities of support that draw boundaries down cultural-linguistic lines. This is also for protection and security from the authorities, given the record of gig firms like Deliveroo being complicit with UKBA in the deportation of workers (CorporateWatch, 2016). Whilst community groups provide the support necessary to withstand the difficulties of platform work, the divisions between groups create siloed communities of workers making connecting resistance efforts together and knowledge sharing between groups harder. Whilst workers are atomised as individuals, where community has formed, these community groups are atomised from each other, in part because of the basis of their foundation, namely to find support and community among the diaspora amid the Home Office's Hostile Environment. Site I, The App, explores resistance efforts that take place in isolation.

7.3 Site I - The App

Whilst work is carried out through the city, it is the app that offers jobs and instructs riders on how to do them. It is therefore the primary location for workers and management to interface and where riders are coerced into 'playing the game' (Rosenblat & Stark, 2016; Mason, 2018; Gandini, 2018) through their participation in the labour process (see Burawoy, 1979). Workers may become critical of the game and their inability to know or understand all of the game's elements (imposed through information asymmetries) and of the inequalities bound-up in its rules but they must participate in order to work. Often, riders know some of the rules – 'don't steal the package', for example - but don't know others - like how to get the most jobs - so infer them where they can (see Chapter 5). This is because it is often difficult to see how platform algorithms operate beyond a rider's personal experience. This is harnessed to ensure riders' continued participation; a trend rapidly increasing across multiple sectors as part of a broader 'gamification of work' (Moore & Robinson, 2016).

For Woodcock and Johnson (2018: 542) gamification represents another tool in the capitalists' armoury to exert agency over labour. However, they also identify

gamification's emancipatory potential, splitting the concept into 'gamification from above' and 'gamification from below'. The former is applied by bosses, whilst the latter is a Situationist-cum-Dadaist inspired playfulness workers can engage in as an act of resistance. However, this is only possible in salaried employment – to playfully misappropriate company time, you are also misappropriating company money (your salary) and any materials used through damage or misappropriation of company property. Conversely, riders operate on piece rate and engage their own assets to do so (their bikes, cars and phones). The real 'property' of the platform that may be playfully engaged (i.e. their management algorithms and proprietary applications) becomes manifest through the workers' app, but in reality is stored miles away from the worker and their phones on computers and drives (Dourish, 2017). Similarly, the packages riders carry - if damaged - could result in the termination of their contract. As such, the opportunities for gig workers to gamify from below are limited compared to traditionally salaried employees.

From the perspective of the customer and platform, food delivery is a 'high-tech' affair, facilitated by 'dirty work' performed by riders in the provision of service through automated systems (Brush, 1999; Simpson et al, 2012). From the worker's perspective though, the algorithmic management of delivery labour makes it simultaneously high-tech and high touch. Bush (1999) and McDowell (2009: 44-5) present these two modes as mutually exclusive; high touch workers exist in the space of places, whilst high-tech workers exist in the space of flows (Castells, 2010) to create different realms of classed and gendered experience. However, the platform's technological management of work intersects with the infinite complexity of the urban environment riders negotiate in nuancing this high-touch/-tech dichotomy. As technologies have become enmeshed into couriers' working lives, their sociomaterial immediacy means that spaces of flows and places must be managed together constituting each other through their enrolment in the labour process.

It is in this sociomaterial intersection – of tarmac and fleshy bodies, of technologies and their cultures of use, of precarious plastic lids and low viscosity soups sloshing round delivery bags – that greater possibilities for gamification and

resistance at work emerge. Whilst the platform is capable of digitally surveilling certain aspects of a riders' work at high resolution (Zuboff, 2019), this detailed surveillance has limits, only knowing that which is measurable or reportable by the smartphone/platform app assemblage. Beyond this, the platform's oligoptic surveillance capacities are low, leaving riders free to take liberties other traditional workplaces prohibit, such as openly discussing resistance strategies or not complying with mandated safety procedures, such as wearing a helmet.

Being able to make knowable and negotiable the high-touch/-tech elements of the job creates the space in-app to subvert the platform. What is less clear, is whether this subversion is an act of 'gamification', 'resistance', or both. If workers gamify their own labour process to complete tasks faster, attract more work and earn more money, this does not resist the platform's exploitative logics. Rather, following Burawoy (1979), this participation in the game includes within it an implicit consent to the rules of engagement. By gaming the system to work and be paid more, riders perform the platform's mission of delivering items as quickly as possible, thus improving their reputation for speed and efficiency and encouraging customer retention and growth. This section of the chapter therefore explores two distinct types of in-app gamification: gaming the platform and gaming the labour market. A discussion considering the links between both modes and their potential as forms of resistance follows.

7.3.1 Multi-Apping - Gaming the Platforms

To multi-app, workers hold accounts on multiple platforms and turn them on simultaneously while waiting for a job. Once they accept a job, they log-out of all other platforms before logging back in again when the job is completed. This simultaneously multiplies their chances of being offered work and gives them a feel for the cross-platform strength of the food delivery market that day, enabling them to make more informed decisions about what a 'good' offer of work is. This gives riders greater agency to be selective of the work they accept by putting each platform into competition with one-another, and thus creating their own personal labour market. Multi-apping thus harnesses workers' classification as self-employed. Whilst

unable to negotiate rates, workers can work for other companies, pitting them and their markets against one another. To do so successfully, workers "log on to get a feel for the day… work out what a good or bad offer is on today's money" (Jon Interview, April 2019). This calibration to the market allows for informed decisions to be made by triangulating the frequency of job offers, the value of job offers, and observations of other riders against a rider's corpus of knowledge. When I first began fieldwork, very few riders multi-apped. Whilst pay was poor, it was good enough not to do so. However, as rates declined sharply over my nine-months in the field, multi-apping became common place as people fought to maintain earnings. On returning to work during the Covid-19 pandemic it was clear the situation had worsened further with single-app use having become the exception.

Multi-apping is intimately tied to the characteristics of each city and zone. London's historical geographies have forged distinct areas with restaurants, commercial, and residential spaces joined together by the street-layouts and trade-routes that connect them. Platforms consider these geographies and then overlay a geofenced ring on to the area that demarcates the zone as an organisational unit. For example, Iris Delivery and Mercury Meals both target The City in a similarly sized, shaped and positioned 'East Central Zone' (see figure 7.1 and 7.2) that covers key pick-up and drop-off hubs in the region, namely the daytime trade of The City (office deliveries), and the evening trade of Shoreditch and Whitechapel (residential deliveries).
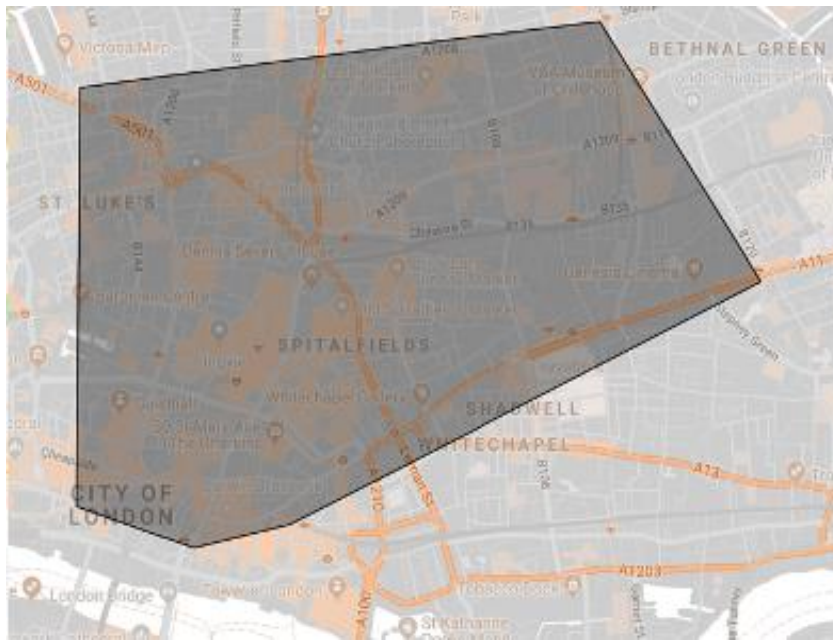
Figure 7.1 – *Map of Mercury Meals EC zone on top, Iris Delivery EC Zone on bottom*

Figure 7.2 – *Map overlaying the boundaries of each zone on top of one another*

This convergence was key to Aron's (Interview, November 2018) approach to work: "I just try to stick to the busy bits of the zones as much as I can and not take me away from where both platforms operate." Conversely in smaller towns, zones often differ in size and shape from platform to platform. For example, on Mercury Meals, Brighton Central is adjoined by neighbouring Worthing to the West and Eastbourne to the East. By comparison, Iris only has a Brighton zone. Therefore riders wishing to take full advantage of multi-apping must reject jobs that would take them away from the areas in which the zones converge.

This strategy follows the rhythms of inter-firm competition between platforms, with experienced riders noting that new platforms entering the market presented the best opportunities to workers. Monzil reflected that:

"You always want to join the newest platforms. They've got the most to spend and want to win everyone over with good experience so they pay the best for a while… I remember getting £20 a job in the past… but then pay starts to decrease again and it's just the same if not worse than the others." (Interview, April 2019).

In this sense, riders can achieve significantly higher earnings if they are able to leverage jobs on newer, better remunerated platforms. However, the new contenders' competitive pay decreases as their finances dwindle and there is no long-standing uplift in rates across any of the platforms. The already entrenched position of a market leader means they appear to feel very little pressure to compete by raising fees. As such, generous introductory rates on new platforms do not impact rates across the board.

In traditional industry, the availability of higher paid work at another factory, for example, provided inter-firm competition that kept wages high. Whilst it would appear that the same effect should occur in the gig economy, a crucial piece of the puzzle is missing thanks to the bogus self-employment of workers: the unions. In traditional industry (particularly pre-Thatcher in the UK), union density was high and employers were forced to recognise and negotiate with unions. Not only was there the external force of inter-firm competition on wages and conditions, but there was a simultaneous infra-firm pressure provided by organised labour threatening industrial action to demand better pay and conditions. This lack of formalised internal pressure from organised labour in the gig economy illustrates that market forces – in spite of inter-platform competition – are universally downwards in terms of rider pay. All interviewees I spoke to reminisced about older, favourable payment structures, and noted declining rates of take-home pay week on week. Jon articulated the widely held belief that rider "pay goes down because of pressure from shareholders to make profit" (Jon interview, March 2019). As such, infra-firm pressure on management regarding pay and conditions from organised labour has been supplanted by shareholders' desires for return on investment, a trend playing out across various poorly unionised sectors in the economy (Frayne, 2015; Weeks, 2011; Jaffe, 2020).

For the individual, multi-apping is a perfect example of gamification; setting platforms against one another and bringing collective knowledge on their function to create competition between platforms and earn the best possible wages by playing

them off against one-another. However, regardless of this, the unit cost of labour (i.e. rider pay per job) has decreased over time – confirmed in industry leaders Deliveroo (2021) and Uber's (2019) IPO paperwork and financial statements or The Bureau's (Mellino et al, 2021) pay analysis. However, if applied at scale, workers could use multi-apping to exert significant pressure on platforms and precipitate improvements to pay and benefits. Deliveroo's (2021: 5) registration documents for the London Stock Exchange, are illuminating in this regard:

"The cost to switch between service providers is low and consumers, partners, and riders frequently "multi-app" and can therefore shift seamlessly to alternative providers… [this means any] … efforts by our competitors to increase their appeal to our consumers, partners and riders might compel us to… increase the rates or modify the basis on which we pay or engage riders on our network…" (2021: 5)

To be clear, what Deliveroo are outlining is the ease and legality within their contracts for any part of their three-sided marketplace (consumers, restaurants, riders) to switch to another platform, and the low barriers of entry to do so. This indicates how the bogus self-employment status of riders presents a potential weakness in Deliveroo's business model. If co-ordinated across the majority of the workforce, riders could cease working for Deliveroo (effectively, a strike) whilst continuing to work for other platforms to lessen financial losses in lieu of a strike fund. They could also call for a customer boycott of Deliveroo and direct customers to other platforms. This would therefore mitigate (to some degree) the significant role rider precarity (itself created by the platforms' poverty wages) plays in the decision not to strike. Here, then, we see multi-apping's potential to move from individual gamification into collectivised resistance strategies, particularly if coordinated at scale, to create lasting organisational change that would directly benefit riders. However, organising this is deeply challenging, something returned to in Site II: The Street.

7.3.2 Dual Accounts: Gaming other Workers

Dual-accounting requires workers obtain two accounts for the same platform (as distinct from workers getting one account for two or more different platforms when 'multi-apping'). This is officially against platform terms and conditions, but it happens. Whilst neither my participants nor I engaged in this approach directly, I have spoken to others who did, and encountered discourses surrounding it through research at the IWGB. Many riders assume it is allowed to continue for two reasons: it doesn't demonstrably harm service provision; and it foments disagreement and fragmentation among the workforce.

There are two primary ways a rider can get a second account for a platform. Firstly, they can buy an account off another rider who no longer needs it. This has created a thriving black-market for rider accounts operating in closed social media groups. Accounts are advertised for sale from £50 to £1000 (for those with good metrics[26]). Alternatively, riders register a new account in another person's name - such as their partner or housemate – who goes through the identity check and onboarding before handing the account back to the worker who will be dual-accounting. In both cases, riders must use an alternative phone, requiring a capital outlay for the cost of device and a monthly network plan. The fact people absorb these costs suggests the profitability of the approach.

Unlike other systems that are openly discussed among riders and actively encouraged, dual accounting is sought out and villainised by the community. This is because the perceived target of the gamification shifts from the platform (as when multi-apping) to fellow workers. Where other attempts at gamification – even if not successful as resistance – create solidarities among riders sharing strategic advice, dual accounting is understood to directly undermine the rest of the worker community. Whilst these other forms of gamification foster a sense of 'us against

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26. Those with good statistics are worth more as they often come with priority access to shift booking, meaning the owner gets the pick of the most profitable shifts available.

them' (i.e. 'riders against the platform'), dual accounting creates a sense of 'us against us' or 'you against me' (i.e., 'riders against other riders'). This is thanks in part to the opacity of the labour distribution algorithm and the information asymmetries that play out across the worker community. In a sense:

"Having an account for Mercury Meals feels like having a raffle ticket for a job. If you have two raffle tickets in two different raffles, that's fine. But if you have two tickets for the same raffle, when everyone else only has one, then that's unfair and it's a problem" (Katya Interview, April 2019).

This breeds tension within the rider community, fomenting new divisions in the labour force that can become racialised as discussion plays out among rider groups that are already refracted through cultural-linguistic barriers. I found this particularly challenging in my ethnographic work at the Union, hearing some workers complain: 'Oh it's all the [insert racial group here] that have two accounts because they're greedy! What about me!' (Ethnographic Diary, April 2019). The challenge for the union was to first de-racialise the discourse before contextualising it among the broader systems of platform capitalism and the hostile environment by reminding workers that most people would not do it if pay and conditions were not so poor. Sometimes, this was effective, but when it was not it left workers feeling dissatisfied.

Polemic issues like this either galvanise workers into joining a union – unhappy and disheartened by the way things are – or push workers away – unhappy and disheartened by the way things are. Dual-accounting's toxicity for solidarity with the broader rider community forces the Union to take on a position that is unpopular with some workers who subsequently turn their back on union membership. Gus (Interview, January 2019) thinks platforms:

"Let it happen. Because unless it's a really busy day and there's not enough riders, it doesn't harm delivery speed or anything. It keeps us divided. Plus, they have the geo-location data for all our accounts. Having two move along

identical trajectories *must* show-up in the system. Either that or they're not as smart as they want us to believe."

Rather than fighting for a bigger slice of the platform cake, dual-accounting keeps riders arguing over the crumbs, something that must be overcome if gamification is to make the leap to effective resistance.

7.3.3 Discussion

Both of these gamification strategies require riders harnessing their position at the interface of payment systems and delivery markets to exploit opportunities and earn higher incomes by creating agency. As such, they encourage a growing consciousness around the conditions of work and the exploitation of rider labour that comes with it. Whilst both strategies may be subversive and hold differing resistance potentialities, neither of them have yet succeeded in existentially or pragmatically threatening the platforms' existence or ability to operate smoothly in their current form.

In some cases, it actually improves platform performance as workers gaming the system to undertake more piece rate jobs means each job is completed quicker, hitting one of the platform's KPIs, to deliver quickly. In Burawoyian (1979) terms, this playing the game includes within it an implicit 'consent' to the broader rules of the game, and by extension, the logics of platform capitalism. However, this is too simple a reading for the gig economy. In Burawoy's Allied factory, the surplus value creation was disguised, yet clearly present and understood by workers as a motivating factor for management (i.e. profit). In the platform economy, this value creation is more successfully disguised. Gig workers know that the companies they work for are loss making (Deliveroo recorded £327million in losses in 2019 for example). But workers also know that they are producing *something* of value amidst these massive losses, and this involves the service provision of delivery, the generation of data, and the speculative growth of the firm (see van Doorn & Badger, 2020, Christophers, 2020; Sadowski, 2020). How this becomes value in the context of a firm enjoying huge

increases in corporate valuation is difficult to pinpoint, making it harder to effectively target resistance.

Workers and unions must continue the hard work of decoding this surplus value creation by directly challenging the taken-for-granted rules of engagement that are bound-up in the platform's design. Returning to Woodcock and Johnson's (2017: 551) study of gamification from below is illuminating here. Whilst primarily concerned with salaried work that is a far-cry from the piece-rate precarity of the gig economy (see Graeber, 2018; Paulsen, 2011), it is the *process* – rather than the effects – of gamification from below that may be most important for riders moving forward. By reviving the interventions of the Situationists' approaches to the everyday, gamification from below generates "moments of critical reflection" (Woodcock & Johnson, 2017: 551). For Swyngedouw (2002: 157), these moments or 'situations' "subvert, dislocate and undermine the 'normality' of the everyday and show it to be what it really is i.e. the putrid, stale, alienated and repetitive cycle of ever the same." By undermining the platform, workers are further empowered to understand the rules of their work, the points at which they must comply, and the points at which they can resist or be non-compliant. These constitute acts of micro-resistance that may form the pre-conditions for future actions and organised resistance, facilitated by an intimate knowledge of platform systems and how they can be subverted. As such, a new conceptualisation of gamification, distinct from that of Burawoy's piece rate industrial capitalism and Woodcock & Johnson's (2017) salaried post-industrial work, is needed for the platform economy.

Whilst gamification from below can be part of a broader process of consenting to the platforms' rules, this does not mean it is done uncritically. Yes, some riders are uncritical and believe they will succeed by ruthlessly gaming the system to become rich and be able to retire early, but these were a minority of those I spoke to and were mostly novices. Most workers were painfully aware of the fact they were being exploited by the platform's gamification from above, they just couldn't see any other option available for now. But by gaming the system they began to test its limits, to try and understand the platform logic, and their own place within it. They became

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workers actively engaged in attempting to divine their own destiny at work for a future of sustainable platform labour. Pairing this with a shared acceptance of exploitation created fertile grounds for solidarity building that extends beyond the individualising nature of the platform's app, and into the communities that exist on the street and in online networks across cities all over the UK. In being united in gamifying the experience of work to survive today, they are laying the groundwork for resistance that could change the balance of power on the platform tomorrow, forming the preconditions for collectivised resistance and direct action at work in the app and beyond, into the streets.

7.4 Site II - The Street - Collective Resistance

The street is the location of grass-roots organising and demonstrations against platforms. I engaged in both of these activities during my ethnographic work at the IWGB. Specifically, the analysis below splits street-based resistance into three distinct phases: the 2016 wildcat strike; the subsequent wave of labour organising; and the response to changes in platform conditions (IWGB 2016b). It begins, then, with analysis of the first street action taken against Deliveroo in August 2016. This intervention was the first of its kind, igniting a wave of industrial action in the UK and other European markets (Cant, 2018; Tassinari & Maccarrone, 2017; Transnational Federation of Couriers, Eurofund, 2021). This wildcat strike was supported by the IWGB who subsequently organised workers in the capital and other satellite cities. Analysis of street-based resistance then turns to the organisational changes that have taken place following industrial action. These reorganisation efforts stem directly from the workers' knowledge of, and engagement in, the labour process specific to each platform. Where platforms changed, workers needed to explore the new organisational systems to locate exploitable chokepoints for further union activity. The section ends with discussion of the 2018/19 actions that broke the mould established in 2016 to present a new way forwards for platform workers to engage in street action.

7.4.1 Phase One - August 2016: First strike against Deliveroo in London

The first UK strike emerged in London as wildcat action in August 2016. It came in direct response to Deliveroo announcing unilateral contract and payment system changes. This dislocated riders from the small but secure payments they had been receiving - from a Pay-Per-Hour (PPH) system of £7 per hour + £1 commission per job to a Pay-Per-Drop (PPD) system of £3.75 per drop with no hourly rate. This shifted remunerated work from the entire time a rider is logged in (including time spent idle) to just the time spent on an active delivery. Given that Deliveroo's offer to customers and restaurants is fast delivery, it is implied that some riders must be idle in order to respond instantly to delivery requests and fulfil this promise. Thus, riders considered waiting as part of the work. The changes also proposed transitioning staff from set shifts into flexible arrangements, thus meaning the guaranteed income they could earn through regular, guaranteed shifts would also be at risk. Whilst this brought modestly higher earnings at busy times, it simultaneously represented a destabilisation of rider incomes, introducing a heightened sense of precarity.[27] The strike began at 5pm on Wednesday 10th August, with riders descending on the Deliveroo Headquarters at Torrington Place, instantly switching off the labour supply. Ravi (Interview, 2019) recounts that "I was just picking up an order at Rich Mix, no idea about the strike. Then a Brazilian rider came over and told me so I logged off and we rode in together."

The strike lasted seven days, with the IWGB union coming in to support from day two onwards. The timeline below (figure 7.3, compiled from IWGB, 2016a; 2016b; 2016c; 2016d; 2016e; 2016f) outlines the events as they unfolded. My account below follows the contours of the 2016 strike action, beginning with how workers created a space to organise on the streets, went on flying pickets of

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27. In 2016, despite riders still being 'self-employed', Deliveroo operated a rigid shift system, wherein "you booked on to work at least two shifts a week, on the same regular hours and if you couldn't make it, you had to tell them or risk being fired" (Ravi, Interview 2019)

restaurants, and mounted a press campaign instructing customers to boycott the platform.

August 2016

	Wed 10	Thu 11	Fri 12	Sat 13	Sun 14	Mon 15	Tue 16
	Strike begins 5pm 20 riders enter Deliveroo Offices to negotiate with management. Negotiations fail. All riders terminated.	IWGB arrive in support of strike Demands agreed	Flying pickets begin Strike fund opened	Appeals made for customers to boycott Deliveroo Riders return to their normal zones to encourage others to join strike	Strike fund reaches £7,500. Fund closed and funds made available to union members (and new sign-ups)	Picket Deliveroo Recruitment offices Protest at Deliveroo HQ Drivers given notice to stop striking or face being fired	Small group of riders enter negotiations with Deliveroo. Negotiations last 1 hour. After this the strike officially ends.

Figure 7.3 – *Timeline of events of the 2016 Deliveroo Strike.*

7.4.1.1 Creating a space for workers on the street

Whilst Deliveroo mostly communicated with workers via a smartphone-app, the platform's headquarters on Torrington Place provided the meeting point protestors needed. By logging off en masse at 5pm, workers became momentarily invisible to the platform as the digital representations of their bodies in Deliveroo's technical systems vanished. When they appeared on Torrington Place soon after, making noise, revving engines and demanding to speak to management, their fleshy bodies (usually disguised and disembodied behind data derivatives of their performance) were rendered hyper-visible to Deliveroo's management.

By making the street outside Deliveroo's HQ the base camp for the strike that was set to unfold, these workers consciously *created a space* where their bodies and bikes were visible to each other and platform management – adjacent to the corporate organisational space of the office rather than the organisational space of the app. For the first time, there was a single location where a community of riders could discuss and make democratic decisions face-to-face, standing in contradistinction to Deliveroo's opaque management-by-algorithm and unilateral

decision making powers. Torrington Place offered the opportunity to interface and build social solidarities, overcoming the atomising effect of the techno-urban distribution of work.

Whilst the Brazilian diaspora community were numerous, the strikers sought to grow the demonstration to exert greater pressure on Deliveroo. To do so, they used large WhatsApp groups that brought a variety of the workforce together. According to Frank (Interview, 2018)"

"There were big English language groups, and then each community would have their own: say Portuguese, Urdu or Hindi WhatsApps. Bi-lingual workers would be in both groups and translate messages from the English groups into their own community and vice versa."

Thus, key bi-lingual workers acted as knowledge brokers between otherwise fragmented cultural-linguistic groups. Frank recounted that these groups had always existed in small numbers, but they:

"Really proliferated in the months before the strike… basically, a few months earlier, Deliveroo had worked with the UK Border Agency [UKBA] in a horrible co-ordinated raid at an onboarding centre in Islington [a local Deliveroo office]. People were deported, the whole thing was a mess" (*ibid.*, see also, Morris 2016).

A few weeks later, Byron Burger also coordinated with the UKBA to facilitate the detention of 35 of their workers with some deported in the subsequent weeks (O'Carroll, 2016; Slawson, 2016). Waters & Woodcock (2017: n.p.) assert that:

"Riders began boycotting Byron orders… co-ordinating this action through WhatsApp, social media… [moving the message] through drivers in different parts of the city. These combined to create a climate in which there was greater

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cohesion and solidarity. The connections between the multiplicity of socio-spatial layers were thickening."

Thus, these immigration raids created the preconditions and communicative networks for information to travel across organisationally structured boundaries (zones) that were digitally overlaid onto urban space. It also showed Deliveroo's large migrant workforce that the platform would not protect them against the state, whilst other workers would support them.

A further strategy for growing the strike involved harnessing the offers of new platform entrants into the market. Having recently launched in London, UberEats' marketing campaign to attract new customers offered £5 free credit alongside a separate 'free Ice cream delivered in 5 minutes' promotion. Riders knew that Deliveroo workers had considered joining up to the new UberEats service (similarly to Monzil's efforts in Site I to muti-app for higher fees) and that by taking advantage of this customer offer they might be able to attract more Deliveroo riders to the picket line. Frank remembers:

"Everyone just downloaded the apps and ordered bottles of water or ice creams to the hot picket line on the £5 credit. When the [UberEats] rider turned-up we'd tell him about what we're doing and try to get him to stay and support the strike" (Frank, Interview, 2018).

By organising in the street and combining specific knowledges of platform systems and worker communities with the awareness of ongoing platform offerings to customers, striking Deliveroo workers were able to bolster their own numbers and plant the seed of resistance among another allied workforces in the platform economy. This also led directly to the IWGB-organised UberEats protest that followed just a fortnight later in South London (Davies, 2016). By the end of the first day, twenty riders went in to negotiate with the platform. Negotiations failed and all the workers were suspended (IWGB, 2016a).

On the second day of action, the IWGB Couriers and Logistics Branch (CLB) arrived in support of the protest. Deliveroo offered to speak to individuals on a one-to-one basis, but the riders resisted, pushing for group negotiation with elected representatives. According to Rebecca (Interview, 2018) "eventually Deliveroo agreed that IWGB Couriers Branch people would go in to negotiate on our behalf…. They didn't work for Deliveroo so they weren't at risk of losing their job." The union's successful campaigns at other courier firms in London provided the necessary expertise to build mutual trust and understanding. This was enhanced by the union's own history, having grown out of a migrant worker struggle at SOAS where - just like Deliveroo and Byron - the university had collaborated with UKBA to deport 9 cleaners (Toscano, 2009). Accordingly, the organisation is sensitive to the specific intersectional concerns precarious migrant workers face and were therefore able to quickly build trust and collaborate with the strike leaders.

These negotiations centred on a group of mutually agreed demands put forward by the workers (figure 7.4 below, IWGB 2016a):
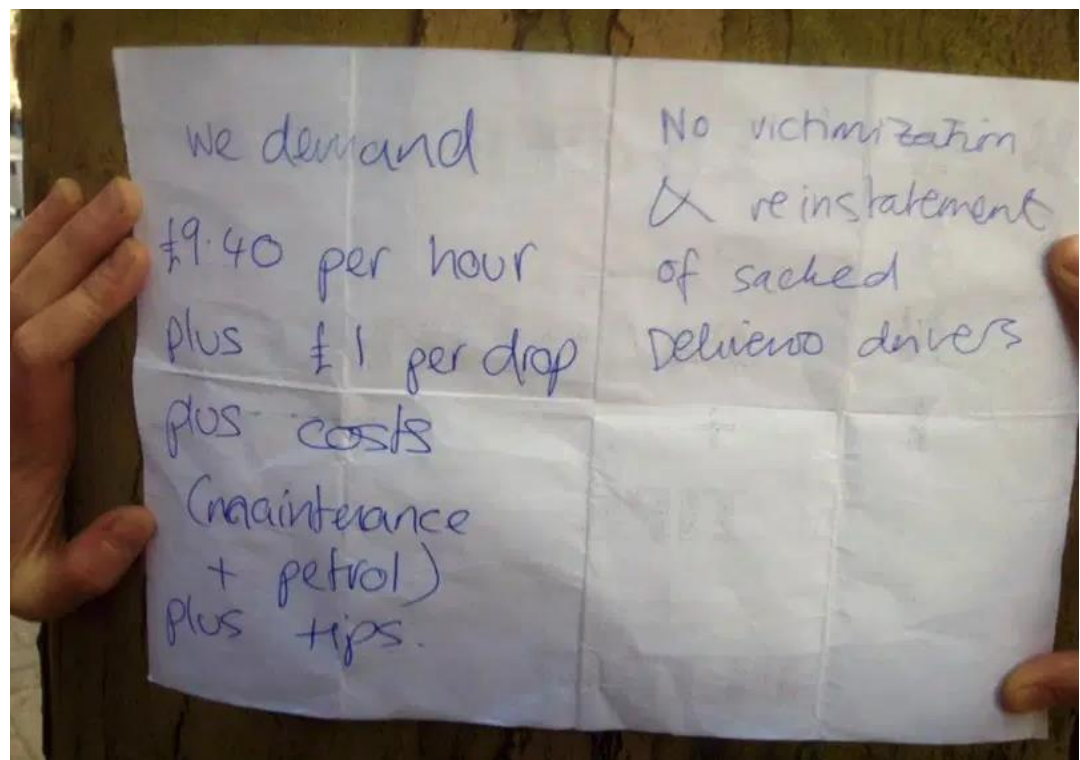

Figure 7.4 – *Striking riders' demands*:

£9.40 per hour base rate (London Living Wage at the time)

+£1 per job commission

+ Costs (maintenance, insurance, fuel, etc.)

+ Tips

+ Re-instatement of sacked workers and guarantees of no victimisation going forward

These demands were made on the street, with workers huddled together discussing what would be fair and achievable. They were written and agreed upon on the pavement, in the shadows of the platform's glossy corporate office. Once again, they were unsuccessful. The strikers agreed that to create more pressure they needed to target another part of Deliveroo's business, the restaurants.

7.4.1.2 Engaging the restaurants with flying pickets

Following the failure of negotiations, strikers voted to take their message to the restaurants on a flying picket, thus focusing on clients rather than the platform to exert pressure by proxy. The strikers split into a small group occupying Torrington Place and a large convoy of riders who got on their pushbikes, motorbikes and scooters to tour popular restaurants, making as much noise as possible and speaking with restaurant staff along the way. Mac (Interview, May 2019) reflects that "most restaurant staff were really supportive. They knew they were getting ripped off by Deliveroo too. Some of them turned off their order stations to join us in solidarity". By targeting a second side of the platform's business model, riders were able to amplify the pressure they could apply.

This tactic required riders to deploy the rich knowledges they had built-up around restaurants through regularly visiting them. Riders knew which popular restaurants would be busy at certain times (and therefore the most damaging if taken off the platform). Riders also harnessed the personal relationships they had built-up with restaurant staff across hundreds of fragmented conversations over picked-up orders to encourage restaurants to comply. Those that that did not comply were picketed and riders arriving to pick up orders were greeted at the door and

urged to join the strike, ruining the atmosphere inside the restaurant, creating costly wastage for food that went undelivered and providing the opportunity for strikers to recruit more riders to join them.

Furthermore, riders began using these flying pickets to occupy urban space. Workers were able to create 'traffic slow-downs' - by filling the road and moving slowly – or could block entire junctions by placing their bikes across them and refusing to let the traffic pass. Because of the way Deliveroo's systems route riders down key arterial streets (Gregory & Maldonado, 2020), the location of these traffic interventions was chosen to slow-down live orders in Deliveroo's system, to increase visibility of the strike to non-striking workers, and to begin making the strike visible to members of the public beyond the small geographical area of the pavement outside Torrington Place. However, with negotiations continuing to stall, riders elected to target the third and final side of Deliveroo's market, the customers.

7.4.1.3 Appealing to customers through coordinated press action

This final strategy involved getting the public's attention through media spectacle, often featuring large displays of uniformed men with placards appealing for support. The union in particular was able to lend its expertise and contacts with sympathetic journalists. Riders self-organised to give interviews at key locations, aided by union staff in presenting these demands to a range of audiences. This included a video for *Novara Media* (2016) and a *Guardian* article by Dewhurst (2016), in addition to coverage across all major print media and interviews with *Channel 4*, *ITV* and *BBC News*. Others interviewed for journalists such as Sarah O'Connor (2016: n.p.) at the *Financial Times*, whose joint coverage of the Uber and Deliveroo strikes located the street as a key battle ground and iconic emblem of the action: "The small London side street reverberates with the growl of motorbikes and the shriek of horns." The press became a critical tool in making visible, and communicating to the public, the true nature of working conditions at Deliveroo. The street was simultaneously cast as the stage on which the narrative was set, and a key character in the accounts of the demonstrations that followed.

By the fourth day, striking workers began appealing for solidarity from the public in the form of a boycott (see figure 7.5, IWGB, 2016). Large banners were being used in press packages and reports that directly appealed to the customer, targeting the third side of Deliveroo's marketplace.

Figure 7.5 – *A large worker-made banner urging customers to boycott Deliveroo (IWGB, 2016c)*

PROPER FOOD, PROPER DELIVERY,
PROPER WAGE SLAVERY

Figure 7.6 - *'#Slaveroo' imagery made and disseminated by strikers (IWGV, 2016c)*

These were part of a broader visual identity now being created by striking workers on the street through signs, symbols and placards. Elsewhere, delivery boxes were being piled-up to block the streets. These countered the PR campaign Deliveroo had waged to this point, casting themselves in a 'sharing economy' vernacular, staffed by impassioned cyclists looking to make beer money (Ravenelle, 2017). #Slaveroo became a widely used hashtag, joined by the subvertising inspired image of Deliveroo's mascot and logo tied down with a ball and chain (figure 7.6 above).

Over the course of a week, these workers had transformed from a disparate collection of fragmented groups into a striking unit with a coherent identity. But Deliveroo still refused to meet their demands.

7.4.1.4 Leaving the street, storming the office

On the final day of action, drivers, now exasperated with the lack of progress, stormed into the Deliveroo headquarters demanding to speak to management. Whilst management refused to speak to union organisers, they agreed to speak to 10 representatives from the rider collective. Negotiations lasted a tense hour. Deliveroo declared they would row back on most of the proposed changes and not force any individual to convert to the new system. A partial victory was declared (IWGB, 2016f) as Deliveroo offered guaranteed payment in peak hours, and an agreement to guarantee jobs and not pressure riders into signing the new contracts.

In the months that followed, immense pressure was placed on workers who did not sign the new pay deal, with many:

"Dismissed on other minor infringements. But we all knew it was really because we wouldn't sign their new contract… Even before it all ended, we got phone calls from unlisted numbers telling us that if we didn't sign we'd be fired." (Arlo, Interview, 2019).

Amidst this, new workers were constantly coming on stream who only ever knew the new Pay-Per-Drop terms. This fragmented the workforce further and caused tensions. As such, the coherent group of August 2016 strikers shared solidarities that were not felt by the new intake. Whilst it may have moved the needle on the narrative that 'gig workers are all happy and flexible' and 'you can't organise in the gig economy', ultimately the hard-fought successes of 2016 began to vanish over time. However, by demonstrating together and going on strike outside of the Delveroo HQ, by touring the platform's primary restaurant partners, and by calling on customers to boycott, riders showcased the efficacy of using the street as a site of resistance, even if the victories were partial and temporary.

7.4.2 Phase Two – September '16 - May '17 – organising workers outside of a dispute

The IWGB organised and administered a strike fund for the August demonstrations that became a means to sign-up riders, as strike pay was only made available to union members. According to Ravi (Interview, 2019), the BrazilaRoos who started the strike:

"Didn't join-up in big numbers because they didn't see what it could give them. The union wasn't recognised by Deliveroo and they'd started the strike without them. They had the community already."

However, the union struck a chord with other strikers: "there was an optimism in the air and a hunger for more because we hadn't totally won yet" (*ibid*.). Many of the union's principle organisers for the next three years signed-up in this wave, going on to circulate knowledge, build rider networks and organise demonstrations as the elder statesmen and women of the gig economy labour movement. After the first batch of post-strike sign-ups, the long-term process of organising began in earnest. This phase consisted of three primary modes of organising, each of which are explored in turn below: local street-level organising; building (national) communication networks; and satellite organising.

7.4.2.1 Local street-level organising

The IWGB began by focusing their organising efforts on a single London zone, CKT (Camden and Kentish Town). Many members already worked there and had strong community links that would become the foundation for organising moving forward. This approach also tied in to the union's legal strategy, the rationale for which is discussed in greater detail in Site III below. Crucially, the union understood that Deliveroo divided up the map into zones that were used as geographical organising units for each locality. Workers were assigned to zones and had semi-regular shift patterns, meaning they knew the area and their colleagues well. They also knew the location and rhythms of the 'zone centre' that became a linchpin in the organisation effort:

"The zone centre was an area strategically close to all the main restaurants where we were ordered to wait when idle… it's usually just a park bench or something where riders wait for jobs" (Jon, interview November 2018).

For Achille, this tightly geo-fenced area was:

"Particularly useful for organising, because they were busiest when work was quietest. So, if it was dead, none of us were earning and people's minds turned to the bad rather than the good. People are much more receptive to conversations about unions then." (Achille, Interview, 2019).

Because riders were mandated by Deliveroo to wait at these locations when idle, they became breeding grounds for agitating and organising workers.

Despite these spaces, people still felt nervous about joining-up. "It was a paranoid time and lots of people were worried about company spies and stuff" (Tim Interview, 2018). Ravi (interview, 2018) recalls the system the union devised to combat this fear:

"We had a sign-up pact. So, when people were nervous about signing-up, we'd take their name and email and agree they'd join once 99 other people had done the same. Then, when we had 100 names we called around and everyone joined together so no-one had to do it alone."

This highlights the power of developing strategies that directly target and overcome how workers experienced their atomisation. The strategy was so successful that Rebecca recalls: "Deliveroo started calling people-up who they knew *really* needed the job and threatening to terminate them" (interview, 2018).

However, this zone centre approach was not totally infallible, falling victim to the idiosyncrasies of town planning. Reflecting on the eventual collapse of organisation efforts in Brighton, Achille (interview, 2018) lamented that "the whole

resistance in Brighton was fucked because of the one-way system in the North Lanes." The zone centre of the Brighton zone was located in the cramped shopping and restaurant district in the middle of a one-way street. This meant cyclists could access the zone centre by using the contra-flow, whilst moped riders – restricted by the one-way system – had to wait at the other end or go on a convoluted route. Over time, the hubs became the foundation for two distinct communities of workers, divided by their vehicle type (which correlated with their cultural groups as older migrant men often worked on mopeds, whilst younger British men worked on pushbikes). The cyclists observed the mopeds got more jobs – which because of the piece rate pay systems posed a direct threat to cyclists' earnings. The informational asymmetry that meant riders did not know how orders were assigned "sprung the rumour mill into action" until consensus was reached. "We all thought it was because the algorithm knew mopeds were quicker uphill and Brighton is hilly, so it favoured them… Because we didn't really speak to the mopeds, everything just broke down" (Achille interview, 2018). This disintegration highlights the crucial role of communities and spatial proximity for building social solidarities and how fragile these can be, here broken down by otherwise innocuous street planning coming into constellation with information asymmetries that keep riders uninformed about each others' working lives.

7.4.2.2 Building national communication networks

The second strategy was to spread the word to other riders, coordinate networks of workers, and build communication lines between otherwise isolated groups. Whilst on their way to the Transfederation of Couriers meeting, London rider Ravi and Brighton rider Achille sat together on an overnight Megabus to Brussels. During the 24-hour round trip, and spurred by the conversations taking place at the meeting, they devised a publication, the *RebelRoo*. The *RebelRoo* would be a worker newspaper/flyer that communicated stories from around the UK of worker struggle and organising, connecting-up geographically dislocated groups of workers in a collective discussion. It aimed "to help Deliveroo workers in the UK and internationally communicate and organise. Together we can build solidarity and fight

for better wages and conditions" (*RebelRoo* issue 1). It circulated tactics, ideas, grievances, desires and demands. Achille recounts that:

"At its height we had 1500 downloads a month on the *Roo*, and that's without the printed copies or anything. Given that we think there's 15,000 riders in the UK maximum, then we know 10% are downloading it, which is awesome!" (Interview, 2018).

In addition to the downloads, organisers distributed hard copies to workers in zone centres. As the paper grew, it encouraged more and more workers to join the union, to share their stories, and to organise others. The *RebelRoo* lifted the veil on local differences in the organisation and conditions of work for Deliveroo where "riders had just assumed it was the same everywhere" (Ravi Interview, 2018), collectivising and galvanising struggle within and across regions.

7.4.2.3 Satellite Organising

The third strategy involved consolidating these local groups into a network of satellite organising that devolved the movement beyond its London-centrism by empowering local workers to do the organising. This meant that issues could be addressed on a local basis. For example, in Brighton there was always a £4 pay-per-drop rate so organising around not changing the £7 per hour rate was irrelevant. Brightonian riders' concerns centred on over-recruitment and decreasing wages. Meanwhile Bristolian riders' concerns were over kit, and so this was a focus of local organising. Once local branches were big enough, demonstrations took place and victories were won on these issues.

Localised organising led to localised demonstrations and localised victories that addressed localised issues. This created a patchwork quilt of labour relations at Deliveroo, with the work being tangibly different from city to city and zone to zone. Whilst riders in Bristol were moving onto a pay per drop rate, just like in London, they were not mandated to wear uniform at work. Meanwhile in London, riders were

forced to wear uniform but some zones had pay-per-drop and others had pay-per-hour systems in place, each of which used riders on different work contracts. In Brighton, workers were paid £4 per drop as opposed to the £3.75 on offer in pay-per-drop areas of London and Bristol, but enjoyed a hiring freeze in the city, the first of its kind on Deliveroo in the UK. This demonstrated the efficacy of localised labour organising in the platform economy. The victories, although small, were coming thick and fast, prompting a change in approach from Deliveroo.

7.4.3 Phase Three – May 2017 Onwards – Changes to the organisation of work, changes to the organisation of workers

Possibly in response to worker resistance, possibly as part of a trajectory of organisational growth, likely both, Deliveroo implemented a series of changes to the platform throughout 2017 and 2018 that radically reorganised the distribution of work. This saw a move away from the patchwork quilt of localised labour relations into a new era of homogenous, nationalised organisational processes. However, work still maintained its local flavour for riders, because conditions were impacted by the local geographies of each place (terrain, climate, culinary landscape, etc). Taken together, these changes heavily impacted the way labour could organise, creating challenges to which unions needed to respond. In August 2016 a strike in a zone could cripple it in an instant, forcing Deliveroo to admit defeat, turn off the zone and suffer the consequences with restaurants and customers. Eighteen months later a strike in a zone could be mitigated by Deliveroo drawing in riders from neighbouring zones by offering them higher fees. This section of the chapter explores these changes, the challenges they presented organised labour, and how the IWGB responded. Specifically, these relate to the challenges of: the reducing significance of the zone as an organisational unit, changes to how Deliveroo communicate with workers, and changes to payment systems. The discussion ends, optimistically, with reflection on a new opportunity created by these organisational changes at Deliveroo.

7.4.3.1 Challenge I: Reducing the significance of the zone:

In 2016, the IWGB utilised Deliveroo's zoning system to their advantage, targeting specific zones and using zone centres as the launch pad to do so. By 2018, Deliveroo had drastically decreased the significance of the zone in the organisation of rider labour. Instead of being permanently assigned to a zone, riders were free to work wherever they liked. Whilst in 2016 a rider in Camden would find it hard to access work in Mayfair, by 2018 a rider in Glasgow could – in theory – get on the train to work in Mayfair. Access to work in each zone was now only limited by geography, not organisational practice. Furthermore, workers could now log-in and accept work from anywhere in the zone, with no obligation to return to a zone centre when idle. This lack of central meeting place made capturing riders' attention and holding discussions difficult. Instead, fleeting moments at traffic lights and restaurants became the most common meeting places.

To identify new strategies, the IWGB secured funds to employ Deliveroo specific organisers to dedicate time to the effort. Staff turnover meant membership of Deliveroo drivers among the Couriers and Logistics Branch was decreasing and needed to be rekindled before further action could be taken. They started by speaking to riders that were still members and located key areas to set up a trestle table on the street and offer riders tea and conversation to discuss the union and other elements of courier life. This created a new hub where riders could regularly meet with each other and take a short break in a shift, replicating the zone centres that existed before. It built a community and presence that could outlive staff turnover. The street was a key actor throughout this resistance strategy: as a place of work, a place of recruitment, and a place of display. For riders, the street and app combine to form the workplace, and hence the street is where the resistance would be forged, informed by the way the app structures the labour process.

7.4.3.2 Challenge II: Changes in communication:

The second challenge related to the way Deliveroo communicated organisational changes. Having learned from their previous attempts at changing pay scales (that prompted the 2016 strike) they opted to soften the blow with proactive communications management. Tim recalls that:

"I got an email offering £50 to come and talk to a researcher from Deliveroo for an hour, and I was like 'oh brilliant, they want my input!' How naive! Essentially, they wanted to test how I would respond. They'd already decided exactly what changes they were making… changing from the same payment per drop everywhere [£3.75], to distance based fees. They wanted to gauge my reaction to how they'd sell it to us [riders]. They said 'right, imagine you've just got this email from Deliveroo, what would you think?' I said: 'I'd be instantly suspicious. It's a cost saving exercise and my wages are going to suffer'. Next, they asked 'how about if we added this extra line?', and the line said: 'and now, you'll be able to see where the customer is before you choose to accept or reject an order'. So I was like, 'well, I'd feel a bit better because I'd be able to not take the ones that are further if I didn't want to.' They'd gone onto my account, and next they showed me a relatively short job I *actually* did earlier that week. They said 'you did this job the other day, now that we've explained this new system, how much do you think we'd pay for that job?' It was short, so I guessed less than the standard fee', '£3.60' 'Oh, no. You'd get £3.90 for that one', and so obviously I was like 'okay, well fine! If this is what you're telling me then it sounds good'. What they didn't tell me was that the formula can change at any time. So obviously when they first introduced distance-based fees, the formula was pretty generous, even an average job paid above £3.75 and you could get quite a lot for long distances. But now, it's a case of most being slightly below £3.75 and the really long ones are only slightly more than £3.75. So, really, they didn't actually want my input, they were just working on their comms by seeing what I thought was acceptable…That's how they engage with riders, isn't it? They didn't want any info. It was just 'we know what we're going to do, how can we sell it to you?'" (Tim Interview, 2018)

By A-B testing riders to find the best way of breaking the news, Deliveroo pre-empted and mitigated any backlash they might get as the result of the new change. Tim eventually received a version of the emails he had read at Deliveroo HQ. This is a sophisticated mode of fleet management that paired positive messaging with specific data from each rider's job history to show earnings differences. It was effective. There was considerably less resistance to this new payment system when it was introduced. A demonstration at Deliveroo HQ was organised, but only seven riders turned up. Strong and positive PR through riders' inboxes had mitigated action on the street.

For the Union, this made it more challenging to counter the corporate narrative, leaving riders less open to agitation. In response, the union rebranded to 'Riders RooVolt', with organisers leading new on- and off-line campaigns, sticker-bombing busy areas and distributing business cards encouraging people to join the union and their rider-member WhatsApp groups. These groups provided a space to communicate directly with workers and counter platform company narratives. Again, these group chats represent structures that can outlive staff turnover as members leave and enter over time.

7.4.3.3 Challenge III – Changes to payment systems

The new pay by distance system trialled on Tim above was a critical point of departure for Deliveroo. Now payment was not set at a fixed price, and was therefore open to change without new contracts being drawn-up and accepted (as in the 2016 strikes). Although there was a pay increase when the system was first introduced, Deliveroo quickly used their new ability gradually to decrease the amount riders were being paid. They 'changed the formula over time' and rider wages have directly suffered as a result (Mellino et al, 2021).

This has structurally weakened the capacity of workers to go on strike as lower pay has sunk ever greater numbers of riders into precarity. According to Arlo

(interview, 2019) "most riders just can't afford to go on strike now. We're too poor."

In response, the IWGB have changed their approach to striking from the practice established over the waves of 2016 and 2017 (Cant, 2018). Unlike in 2016, where the strike lasted 7 days and riders remained logged off for all of it, the new approach focuses on short, sharp actions that are highly targeted to do as much damage to Deliveroo with as little damage being absorbed by the workers as possible. By targeting these micro-temporalities in Deliveroo's market, workers could destabilise the platform for the night, whilst still being able to work before and after or for another platform to earn enough money to survive. In many cases, restaurants also turned off their Deliveroo order terminals for the duration of these short strike periods, further pressuring the platform. Action now centres on key nodes within the Deliveroo network that are locatable and materially present in the city: the centre of the strike has changed, from a now non-existent zone centre or corporate HQ to the spaces outside the restaurants platforms serve. Whilst Deliveroo may host thousands of restaurants on their service, only a handful of these are the most popular (Wagamama and Five Guys, for example). Here, in depth worker knowledge about which restaurants are most popular is being directed at collective resistance.

7.4.3.4 New Opportunities: Deliveroo Editions

With all of these changes to how Deliveroo does business, new opportunities - such as Deliveroo Editions -- are beginning to emerge (Shenker, 2021). For context, Deliveroo Editions Kitchens are Deliveroo owned commercial kitchens that restaurants can hire to have a presence in the zone. For example, Figure 7.7 below is of the Editions site in Blackwall, an area ripe for Deliveroo's entry – deprived, and thus rich with a potential workforce, whilst being nestled between the wealth of Canary Wharf and the New Providence Wharf developments.
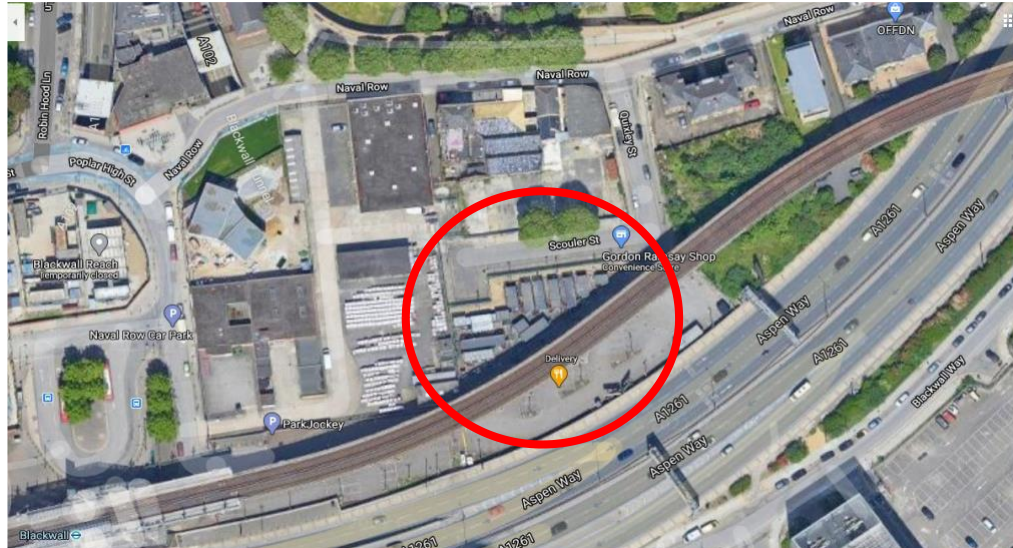
Figure. 7.7 – *Map showing Blackwall 'Editions' kitchens – shipping containers underneath a DLR fly-over and only accessible from the carpark in the bottom left of the image. (edition in red circle, access road in yellow).*

These sites have been controversial in the communities they have entered - often without planning permission or the relevant sign-off from local authorities (Fraser, 2021) – and provide a chokepoint for unions to organise around. The example above shows the arrangement of the shipping container kitchens and a single point of access. By picketing the only road in and out, a small number of strikers are able to intercept and engage with hundreds of riders trying to access the multiple kitchens inside. Where Deliveroo have attempted to use these urban spaces to their advantage, organised labour has been able to turn these points of proposed efficiency into sites of rupture and resistance.

These shifts in approach highlight some key findings from the growth of platform unionising. Firstly, successful organising in the sector requires a worker led approach that privileges the knowledge workers develop of the times and spaces of organisational processes throughout their daily working lives. Geographical knowledge of how work is done in the city is key. Secondly, strikes – when successful – precipitate organisational change in the platform which must then trickle down into labour organising changes if unions are to remain relevant. This is a cycle of change

that will hopefully, over time and through future iterations, come to improve working conditions in a sustainable way. With the right tactics in place even the most precarious workers who are struggling to survive on poverty wages are able to take action. Indeed, bringing them into the resistance efforts is crucial. Otherwise, the most vulnerable will be left behind and unrepresented in the demands made of platforms and of the benefits any victories may bring. Unions need to support in every way they can, especially given the gig economy's deeply asymmetrical relations – but it must be workers who lead this challenge. Finally, we can see that action is effective – even if only in the short term – and capable of generating much needed change.

7.5 Site III - The Courtroom - Legal Challenges

The courtroom has become a critical site for resisting dominant platform narratives that construct riders as 'independent contractors' rather than employees or workers with high profile cases such as Aslam, Farrar & Others v Uber (2021) highlighting the efficacy of the courtroom in resisting platforms. Whilst asymmetrical relations make effective direct action from below challenging, workers can use the legal spaces of the courtroom to address platforms via the machinery of the state to impart change from above. In this movement up in scale, the debate transitions in scope, simultaneously distilling the rich details of the lived experiences of work and instead focusing on the details of contracts, precedent and legislation. For workers on the street, the Employment Rights Act (1996) or the Trade Union Consolidation Act (1992) are abstract textual forms that trickle down as a general sense of what 'rights' at work should be. Whilst they set the contextual baseline for their labour, a rider's ability to read the city and the platform's app are more immediate in meeting their survival needs in daily life. Meanwhile, the carefully nuanced impenetrability of legal documents, combined with the intimidatingly formal, theatrical framing of the courtroom make it a difficult space for lone workers to enter. Whilst some have brought successful cases (see UK Employment Tribunals, 2019 'Stuart v Augustine'),

most action is taken with support from unions and the pro-bono legal connections they offer.

The IWGB has become a key litigator in the gig economy space, carrying through the landmark Uber worker status case that finally succeeded at the Supreme Court (2016-2021). However, cases do not always succeed. This section follows the biography of a single failing case I was involved in during my ethnography at the IWGB, from the preparation for the case, to the hearing and the post litigation stories. This offers insights beyond the abstracted discussions of judgements that permeate the legal discipline into the 'behind the scenes' life of a legal case in the gig-economy. It also highlights how taking on a platform company in court can have unintended consequences as the Pandora's Box of 'employment classifications' is opened before a judge. Out of necessity, I name Deliveroo in this case study. This does not imply I worked for the platform as a rider.

7.5.1 IWGB v RooFoods

The case between the IWGB and RooFoods[28] (Central Arbitration Committee, 2017) emerged as a result of the momentum generated in the 2016 strikes and represented the IWGB's attempt to formalise some of the reconfigured power relations produced through this struggle. After seeking union recognition directly from Deliveroo – who refused to accept the request – the Union opted to go to the Central Arbitration Committee[29] in the hope of a tribunal forcing Deliveroo to recognise them. The aim was to create a 'test case' that would, hopefully, achieve two things. Firstly, to ensure enforcement of the relevant employment classifications ('Worker Limb b status'); and secondly to open-up an approach to union negotiation with a platform. If successful, it would set both a legal precedent and become the blueprint for negotiation and organising in the gig economy.

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[28] Deliveroo's registered trade name
[29] The CAC is a tribunal court for disputes between organisations rather than individuals and organisations (i.e. Employment Tribunals). Their decisions create precedent.

7.5.2 Preparing for the Case

Trade-union law states the IWGB needed to demonstrate that they had organised at least 10% of the workforce as members for their claim to be considered. Given that Deliveroo operate nationally and have practically limitless resources in comparison to the IWGB – that was mainly operating in London at the time and running on a shoe-string budget – this presented a significant challenge. Organising at the national scale would have been impossible. Even organising across London far outstretched the Union's capabilities and resources. However, as narrated above with regard to organising in urban space, the Union identified that, at that time, 'the zone' represented an organisational unit for Deliveroo (e.g. clause 3.3 of the riders' supplier agreement outlined that you should work in "your zone"). Thus, the IWGB targeted CKT zone (Camden & Kentish Town), with the aim of meeting the 10% membership threshold achievable within this specific area.

The 10% threshold was met in November 2016 and so the union applied for recognition under the Trade Union and Labour (Consolidation) Act (1992). Since self-employed workers cannot unionise and demand recognition, this demand carried within it an assertion that Deliveroo riders were 'Limb b Workers' who had been misclassified and denied their rights and protections. Thus, whilst being mandated to recognise the IWGB in the CKT zone would have been frustrating for Deliveroo, changing the status of riders from Self Employed to Limb b Workers would structurally undermine the platform's entire business model. This therefore became the primary threat to Deliveroo, over and above that posed by union recognition in a singular zone.

7.5.3 The Hearing: The question of the contracts

The hearing began on 23rd of May 2017 and lasted 4 days, taking submissions from both Deliveroo and the IWGB, including worker testimony as evidence from

both sides. For the CAC, the case hung on whether riders had to perform the work personally or whether they could appoint a substitute. If they were obliged to perform the work personally they are 'workers' or 'employees'; if they can appoint a substitute, they are 'self-employed' (CAC, 2017). Critically though, a new contract was issued by Deliveroo on the 11th May, less than two weeks before the hearing began. In the hearing judgement (and in this thesis) the new contract will be referred to as the 'New Contract' whilst the old contract will be referred to as the 'Earlier Contract'.

The IWGB were given a choice: fight the battle and likely win on the Earlier Contract, but lose in the long-run when Deliveroo presented the New Contract as grounds for appeal (thus delaying the inevitable); or, take on the New Contract in the first instance but run the higher risk of losing the case. This dilemma demonstrates the legal agility available to platforms like Deliveroo and how they can harness lengthy court appeals processes to their advantage. This inequality of contractual power (through access to world-leading corporate lawyers and the glacial pace of the British legal system) is facilitated by an inequality of financial power (thanks to venture capital backing that stacks the odds against workers and unions).

The contractual changes were substantial as the comparison below highlights:
- The new contract was issued with a covering letter detailing a rider's right to appoint a substitute.
- Clause 3.2 of the Earlier Contract – that outlined riders could have their contract terminated if they wanted to change their working hours – was removed in the New Contract, making riders appear more flexible.
- Clause 3.3's reference to 'Your Zone' vanishes in the New Contract, detaching workers from specific geographies.
- Clause 5.1 in the Earlier Contract stipulates fees of '£3.75'. Clause 4.1 in the New Contract generalises this to 'Delivery Fee' and gives no fixed payment.

- Most significantly, clauses regarding 'Right to appoint a substitute' (9 in earlier contract, 8 in New Contract) tripled in size (from 110 words, to 333 words)

- As part of this change, the Earlier Contract's reference to "as a general rule you are expected to perform the services personally" is dropped in the revisions.

These revisions contractually construct the work as that of an independent contractor, rather than a Limb b Worker and undermine the geographically bounded nature of Deliveroo's organisation, both of which were ultimately fatal to the Union's claims (CAC, 2017). Workers were, contractually at least, given greater freedom and informed of their substitution rights at length. However, riders expressed at interview that they had never substituted their labour in the past, were unaware of anyone that had, and could only see one rationale for doing so. As Jon summarises:

"Why on earth would you do it? It's just contractual BS. Like actually think about what you'd have to do to have a substitute. First you've got to do a DBS, then teach them to use the app and do the work. Then you have to give them your phone and account details and passwords because they can't get the app on their phone, then send them off to work and hope they come back and don't cause any problems. You can't put their bank account in the system, so you're paid and then you pay them. That makes you their employer so that's tax, National Insurance, pensions… It's ludicrous." (Interview, 2019)

This highlights the difficulty of substituting rider labour in practice. However, Deliveroo's New Contract claims this can be done at any time, even in the middle of a job. Jon continues to reflect on the only times in which he's seen it happen:

"Undocumented migrants are the only people I've met who are substituting and that's because they can't get any other work, so the people who own the accounts charge them a fortune and take half their pay. It just facilitates exploitation and modern slavery." (*ibid*.)

Thus, by creating 'the substitute' as a contractual fiction, Deliveroo continue to misclassify workers as self-employed whilst creating fertile conditions for the exploitation of structurally disadvantaged workers like migrants who have no other options. Asymmetrical power relations meant Deliveroo could enforce the New Contract unilaterally without prior consultation with riders. According to Kieran (interview, 2018), riders were "forced to sign the new contract. There were weeks of them terminating people for not signing".

Eventually, most riders signed the New Contract. Tim (interview, 2018) reflects that "nothing changed overnight, but things began to slowly change over time. Every app update brought something new with it, like a reject button or a new shift booking system." This alludes to the particular kind of manoeuvrability platforms have: to impart contractual change instantly to win a court case, whilst taking their time to *actually* change the organisational processes to which contract changes relate. It is clear from the CAC judgement that the contract change was instrumental in deciding the outcome of the case:

"The contractual terms under the Earlier Contract, and in practice, were markedly different and involved much more control and direction by Deliveroo – strict uniform requirements, a different attitude to substitutes and in other, significant respects" (CAC, 2017: 23).

As the contractual changes trickled down into effect via app updates, riders began to experience some of the flexibility their New Contract outlined (with regards to flexibility on uniforms, job rejections, and shift booking). However, riders like Ravi felt they were "still under the direct control of Deliveroo. We still worked *for* Deliveroo, as part of their business, not working for ourselves as part of our own business" (interview, 2019). Critically, whilst substitution was contractually possible, it still remained impossible to practice. This created an odd sense of victory and defeat for the union, as some fringe benefits had been won, but the primary issue

still remained. The proceedings had forced a change, but not the one that was hoped for.

7.5.4 Post Litigation Trajectories

The unintended impacts of the IWGB's case at the CAC resonate with Dubal's (2017b: 740) research that follows the "surprisingly grim…post litigation stories" as "workers' economic lives were… made more precarious than before the lawsuits". Here, businesses use court decisions as "a roadmap, drawing on their legal and business acumen to alter their business model so that workers looked even less like employees under the established case law" (ibid: 747). For Deliveroo riders, changes made in the run-up to, and aftermath of, the CAC case made their work radically flexible in ways that benefitted some and harmed others. For example, the newer 'flexible' shift booking meant riders could not rely on regular shifts every week and often ended-up with no work at all. The reduction of significance of the zone as organisational unit eroded community bonds and support networks, and the change in payment system (from fixed fee to variable distance-based fees) meant riders were unable to even estimate what they might typically expect to earn for a shift. This was beneficial for some part-time riders, whilst throwing those full-time riders with regular hours into deeper precarity and uncertainty. Meanwhile, riders were still unable to negotiate their pay or pragmatically appoint a substitute as their self-employment rights should allow. Whilst these changes impacted riders unevenly, they all benefitted the platform, leaving Deliveroo more flexible to onboard riders, move them around to meet localised demand, and decrease pay.

The reduction in significance of the zone as organising unit has coincided with waves of over-recruitment that have been disastrous for all riders. Pay analysis from the IWGB and The Bureau (Mellino et al, 2021) has found rider pay to be decreasing over time. Meanwhile, during my time at the Union I had met Deliveroo riders that had travelled from as far away as Nottingham by train in search of greater weekend

earnings in London. Without anywhere to stay, some slept rough on London's streets for the duration of the weekend.

This real term decline in conditions – particularly for those most reliant and therefore vulnerable – in platform work provide "lessons on the structural and political power of capital to evade enforcement of employee status [and] also illustrate how dependence on misclassification litigation in the gig economy may exacerbate worker precarity" (Dubal, 2017: 747). The reality is, then, that employment classifications are not discrete or definite categories in practice, but represent a sliding scale of shades of grey. Because classification battles are fought in the courtroom, platforms are better placed – thanks to their enormous advantages in finance and legal expertise – to win in these legal spaces. Whilst litigation emerges from the lived experiences of work on the street, misclassification litigation must be accompanied by street action and policy interventions to succeed. Moreover, even successful examples of court action, such as the re-classification of Uber drivers as 'workers' rather than self-employed (Supreme Court, 2021), require this engagement with other sites of resistance. In that specific case, for example, Uber have pushed against the Court's ruling to provide minimum wage for the entire time a driver is logged-on, and is only guaranteeing minimum wage for when drivers are "on trip", leaving their waiting time still unremunerated. Unions and workers are addressing this through street action and policy intervention, whilst yet another long and expensive legal case is getting underway.

7.6 Site IV: The Polity: Policy and resistance

The fourth site of resistance - 'The Polity' - relates to the spaces where British policy is determined. Unions have identified policy debates as a key element of comprehensive strategies to influence platform work. Policy debates form part of a top-down legal approach to platform work through the state's imposition of limits upon platform company behaviour. There are two key policy debates playing out simultaneously concerning the gig economy. The first concerns the efficacy of existing policies and considers new ones (such as the structure of 'worker',

'contractor' and 'dependent contractor' statuses in *The Taylor Review, 2017*). The second concerns the enforcement (or lack thereof) of new and existing policies.

This section begins with a brief discussion of policy debates relating to the gig economy, situating policy involvement as a direct form of resistance with which workers can engage. It will then discuss two specific examples from my research at the IWGB where I encountered the *Taylor Review of Modern Working Practices* (Taylor, 2017) and Frank Field's *Delivering Justice* (Field & Forsey, 2018) and *Legalising the Gig Economy* (Field & Forsey, 2019) reports. These instances highlight how policy circles represent a contested battle ground in which unions and platforms fight for the attention of MPs and bureaucrats in the hope of eliciting change. Furthermore, it illustrates how these corridors of power are not unbiased spaces of equal access as platform companies wield their connections to policy makers to influence debate.

7.6.1 Contextualising policy debates as a contested battleground

Court cases operate within legal spaces that can be shaped through policy-making and law creation. There have been a succession of cases that have challenged the 'misclassification' of gig workers throughout Europe and the US since 2016. For example, in both the Netherlands and Spain Deliveroo riders have been re-classified as employees, receiving the full protections that brings. Meanwhile in New York, Uber and Lyft drivers have won minimum wage guarantees that put an extra $9,000 per year into drivers' pockets (Kelly, 2018). However, these kinds of victories often engender a countervailing response from platform companies. In California, for instance, Assembly Bill 5 (AB5) changed the law to assume all workers were employees unless their employers could prove otherwise, thus shifting the burden of evidence from worker to company in mis-classification disputes. However, this was overturned by an amendment supported by Republican politicians and platform companies. This amendment, Proposition 22 (or 'Prop 22'), called for platform workers to be exempt from these new labour protections. Prop 22 was the most

expensive ballot measure in Californian history, with $224million spent in contributions (Ballotpedia, n.d.). $19millon was given by labour advocacy groups to the 'No' campaign; $205million was contributed to the 'Yes' campaign. The biggest donors - Uber ($59million), DoorDash ($52million), Lyft ($49million), and Instacart ($23million) – are all platform companies that stood to profit millions of dollars if Prop 22 passed. Elsewhere, platforms used their customer facing apps to appeal directly to Californians to vote 'Yes on 22'. This highlights the way policy debates can become David and Goliath esque battle grounds as platforms wield their financial and technical powers to influence policy decisions that could benefit workers.

In the UK, Uber has similarly leveraged its power to intervene in policy decisions. For example, in response to Sadiq Khan's threat to strip Uber of their licence in London the company notified customers in-app and started the #SaveYourUber campaign and petition which gathered nearly 1 million signatures. Elsewhere, in reference to a delivery platform company I refrain from naming here, I have been given access to an undercover recording of a conversation taken at a corporate event between a participant and a company executive. In response to being asked if they spent significant money on UK lobbying, she replied "Yes, we have to look at the long run" and indicated that the company is "working" on changing the law by "talking to politicians right now [2018] in the countries we are operating in." With specific reference to France, she notes that "we have strong connections with quite powerful people." In the UK, platform companies have been guests of honour at various Conservative Party Conference seminars on the future of work (Hughes, 2019). Lobbying and other socio-political networks are not balanced spaces for reasoned discussion but uneven battlegrounds where platform corporations wield significant power in comparison to workers and the organisations attempting to represent them.

7.6.2 The Taylor Review

This proximity between platforms and policy debates resonates with my experiences of the UK's *Good Work: Taylor Review of Modern Work Practices* (2017). It was billed to be one of the most significant investigations of work, policy and regulation in the UK labour market since the 1996 Employment Rights Act. However, the Review refused to directly consult the IWGB, who at the time were the biggest gig economy union in the UK. It then came under scrutiny when the IWGB revealed that Greg Marsh, a member of the review panel, was an angel investor and shareholder in Deliveroo, a clear conflict of interest (Ram, 2017). Following the exposé, the government revealed that they were made aware of the situation, but saw no issue as Marsh was attempting to sell his shares. In this sense, the financial asymmetries of gig work are refracted and re-amplified, as the same financiers who invest in platforms are given a seat at the table that decides how their workers should be treated.

Unsurprisingly, the review lacked the recommendations the IWGB desperately wanted to see (see IWGB, 2017). Considering the context of its creation, even beyond Marsh's links to corporate interest, is illuminating. The review was commissioned by a Conservative government; specifically a prime-minister who in her previous role as home-secretary spear-headed both austerity legislation and was a principle architect of the Hostile Environment (for immigration). This is particularly relevant when you consider the significant number of migrant workers currently engaged in the UK gig economy. Furthermore, it collided with the Government's Industrial Strategy White Paper (2017), that listed a key aim as the reduction of unemployment. The gig economy achieves this by giving the unemployed access to self-employment, despite the conditions being poor and often providing poverty wages. Ultimately, political change may be a necessary part of lasting reform to the gig economy, as unions need to be given the space to represent their members and intervene in policy discussions at the highest level to balance the scales against the back-door entry Whitehall platforms enjoy.

7.6.3 The Field & Forsey Reports

Unlike the Taylor Review, Field & Forsey's (2018) *Delivering Justice?* and (2019) *Legalising the Gig Economy* reports for the Work and Pensions Committee took submissions from workers in addition to official submissions from unions, academics, and platform companies. As such, the findings are more clearly geared toward the kind of changes gig workers in the UK are advocating for. This integration of the workers in the review process led to policy suggestions that directly addressed their needs and took into broader consideration the challenges workers face in the gig economy.

Fields' (2019) *Legalising the Gig Economy* investigated how the legal system could be reformed to prevent platforms from exploiting it so freely. The report called for changes similar to AB5, in which it would be assumed workers are Limb b Workers by default rather than independent contractors. Secondly, it encouraged critical attention to the "dubious and notional 'substitution clause' in contracts… as a 'get out of jail free card' for companies" (2019: 11) (noted as a determining factor in the CAC case explored above). Another lead policy recommendation was to speed-up the court appeal process to ensure that any issues of misclassification were amended in a reasonable time. This would prevent cases such as Aslam, Farrar & Others v Uber (2016-21) taking five years to work their way through the court appeals process whilst the platform operated as normal in the interim. When considering the 500% staff turnover rate, this timescale fails many workers who churn through the industry in the meanwhile. Returning to the undercover transcript of a platform executive from 2018, they outline the way the court system allows companies to "keep everything at bay" in the short run by going to appeal after appeal, whilst "working on" politicians in the long run to create a favourable policy environment through lobbying pressure. The precision with which these reports' recommendations target the structural issues gig workers face illustrates the benefits of worker representation and inclusion in policy debates. Sadly, the Fields and Forsey reports (2018; 2019) failed to gain traction in legislative and policy environments.

This is further encumbered by the platform economy's growing embeddedness in the state, as platform investor networks become wrapped-up in conflicts of interest. In 2018 Judge Emma Arbuthnot had to step aside from her role presiding over an Uber licensing judgement after it was revealed that her husband – a Conservative Peer – held lucrative consultancy contracts with one of Uber's largest investors. The case was only handed over following an exposé in *The Observer* (Doward, 2018). Elsewhere, the process is happening in reverse, as key political strategists and influencers from the past decade are entering the revolving door between politics and business. Nick Hargrave, for example, worked as a speechwriter at 10 Downing Street, head of 'opposition research', and finally as a Special Advisor to 10 Downing Street from 2013-2017. In 2021 – immediately prior to their immanent IPO – he joined Deliveroo as their new Director of Public Affairs, bringing with him a career's worth of insight into the British political system and the political landscape firms like Deliveroo can expect to encounter. His is just one of many appointments gig economy firms have made to high-ranking civil servants or others with knowledge and experience of successfully navigating the policy realm (another instance being Rob Oxley, who took a role as a director at Deliveroo after leaving his post as Head of Media at Vote Leave. He left his role at Deliveroo to become Boris Johnson's Press Secretary – famously hiding him in a fridge on national television to avoid an interview with *Good Morning Britain*).

7.6.4 Covid-19 and the contemporary policy arena

The ongoing COVID crisis has thrust the gig-economy centre stage. Alongside NHS staff, teachers, cleaners and refuse workers, the gig economy key-worker has been critical in maintaining people's access to food and transport. Deliveroo swelled its numbers of riders and engaged widely in PR campaigns to raise the company's profile ahead of a 2021 IPO (Deliveroo, 2020). In the process, it took on thousands of unemployed and newly redundant people, lifting them away from government

responsibility through precarious under-employment in lieu of sustainable social benefits for the unemployed.

Given the spectre of a jobless recovery (specifically, a recovery predicated on large-scale recruitment in low-paid logistics and warehousing jobs, with soaring profits for online-first retailers: Bank of England, 2021), it may be optimistic to hope for political appetites to prioritise broad ranging enforcement of gig workers' rights moving forward. This illustrates the scale of the challenge workers and trade unions face if they wish to instigate change in the policy arena. The reality is that platform companies' offices are full of Whitehall alumni, who give clear access to political networks and experience of the political landscape through the expertise they have acquired (Hughes, 2019). They may promote a young, diverse, hip corporate image to the public, using their workforce as part of their branding (Gregory, 2021), but work with a very different demographic of politicians and bureaucrats in executive roles to consolidate powerful networks.

Whilst policy interventions may seem crucial for organised labour to impart change on platforms from above, they cannot merely emerge into existence in isolation. The policy arena is as contested a battlefield as anywhere else and must be fought for if organised labour wishes to make an impact. Where policy interventions have been successful, they have been partnered with widespread union and informal labour organising in the street, a receptive media that is willing and able to report on workers' stories, and synchronised with court action, as seen in Spain, Italy and the Netherlands. When these four sites come together – the app, the street, the court, and 'the polity' – large-scale change is possible. The conclusion of this chapter will explore this synthesis of approaches.

7.7 Conclusion – Synthesising sites and approaches

In conclusion, it is clear that there are a series of structural challenges that riders and organised labour must face if they are to mount a successful and

sustainable resistance to exploitation in the food delivery sector of the gig economy. These not only include the three asymmetrical relations of their work (regarding bargaining, financial, and informational power) but reflect the platforms companies' attempts to normalise these as part of a broader 'business ontology' (Fisher, 2009) or through objectifying and naturalising their technologies at work. In reality, none of this is in any way natural or a default for tech firms. Instead, it is based on the choices platforms make and their relationship with regulators and venture capitalists. Furthermore, any resistance attempts are complicated by the significant staff turnover these companies experience, making it difficult to forge workplace communities where riders know each other and engage in social solidarity. Whilst small pockets of community exist, many riders I spoke to felt they were in a workplace of strangers.

Gamification may offer an essential pre-condition of platform resistance. However, the degree to which it can be considered resistance itself is up for debate and depends upon the individual context in which it is applied. If applicable at scale, gamification strategies such as dual apping could become effective as a means of resistance. However, the scale needed to do so is currently beyond the reach of any attempts made to date. There have also been distinct phases of street organising which have been successful in either winning small changes or at least a stay of execution for newly imposed rules laid down by the platform. These have precipitated organisational change which in turn has required workers and unions to re-assess and evolve their strategies for the workplace. These have been made more challenging by continually worsening platform conditions and the subsequent creation of precarity so strong that workers now feel unable to strike. Workers being unable to afford to take the time off to strike and/or without fear of losing their job is also connected to structural factors present in the UK labour market and welfare space. Migrants, who often do the most work for Deliveroo and other platforms are excluded from protections and welfare provision, and are in fear of raising public grievances due to the hostile environment. Court cases have been shown to generate change even when unsuccessful (i.e. officially they have been 'lost', but they have forced a change, as with the Deliveroo case at the CAC and the contract changes that

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immediately preceded it). However, when this happens the changes that take place occur outside of organised labour's sphere of influence. The results can be unexpected or deleterious, acting as a catalyst for the accelerated deterioration of working conditions. Policy changes, also enacted from above, could be capable of change; however, as yet they have been unsuccessful. Organised labour is able to short-circuit this by winning employment law cases in the courts (as with Uber at the Supreme Court, 2021), but these are slow and uncertain. Whilst platforms are able to inhabit the corridors of power through talent acquisition and lobbying, the workers are literally confined to the loading bays and delivery offices of power as they shuttle their lunch to them.

Synthesising approaches from all sites, bringing them to bear simultaneously on platforms and regulators may offer new avenues for success. However, ultimately, all of this organising and resistance stem from the ongoing relationship between the workers and the organisation; and the ways in which sociomaterial conditions (of technologies and the urban workplace) mediate and inform that relationship. It is out of this intersection that resistances need to continue being carved out. If successful, riders and the state together can work to curtail the excessive dominance platforms currently seek to exert in the city-platform-rider triad. This in turn may reshape how the platform and city are organised as the place of work in the gig economy continues to dynamically shift over time.

By bringing victories together across various sites and scales in a small timeframe, another world may be possible. A world where platform work is equitable and fair for all of its workers. This world needs to be fought for before it can be won; just like every other improvement in working conditions, it will not be given benevolently. Whilst it seems that platform resistance is increasing over time, it is important to remember that this is a long process and we are likely still only at its beginnings if platform company structures continue to work their way into otherwise 'traditional' workplaces and industry sectors in the future of work.

Chapter 8 – TERMINATION: CONCLUSIONS

'It's a shit job, but it's the best shit job I've ever had' Tim (Interview, December 2018)

8.1 Contributions

This thesis has made contributions across a number of academic fields by recognising and researching the new modes of platform enabled delivery work in London's gig economy. It has sought to curate novel disciplinary, theoretical and methodological contexts through which to engage, critique, and resist the forms of labour that this work involves. Specifically, I have enriched accounts of platform delivery work by entwining covert ethnographies of the gig economy workplace and overt ethnographies of the trade-union responsible for organising labour in the sector. This empirical contribution has relied upon the construction of a distinctive lens through which to view the phenomenon of platform delivery, bringing sociomateriality from organisation studies into concert with interface envelope theories from work on digital geographies and media studies, and rhythmanalysis from critical theory. This lens has allowed me to explore the platforms' interfaces in a holistic manner, uncovering the way they wrap workers up in the interface, in addition to treading a careful boundary between post-phenomenological perspectives of the interface as an assemblage of inorganically organised objects and phenomenological understandings of how this is internalised and understood by workers in their day-to-day working lives. In so doing, the thesis precipitated conceptualisations of organisational space that simultaneously account for the complexities of the urban environment, the agency of the skilled body and the platforms that seek to create, manage and maintain delivery markets in the city.

Specifically, it can be argued that this thesis has made six novel contributions to knowledge of the gig economy. They will be explored in turn below.

Firstly, as noted above, the thesis has made the case for a tripartite conceptual approach to gig work, bringing three otherwise disparate and discrete conceptual frameworks to bear on each other and the phenomenon of the work. These are: sociomateriality, theorisations of the interface envelope, and rhythmanalysis. Taken together, they provide a fertile cross-disciplinary intellectual space for continued research into the gig economy. In this research they have led to the formulation of a novel understanding of the 'gig work place' as a spatial triad composed of city-platform-rider. I believe this framework provides scholarship with an avenue for investigating complex platformised workplaces that play-out across a digitally enmeshed urban terrain and facilitates exploring power dynamics within these.

Secondly, the thesis applies already existing conceptual frameworks to a new empirical phenomenon, gig economy work. To my knowledge this is the first work to advocate for, and actually engage in, the application of rhythmanalysis and sociomateriality to cycle delivery in the gig economy. This has provided the foundation for further novel contributions to knowledge, such as the application of concepts previously developed in light of traditional messenger work (such as Kidder's (2011) micro- and macro-routing) to the gig economy, nuancing discourses surrounding digital tools of work and their role in augmenting skilled human labour.

Thirdly, the thesis has sought to catalyse an interrogation of skill in the gig economy, destabilising previously held assumptions about cycle-delivery gig work being somehow 'low-skilled' or 'un-skilled'. By centring the experience of the rider in this debate and recording my own skill development as a gig worker, I have shown that despite pervading narratives concerning a process of de-skilling, the reality is that gig economy riders do develop skills at work. However, the presence and role of the platform in organisational spaces and processes shapes the contours of this skill development in practice. Additionally, this thesis makes a novel argument for skill in

the gig delivery workplace to be understood as an ongoing cycle of workplace learning that is deployed improvisationally as the city and platform play out in unknowable ways in front of the worker.

Fourthly, this thesis applies 'algorhythmic' approaches to gig work. This has extended the concept to include analysis of workers whose work is managed by algorithms, rather than those whose work is to manage algorithms (Borch et al, 2015). In turn, this opens up debate to the significance of perspective, positionality and agency with reference to algorithmic management, and continues to build a case for the development of theorising that acknowledges the relationship between algorithms and rhythms.

Fifth, this research has recorded and analysed a long-running ethnography of various resistance practices in the gig economy, offering unprecedented access and analysis of trade-union activities and strategies. This has precipitated the identification of four key sites of resistance and their associated practices and supported nuanced perspectives on gamification in the gig economy as a pre-condition for organised resistance. It has also provided an account of the 2016 strikes against Deliveroo, and the way organised labour have re-calibrated their strategies in light of organisational changes to the labour process.

Finally, this research was made possible through the formulation of a novel ethical-legal approach to accessing the gig economy as a worker. This involved harnessing the bogus self-employment status applied to gig workers as an avenue for entry into the field. More detail on this is explored in direct response to research objective 5 below.

This broad overview has outlined some of the contributions made by the research and explored in the thesis. Now I turn to elaborating how these contributions have addressed the project's core research objectives.

8.2 Reviewing the Research Objectives

1. *To develop understandings of the labour process of gig economy cycle delivery and how riders come to understand this labour process within a complicated (techno-urban) organisational space so as to exert agency within it.*

On commencement of this research, I was presented with deep contradictions emerging in London's gig economy sector. On the one hand, platforms were claiming they offered free and flexible work (a narrative they continue to this day; Gregory, 2021) whilst on the other, platform workers were going on strike. I identified the labour process as a key site for investigation in an attempt to excavate these competing claims and open them up for analysis. What emerged was the understanding that riders were being enrolled into the creation of two forms of value, through their provision of a delivery service and the creation of data. It became clear that the labour process was structured in such a way as to grant some basic freedoms at work (around decisions regarding route selection, for example) whilst in other respects riders were totally unfree, coerced into the creation of data assets for the platform. This came as the result of platform company efforts to re-code the 'big-task' of picking-up and delivering packages into a series of smaller 'sub-tasks', punctuated by moments of data creation. Through the enrolment of the phone and body in the city and delivery marketplace, this labour process made riders into both delivery couriers and translators of the complex urban environment into a series of 0s and 1s that were useful to platform company objectives.

Ethnographic research showed that workers were aware of this. They had begun asking bigger questions about how their labour played a role in the production of value in loss-making gig economy firms, in addition to building smaller strategies to mitigate and exploit the striations imposed upon their labour process by sub-taskification. In light of the opacity of the algorithmic decision making processes that

managed their daily labour, workers inferred meanings and tailored their approach to appear more efficient to both human audiences in restaurants and algorithmic audiences through their behaviour 'in-app'. These included a process of ongoing self-disciplining in an effort to become more efficient, the transferral of personal financial risk into physical risk on the roads, and the continued performance of efficiency to their labour distribution algorithms even once all efficiency measures were met.

In sum it became clear that workers had a carefully nuanced understanding of their labour processes as they played out in a complex organisational space. They were able to comprehend how their labour weaved together various elements of urban and platform space to create a spatial triad: city-platform-rider. This sets the basis for understanding the places and practices of this type of gig work that could be built upon to explore in greater detail how riders come to be skilled at their jobs, which is the focus of the second research aim.

2. *To investigate the nature of skilled work in the gig economy in regards to both skill development and deployment at work and how this related to digital and urban practices and processes as they become enshrined in the performance of work.*

The first research objective set the stage upon which gig work was analysed. The second research objective attempted to deal directly with the performance of the work by workers. By first establishing the nature of the relationship between the body and the bike (i.e. the 'rider'), focus was already tuned to how this sociomaterial, human-machine assemblage plays out across urban space. Direct comparison of my first and final ethnographic field diary entries illustrated the gulf between perception and experience of the work that had developed over nine months of working in the field. This immediately destabilises and denaturalises conceptualisations of gig work as somehow low-skilled or unskilled, because the key catalyst for change between these accounts was the development of my own personal skill over time. It shows that as riders develop their technical abilities to manipulate the bike through an ever-shifting urban traffic puzzle, their lived cartographic knowledges of the city's streets and topographies, and their understandings of how the platform functions, they

become better riders. This in turn changes riders' relationship to the technologies of the work: for example, needing to look at the mobile phone less and focusing more on the road ahead. By the end of field work, the phone spent most of the time in my pocket where its navigational function was ignored and I could focus on getting the job done and performing a particular kind of efficiency to create data that would hopefully lead to the offer of more jobs and increased earnings on Mercury Meals and Iris Delivery.

'Algorhythms' were an important conceptual frame for unpacking this skill development by simultaneously bringing sociomateriality, interface envelope theories and rhythmanalysis to bear on the work. By extending algorhythmic research to account for workers whose labour is administered by algorithms, it presents a worker who is skilled, and locked into a continual process of learning that augments and enhances their skills over time. They are then able to apply this skill in a virtuosic, improvisational manner as they go about their work navigating the unknowable city and platform. Whilst the urban and technical elements of their work could never be totally knowable, workers did develop knowledges about their systems that became essential in strategising and performing resistance, the focus of the next research aim.

3. *To forge understandings of the sites, spaces and practices of resistance to gig economy cycle delivery work and how they have developed over time.*

Since 2016 there have been ongoing efforts to mount resistance within – and towards – the gig economy. This PhD research also began in 2016 and as such I have been able to follow resistance efforts towards platform mediated gig-work in London for their entire history. Paired with unprecedented access to the IWGB union who organise this workforce, investigations have been able to reach behind the scenes to explore the strategies and processes of resistance in addition to their practice. The IWGB's modus operandi is to attack on multiple fronts in their efforts to bring about much needed change in the sector, building strategy from the direct expression of worker experience among their membership. As such, the intimate knowledges of

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the work (explored in research objectives one and two) are central in the construction of effective resistance.

It became clear that there were four primary sites of resistance, each with a distinct set of resistance practices associated with them. One key finding here was that gamification is both a part of the way riders engage their work and caught up in practices of resistance. Whilst gamification appears to not represent far-reaching resistance – as self-employed riders game the system to get more work, they also fulfil the mission of the company they work for – this thesis argues gamification is not totally removed from resistance as gamifying behaviour was central in riders comprehending, denaturalising, and rupturing their work systems. Whilst not a form of resistance itself then, gamification was a vector for knowledge development that is essential in effective resistance.

These knowledges became manifest in street demonstrations that harness worker knowledge to mount effective resistance campaigns. The length of this study and its involvement in both the work and the Union has unearthed the way resistance elicits organisational change that goes on to inform future resistance strategies. This approach to pattern making behaviour and systems change – rather than a focus on individual events in isolation – is key in invigorating sustainable change in the future.

Similarly, courtroom battles show the significance of granular knowledge of the labour process and organisation systems in the construction of both legal arguments and approaches to unionisation (such as targeting a specific zone and/or specific locations within that, such as the zone centre for recruitment drives). The biography of an unsuccessful case sheds light on uncertain post-litigation trajectories that court decisions precipitate and the difficulties workers have in engaging these changes. Finally, investigation of 'the polity' constructs the policy arena as a site and battleground wherein workers have the least agency to intervene directly. However, when they are invited into these spaces, the details of the work they relay to policy makers can lead to specific recommendations that may help in the future.

In sum, the practices that take place in all four sites of resistance are intimately tied to both the conditions of gig economy work (research objective one) and the rich, skilful knowledge sets riders develop (research objective two). When brought together into organised collective resistance, these knowledges reverberate through the platform economy ecosystem – from the app, to the street, court and polity – where they become agents in forcing change and improving conditions.

4. *To build a conceptual framework capable of engaging with the complexity and plurality of gig economy work and the spaces in which it takes place.*

This research is committed to the interdisciplinary contexts from which it emerged. My training as a cultural geographer met with a spatial turn in organisational studies, creating fertile and exciting grounds for approaching work in the gig economy. These two disciplinary perspectives, supplemented by scholarship from sociology and media studies, brought discussions of management, materiality, time and space together in myriad productive ways. Eventually, this coalesced into a lens of analysis that modified sociomateriality (Orlikowski & Scott, 2008) with Ash's (2016) theoretical work on interface envelopes and brought it into constellation with Lefebvre's (2004) rhythmanalysis. The braiding together of these frames built an interdisciplinary foundation for the research and became the key to unlocking the complicated world of life spent labouring at the interface.

Rather than acting individually, these bodies of work modify each other in their combined approach, meaning the boundaries where each set of theory ended and another began were not always clear. Instead of restricting the research, this transgressive approach to disciplinary silos in fact liberated me to observe the field as I encountered it. Rather than forming a box that captured and restricted my analysis they were the platform upon which other analytical lenses could be applied.

I was delighted that they resonated with the way workers discussed and perceived their work in what Csíkszentmihalyi (1975) terms 'native categories'. Riders often spoke of the 'rhythms' of their work – in reference to market rhythms,

urban rhythms and bodily rhythms. Similarly, riders spoke of how they thought the platforms they worked for designed their apps, the desired effects, and how they actually worked on a day-to-day basis, resonating with Orlikowski's (2007: 1444) discussion of how technologies are "designed, configured and engaged in practice." In addition to reflecting worker insights in the field, these conceptual frames also informed my methodological approaches, explored in the fifth research objective below.

5. *To tailor a set of methodological approaches that can ethically investigate the working lives of riders in the gig economy.*

Gig economy work presents a series of very difficult challenges to researchers attempting to investigate it. The organisational processes that the researched platforms deployed actively seek to atomise workers, distributing and circulating them around urban space, and creating a dispersed workforce that is seeking to continually be on the move. It was only by working in the gig economy myself that I could locate the moments of stasis in the day and the locations of community gathering in the digital spaces of worker group chats and on the physical spaces of street corners. The workers that reside in these spaces also present methodological challenges. In London, they were diverse and often self-organised into cultural and linguistic communities that were difficult to enter. The broader dynamics of the British state combined with a disturbing compliance between platform companies and the UK Border Agency re-enforce worker precarity. In response, workers were suspicious of outsiders, particularly of outsiders trying to ask questions, and were frequently unattracted to the idea of going on the record about their experiences for fear of reprisal from bosses or the state.

As researchers, we must ask ourselves to strike a balance between the immanent need for vulnerable people's stories to be told (in the hope of improving their conditions) and our respect for their desires for secrecy and to remain safe from forces that existentially threaten them. This balance bears out in silences in this thesis, particularly with regard to on the record interviews with migrants and

undocumented migrants. The ethical balance I struck was to keep them present on their own terms, listening to their thoughts, feelings and perceptions in the field when invited to do so, without recording any fine details. This allowed me to amplify the sentiment of the message they shared whilst not tying this to names, locations and other empirics they felt might put them at risk. Whilst a lack of concrete empirics often meant I was restricted in making claims regarding the intersectional experience of the work within this thesis, I have sought to action this wherever possible. For example, the PhD research process beyond the thesis document included a commitment to voicing the need for change in the gig economy, playing an active role in fighting for that change during my ethnography of the IWGB, and celebrating the amazing skill sets these workers develop and deploy in their working lives.

More broadly, research methodologies incorporated elements of the conceptual frames outlined in response to research objective four. An awareness of sociomateriality and interface envelopes informed the questions I asked of myself, my participants, and the Mercury and Iris applications throughout. They additionally shaped the way I perceived my mobile phone and its role as an active interlocutor in the research process – leading to novel discussions of field*site* and field*work*. These discussions also stemmed from a commitment to rhythmanalytical approaches that encouraged me to find "my balcony" from which to view the field and establish my own inside/outside/between relationship to the work as a rider-researcher. This was all facilitated by an ethical-legal positioning of the self in relation to access arrangements in the field that allowed this research to go ahead (see also Badger & Woodcock, 2019). To my knowledge I am the first to have done this in this context and have shared my approach with other PhD students and researchers that have in turn utilised it to facilitate their own access arrangements to the study of gig work.

8.3 Meta rhythms of venture capital and the gig economy

This thesis has explored the nature of contemporary gig economy work with reference to various scales of rhythm. These include the tiny rhythms of heartbeats in the bodies of riders and instant decision making in the algorithmic mind of the

platform. It includes the daily culinary rhythms that become manifest as demand on phone screens and the traffic rhythms riders compete with as they move across town. It includes the weekly payday cycles of workers and the monthly payday cycles of their salaried customers. It includes seasonal cycles that bring rain and sunshine and correspondingly transform the availability and strength of the labour market. However there is a larger 'meta-rhythm' (van Doorn & Badger, 2020) whose impact has been left implicit throughout the analysis. It is the silent hand in determining the nature of riders' work. This is the meta-rhythm of the financial markets and their integration into the platform company model. By 'following the money' we are afforded an opportunity to understand some of the pervading logics at the heart of the platform economy that, in turn, explain why so many platform companies are following the same patterns of declining conditions over time.

Returning to Langley and Leyshon (2017: 24), platform companies "perform" the logics of their venture capital backers to attract investment; setting up with very little risk or collateral on their books (in terms of assets, employees, etc.) and developing a product that can be scaled rapidly to achieve domination. These venture funds are organised into ten-year long portfolios that spread risk to follow the 2:6:2 rule:

> "Two investments will be losses, six will break-even, and only two will realise returns, but these 'home runs' will be of such an order of magnitude that the overall portfolio will generate returns that outperform equity markets over the same period" (ibid: 24).

By the end of the ten-year period the funds expect to liquidate their assets and achieve a positive return on investment. This ten-year period is the temporal window in which those two home runs must achieve massive increases in their share price. By generating large aggregate returns on 'home runs', rather than smaller returns on conservative investments, VCs embed platforms with a tendency towards monopolisation (Liu, 2020). If a platform wants to stand any chance of getting funded, they need to be able to demonstrate that they are capable of hitting that

'home-run'. Here, the scalability and adaptability of their 'disruptive' offerings across global markets is key. Companies receive enormous funding injections of liquid capital that allow them to invest exorbitant amounts in building monopolistic empires and kill off the competition. They then harness their position to charge progressively higher rates to clients and consumers whilst offering less in return to workers as they skim off a profit to repay their early investors and shareholders.

The 10-year lifespan of many of these investment funds were only half way through when this PhD research began. Those investment funds, just like this thesis, are drawing toward their end in 2021. As they conclude, the behaviour of platforms is changing accordingly as they approach their next financial horizons in a process that will restart in a new cycle with the next wave of 'disruptive' firms (such as Getir or Gorrilas, each with new organisational processes and offerings built on the lessons learned from the previous wave of platform companies like Mercury and Iris). For example, 2021 saw the high-profile Initial Public Offering (IPO) of Deliveroo on the London Stock Exchange. It came as the Covid-19 pandemic had thrust the firm centre stage and finally began to turn their books towards profitability. Their IPO lists that their unit economics are improving over time (thus demonstrating profitability potential) and that "improving the operational efficiency of our logistics network" (2021: 62) is central to that mission. However, as Chapter 5 has shown, riders experience efficiency directives in myriad and often damaging ways, internalising the need to performance manage against continually declining wages (see also, Mellino et al, 2021 for data on declining wages at Deliveroo).

Furthermore, Deliveroo (2021: 61) stated that these efficiencies are built on:

"World-leading technology [that] underpins all we do… We have optimised our logistics through a number of models and algorithms based on machine learning. It is only through years of data collection that we have been able to develop and fine-tune our tech-driven logistics… As our technology improves over time, it reinforces the Deliveroo flywheel. Through machine learning algorithms, our technology builds an ever-expanding understanding of the

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nuances of delivering in each neighbourhood, allowing us to achieve incremental gains in efficiency and quality of service as we grow. As a result, over time we see improved efficiency… and better unit economics for Deliveroo. This improved service brings more partners and consumers to the platform, increases network density and volume and drives further efficiency."

Here, 'data collection' serves as a euphemistic cover-all for the data generation that riders are engaging as part of their work. It is a fairly typical of platform economy IPO documents and represents the role technology plays in the process, particularly the ways in which data becomes assetised in performing the company's future profitability to potential investors. By diversifying their offering, Deliveroo hope "to achieve our goal of going after each of the 21 weekly meal occasions" (ibid: 75).

Taking all of this together, it is no coincidence that riders have become critical nodes on a data generation network, orchestrated by digital incursions into the labour process. It is also no surprise that a platform's largest outgoings – rider wages – are decreasing over time as they move toward the financial horizon event of going to public market (listing on a stock exchange) and seeking further investment or an acquisition or merger bid. This is the reality in which CEOs work. The meta-rhythms of the organisation are punctuated by financial moments, each in turn growing in scale as the company grows – from early angel investments, through to limited investments and finally a public stock offering that may value the company at billions of dollars.

For founders, executive staff, early employees and early investors, achieving a high valuation with each round of investment builds personal wealth in stock holdings. For example, Stothard (2021: n.p.) reported that early investors in Deliveroo stood to gain a 60,000% return on investment if the markets responded well to the IPO. It is clear that investors, founders, executives (and any employee with shares or stock options) has a vested interest in the success of the company in

achieving a high share price. Essential to this share price is the appearance of profitability, and essential to that profitability is the continued improvement of unit economics. I assert with van Doorn (2020) that this is why wage depression in gig economy firms has been so strong in recent years. Investors and executives are trying to demonstrate value and profitability to the financial markets ahead of debut (IPO) on the stock exchange, and the simplest way of doing so is to decrease rider wages.

In this respect, the gig economy is a novel financial product, supplying investors and funds with a new avenue for growth post-2008. Meanwhile, the rhythms of these financial worlds trickle down to the worker on the street. We are now moving into the second phase of the gig-economy's growth and invasion into our economies (Gregory & Sadowski, 2021). The days of wild spending and growth are over and it appears that companies are trying to consolidate their markets and stabilise revenues in the uncertain future the post-pandemic world will bring. The big financial rhythms of the next ten years will undoubtedly trickle down to smaller rhythms workers experience on the street, and so should be carefully considered when investigating the gig economy in the future.

8.4 Limitations and Future Work

Despite these novel contributions, like any research, this thesis is bound by its limitations. I have endeavoured to make myself aware of these where possible. They are explored below alongside suggestions for future avenues of research. It is essential that this work is not read as an attempt at establishing *the* authority on gig economy delivery work in London. Instead, it joins a lively and open debate that explores the plurality of experiences and the ways in which various intersectionalities shape the experience of work for different workers.

This research relies on a small number of interviewees, who were all in some way connected to the IWGB trade-union who were organising workers in the sector. Whilst this account is tempered by my discussions and observations as part of my autoethnography, the formal interviews are thus myopic in presenting a group of

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workers who had already self-selected into active political engagement or were at least already dissatisfied with the way Mercury Meals and Iris Delivery were operating. On the road, most others that I spoke to were also dissatisfied, even if they were not a part of the union. However, they were generally unwilling to speak formally at interview for a range of reasons such as being too busy or needing to work extra-long hours to earn enough to survive. If I am able to continue future research I will make sure there is a budget included to remunerate these workers for their time and hopefully liberate them to partake in interviews without suffering a loss in pay.

In part because of the interview sample size, this thesis is not fully representative of the various intersectional communities that undertake this work. Whilst my small interviewee cohort had representation from women in the workforce and people of colour, I did not manage to reach into the migrant networks of workers upon whom much of the delivery market relies. Whilst I had a diverse group of participants, only three of them were non-white workers, and as such this likely underrepresents the BAME workforce. This has sadly created silences in the work and subsequent analysis. However, it is worthy of note that this research did not occur in a vacuum and is influenced by the migrant experiences I found myself a part of – and witness to – during my time at the IWGB or whilst working on the streets of London. Often migrant workers would be happy to speak to me off-the-record but were deeply cautious of going on the record or having conversations recorded for fear of their own safety and their continued employment at Mercury Meals and Iris Delivery. It is precisely this precarity that makes them such an important group of workers for future study. Their stories and narrative accounts – given to me in restaurants and at traffic lights or hang-out spots – influenced the way I saw the work and diversified my perspective, despite their silence on the record.

Elsewhere, whilst organising LatinX migrant cleaners as part of my ethnographic research at the IWGB, I saw first-hand the ways in which intersectional precarities of being a migrant impact not only working lives but other areas of life too. For example, whilst speaking to workers in the Union offices, I frequently learned

of the racial abuse workers suffered from the public and from superiors, in addition to the strains of living without recourse to welfare and the impact of predatory landlords that took advantage of their situation. I also caught glimpses of the disregard the British state shows migrant workers, often being caught at protests between armed police officers and terrified yet courageous migrant workers demonstrating for their rights. This was incredibly scary, and although I was able to walk away from this experience back to my researching life as an able-bodied, cis-het white man, it provided a glimpse into other people's lives I will never forget. Thus, whilst there are gaps in the record, my broader experiences have hopefully informed my position to make this account at least sympathetic and aware of the structural differences of how work is experienced at the intersection of multiple factors, even if I have been unable to directly research and publish on the matter at present. I hope to begin addressing this gap in future research work.

With the exception of some interview material in Brighton, this study also focuses explicitly and solely on the London context. London, just like every other city in the UK, has its own distinct flavour and dynamics, both topographical and cultural, that filter down into the lived experience of work. What this research has shown is that place matters when it comes to working in the platform economy and, as such, I encourage future investigations to study other cities and rural locations or work comparatively where possible. The initial comparisons with Brighton exemplify this difference and identify it as a key avenue for future work.

With hindsight, I would also have liked to have discussed at greater length a comparison of the two platforms I researched in this work. In practice, the expositionary details needed to introduce the platforms and explore the minute, yet significant, differences in approach were limited by restrictions on length for this thesis. I have attempted to address this elsewhere, with a direct comparison in Badger (2021) between Mercury Meals and Iris Delivery. However, this only begins to scratch the surface and I will seek to continue publishing this comparative analysis as part of a post-thesis publication strategy.

Looking ahead, I am actively seeking to engage in research that directly addresses the limitations of this study. At present I have two active applications to UKRI funding schemes to carry out further investigations. The first focuses on the lives of BAME and migrant workers in the gig economy in various UK cities. The second proposes a nationwide study of women's experiences of working in various sectors of the gig economy (including food delivery, cloudwork, cleaning and domestic work, care, etc.). Whilst the outcome of these funding bids is unknown, it shows my intentions and commitments moving forward to begin addressing core limitations of this thesis.

Finally, I am continuing desk research on the financial models and movements platforms are making in the gig economy and attempting to discover how these impact the daily experiences of work for riders. This includes early studies of the Deliveroo IPO in March 2021 that are not present in this thesis as they did not occur concurrently with active field research. This will continue to build on the patterns established in studies of venture capital, the rhythms of financial markets and the result for the worker who is on the receiving end of platform initiatives to increase profit and cut costs.

8.5 Postscript - Covid-19 and the future for platform delivery work

On the 26th of March, 2020 the UK was thrown into its first full lockdown as the COVID-19 pandemic ravaged its way through our communities. The research for this thesis had long since concluded, but it was impossible to ignore the crisis going on outside of my window as I sat to write (note: I occasionally went out to ride the streets, but I have not folded this into the analysis in this thesis). The roads and streets emptied, the office lights went off, and the busy hum of London's restaurant scene momentarily went quiet. Delivery workers who had for years toiled in near invisibility were cast centre stage as 'key workers' in keeping society running, alongside NHS nurses and doctors, refuse workers, teachers and supermarket staff. For the first time, gig economy food delivery platforms were 'essential businesses',

staffed by 'essential workers' who were thrown into the limelight, their urban mobility coming into sharp relief against the stasis many people found themselves experiencing. The roads were deathly quiet as microscopic virus particles rendered the materiality of the work conscious to workers, customers and platforms alike. Even at peak times I could weave across the entire four lanes of Commercial Road or Oxford Street. It is easy to forget just how scary that time was; that death felt imminently around the corner for so many and that gig workers were still going out every day, throwing their bodies into the risks the pandemic brought and moving around the city to keep us fed.

In the months since, these workers have sunk back to invisibility, once again becoming just small chorus members in the cast of our urban lives. Their conditions have continued to decline, despite the fact that their efforts led to profits being reported at major gig economy firms for the first time for major players such as Deliveroo. It is hard to know what the future holds for society at large and for the gig economy platforms like Iris Delivery and Mercury Meals that I investigated as part of this PhD. What is clear is that the pandemic has disrupted society on an unprecedented scale, driving humans into greater isolation, but also intensifying relationships, giving people time to pause and think about the conditions of those around them. More and more people have moved their grocery and culinary spending online, leading to a new wave of disruptive firms like Gorillas or Getir offering higher stable wages and basic workers' rights to prospective workers.

It is hard to tell if this will last. What is clear is that as customers, as workers and as citizens we may be able to shape the conditions under which gig workers toil. The future of work is not inevitable. However, platformised logics currently being developed in the gig economy will almost certainly become a tool in capital's armoury to drive disruption, instability and future profit-making opportunities into untouched industries. It is crucial we learn the lessons fought across the bodies of workers in this first wave of the gig economy, uplift their conditions, and with that, build a future of work that is sustainable for all.

Appendix:

Appendix A – Informed Consent and Information Sheets

ROYAL HOLLOWAY UNIVERSITY OF LONDON

Participant Information Sheet [for your records] – ▮▮▮▮▮▮

What is the aim of this research?

This research is part of a PhD being undertaken by Adam Badger (the researcher) into the ways in which digital technology is shaping contemporary work practice. It looks to develop understandings of the interactions between human and digital elements in the work process. The research aims to investigate:

- The ways in which humans and technology interact to create an experience of work as felt by you, the rider
- How technologies are challenging the way we think of the 'workplace' – as both digital and non-digital, and distributed across the city.
- How are people working with, and resisting against the technologies of the workplace?

What does participation in this research project involve?

Participation in this research project will involve:

- Taking part in interviews with Adam (the researcher) at a public place or café of our choosing, at a time to suit you.

How will my data be used?

Your data will become a part of the research into the ways in which digital technologies are impacting work. You will be asked if you consent to the use of your data in the research project (in the informed consent form), which will then be written-up into a thesis, with all data being anonymised to protect your identity.

Is it confidential?

All participants' involvement in this study will remain anonymous. Although Adam is working with both Riders and the IWGB Trade Union, he will not be passing information across both groups about anything related to the study and your involvement in it. In short, Adam will not disclose to the IWGB who is involved in the study, nor will he share any information regarding concerns or praise participants may have for the IWGB. The IWGB will not at any point be made aware of your identity, or your participation in the study. Finally, information will not be shared with Deliveroo.

How Secure is my Data?

All information will be kept securely, in line with the Data Protection Act 1998. All hand-written notes will be kept in locked storage to keep them safe, whilst all digital notes will be encrypted and password protected on a separate computer that will only remain in

Adam's home. This will assure the safety of the research, and these notes will not be made accessible to any third parties, or any other participants in the study.

Why am I being invited to participate in this research?

You are being invited to participate in this research as you are either:

i) Currently providing services as a Rider for Deliveroo or;
ii) Have recently provided services as a Rider for Deliveroo.

Deliveroo's use of technology in the workplace is something that is becoming typical of so-called 'gig-work', and your personal experiences of it as someone working alongside the platform may highlight the ways in which digital work is felt by Riders and gig-workers more generally.

Who is conducting this research and who is it for?

Adam Badger (PhD Candidate & Researcher) is the sole researcher of this project. Adam is based at Royal Holloway, University of London, and the PhD is Funded by the Leverhulme Trust Charity.

What happens now?

If you have expressed an interest in taking part in this research, then Adam will be in contact with you over the next few weeks to ask you some questions about yourself and your availability via telephone or email.

If you haven't expressed an interest in taking part, but would like to do so, please contact Adam Badger via email: Adam.Badger.2012@live.rhul.ac.uk.

What if I want to withdraw from the study?

You are free to leave the study at any point and withdraw from the data collection process. In order to withdraw, please feel free to contact Adam - via email, or in person, and this can be enacted immediately.

What if I have more questions?

If you have any more questions about the research project, or your participation in it, please contact Adam Badger via email: Adam.Badger.2012@live.rhul.ac.uk.

Appendix A.1 – Example Information Sheet for Mercury Meals Rider

Informed Consent Form: Participation in: Space, Freedom, and Control in the Digital Workplace' PhD Research

Please complete this form after you have listened to an explanation of the research and had a chance to read the attached information sheet. You will also receive a copy of this form and the information sheet for your records.

Project Title: **Space, Freedom, and Control in the Digital Workplace'**
Researcher: Mr. Adam Badger (email: adam.badger.2012@ live.rhul.ac.uk)

Thank you for your interest in taking part in this research. Before you agree to take part, the person organising the research must explain the project to you.

If you have any questions arising from the explanation given to you, or regarding anything on the attached information sheet, please ask the researcher before you decide whether to join in. You will be given a copy of this consent form and information sheet for your records.

If you wish to withdraw from the process at any point you are totally free to do so. Just notify Adam by email (given above) and this can be done immediately.

Participant's Statement

- I understand what this study involves.
- I understand that if I decide at any time that I no longer with to take part in this project I can notify the researcher and withdraw immediately.
- I understand that I do not need to give any personal information, and that any information I do give, will be treated as strictly confidential and handled in accordance with the provisions of the Data Protection Act 1998.
- I understand that the information I have submitted will be published as a report and in academic journal writing. Confidentiality and anonymity will be maintained and it will not be possible to identify me from any publications.
- I understand that no personal information will be shared with other participants in the study, and my participation will be kept entirely confidential.
- I understand that my identity will be kept confidential throughout the full research process, and that pseudonyms will be used in every stage of research, from note taking to final write-up to protect my identity.
- I agree that the research named above has been explained to me to my satisfaction and I agree to take part in the study

Signature: **Date:**

Appendix A.2 – Example Informed Consent Form

Participant Information Sheet [for your records] – IWGB

What is the aim of this research?
This research is part of a PhD being undertaken by Adam Badger (the researcher) into the ways in which digital technology (regarding Deliveroo) is shaping contemporary work practice and how Trade-Unions are responding to this. It looks to develop understandings of the interactions between human and digital elements in the work process. The research aims to investigate:

- The ways in which humans and technology interact to create an experience of work as felt by the rider
- The ways in which technologies of work are (or are not) informing trade-union activity in direct response and resistance.
- The ways in which work (and resistance of this work) is comprised of more-than-work factors, such as the legal, legislative, and contractual. And how these impact the way in which the IWGB unionises workers considering this.

What does this research project involve?
Participation in this research project will involve:
- Allowing Adam to volunteer in the Trade-Union as part of his ethnographic study.
- Taking part in interviews with Adam (the researcher) alongside his research.

How will the data be used?
The data will become a part of the research into the ways in which digital technologies are impacting work and union organising. You will be asked if you consent to the use of your data in the research project, which will then be written-up into a thesis, with all data being anonymised to protect your identity.

Is it confidential?
All participants' involvement in this study will remain anonymous. Although Adam is working with both Riders and the IWGB Trade Union, he will not be passing information in between the parties about anything related to the study and your involvement in it. In short, Adam will not be informing riders of IWGB matters unless required to as part of his ethnographic study, nor will he share the thoughts and opinions of the IWGB with anyone beyond the requirements of his voluntary work with them. Finally, information will not be shared with Deliveroo.

How Secure is my Data?

All information will be kept securely, in line with the Data Protection Act 1998. All hand-written notes will be kept in locked storage to keep them safe, whilst all digital notes will be encrypted and password protected on a separate computer that will only remain in Adam's home. This will assure the safety of the research, and these notes will not be made accessible to any third parties, or any other participants in the study.

Why am I being invited to participate in this research?
You are being invited to participate in this research as you are:
i) Working for/with the IWGB Trade-Union.

Deliveroo's use of technology in the workplace is something that is becoming typical of so-called 'gig-work' - and your personal experiences of union-organising and representation in light of this, is something that highlights the ways in which the technologies of the workplace are present in the modes of worker-organising and resistance at the Trade-Union scale. This is of importance, given the 'unorganisable' status many larger unions have given to gig-workers, and the successes the IWGB is enjoying in disproving this sentiment.

Who is conducting this research and who is it for?
Adam Badger (PhD Candidate) is the sole researcher of this project. Adam is based at Royal Holloway, University of London, and the PhD is Funded by the Leverhulme Trust Charity.

What happens now?
Once arrangements are finalised, then yourself and Adam will finalise access arrangements before he joins your work in supporting and organising as part of the Couriers and Logistics Branch of the Union (as a volunteer). Adam will be in contact with you over the next few weeks to ask you about your availability via telephone or email.

If you haven't expressed an interest in taking part, but would like to do so, please contact Adam Badger via email: Adam.Badger.2012@live.rhul.ac.uk.

What if I want to withdraw from the study?
You are free to leave the study (as a union, or as an individual) at any point and withdraw from the data collection process. In order to withdraw, please feel free to contact Adam - via email, or in person, and this can be enacted immediately.

What if I have more questions?
If you have any more questions about the research project, or participation in it, please contact Adam Badger via email: Adam.Badger.2012@live.rhul.ac.uk.

Appendix A.3 – Example Information Sheet for IWGB.

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