

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

**RACIAL PLATFORM CAPITALISM:
RACE, LABOUR AND THE MAKING OF
PLATFORM INFRASTRUCTURES**

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A THESIS SUBMITTED TO THE DEPARTMENT OF GEOGRAPHY AND
ENVIRONMENT OF THE LONDON SCHOOL OF ECONOMICS FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY, LONDON, NOVEMBER 2023

DECLARATION

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ABSTRACT

The critical platform studies literature has built a compelling picture of how techniques like worker (mis)classification, algorithmic management and workforce atomisation lie at the heart of how 'work-on-demand via apps' actively restructure labour. Much of this emerging scholarship identifies that platform workforces are predominantly comprised of migrant and racially minoritised workers. However, few studies theorise migration and race as structuring logics of the platform model and the precarity it engenders. This thesis uses multi-sited ethnography to develop a theory of 'racial platform capitalism' from the standpoint of on-demand app-based workers in London. Drawing on ethnographic interviews of over 100 workers on ride-hailing platform Uber and childcare platform Bubble, this thesis makes three distinct, original contributions: 1) to the platform labour literature, it takes the passing observation that workers on gig platforms are disproportionately migrants and racial minorities, and situates this as a central analytic category of the platform economy's emergence in urban contexts; 2) to the racial capitalism literature, it pushes for scholars to consider how processes of social differentiation operate differently through data-driven systems; 3) to the platform urbanism literature, it unpacks how, given these two observations, platforms are (re)shaping how racialised surplus populations are moving through and producing urban socio-spatial relations, by organising them into the gaps of urban and social reproductive infrastructures. Additionally, this thesis develops an innovative methodological rubric for conducting platform work ethnographies. It calls for this emerging method to be reconceptualised as an ethnographic inquiry not into 'workplaces', but into 'worlds-of-work', with multiple temporal and spatial registers.

ACKNOWLEDGEMENTS

I would like to dedicate this thesis to every platform worker who shared their time, expertise and insight with me with me over the past five years. Thank you for your fight for better working conditions: everyone is staked in your success.

I would like to thank my supervisors, Austin Zeiderman and Romola Sanyal for your unwavering intellectual and moral support throughout this process. You have taught me how to be a rigorous thinker, a meticulous teacher and a generous colleague. This thesis - and my growth as a scholar - would not have been possible without the privilege of learning from you. I will carry your lessons throughout my career.

To my broader community, thank you for your intellectual and political guidance, which I cherish. Particularly the RICE crew - Gargi Bhattacharyya, Kojo Koram, Adam Elliot-Cooper, Luke de Noronha, Sita Balani and Nadine el-Enany. I look forward to a lifetime of collaboration and comradeship with you all. To my close friends, my heroes: Eleanor Penny, Elif Sarican, Becka Hudson, Tash Samrai, Lettie Ezaz, Kate Sim. The value of your political, personal and emotional support cannot be overstated. To my mum, dad and brother - my love and gratitude are endless. All my strengths are reflections of you.

To Freddie Stuart. You keep me strong. Thank you for doing life with me and for reminding me to, no matter how hard things get, put my little shoes on and go outside. I love you.

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List of Abbreviations

ADCU – App Drivers and Couriers Union
AI – Algorithmic Management
AVA – Authorised Vehicles Area
CDA – Critical Discourse Analysis
CESEE – Central, Eastern and South-Eastern Europe
GFC - Global financial crisis
HGV – Heavy Goods Vehicle
ILO – International Labour Organisation
IWGB – Independent Workers of Great Britain
LPHCA – Licensed Private Hire Car Association
LTDA – Licensed Taxi Driver Association
NMW – National Minimum Wage
NRPF – No Recourse to Public Funds
NSN – Nanny Solidarity Network
ODW – Overseas Domestic Work Visa
PAYE – Pay as you Earn
PHV – Private Hire Vehicle
SER – Standard Employment Relation
TFL – Transport for London
TUC – Trade Union Congress
UI – User Interface
UKSC – United Kingdom Supreme Court
UPHD – United Private Hire Drivers
UX – User Experience
VC – Venture Capital

Introduction

This project did not begin with an interest in platforms - or even technology. It began with a question I have been asking myself since childhood: what is our place in this city? By 'our', I mean immigrants and their children, who wear their passports on their faces (Sivanandan, 1976). By 'this city': London, my complicated home.

My father arrived in Britain from Egypt in 1977. His hopes of getting to the US scuppered by a labour protectionist Carter presidency, he settled in South London. My mother followed 13 years later. Both healthcare workers, their trajectory was typical of their time. Being married and ready to qualify and work was enough to start a life. 30 years later, I watch people making that same voyage from the Middle East and Africa under an immigration regime that proudly self-describes as hostile. My parents' journey was not easy - migration never is - but today, it would have been impossible.

How we move, what we make and how we are made when we get here: thinking through these questions has become my preoccupation, as an academic and person. Living in London in 2019, when this project began, it became impossible not to notice a new answer to these questions was emerging: apps. The Black and brown hands that had toiled here and globally to build this city's wealth were now clasped around rectangular screens, pushing many of us across the sprawling metropolis - including my brother, who did platform work throughout my research. On high-speed bicycles and motorbikes, in cars moving at glacial pace through traffic. Running up and down apartment stairs in helmets, holding brown paper bags and sacks of groceries. Less obvious: those ferrying massage tables, manicure sets and themselves between homes. What we were doing - and the instrument we were using to do it - was changing, and so, I assumed, were we.

Curious, I turned to those already writing about this new way of organising work. I found a budding critical scholarship on platform labour, spanning urban geography, labour geography, sociology, media and communications, law and management studies. Scholars were traversing disciplines to situate platforms as a force of labour restructuring and class composition - produced by a configuration of legal, technological, cultural, political and economic techniques. Yet, what brought me there was missing - despite loose allusions to characters and stories familiar to me as someone who writes about race and the economy: regulatory exceptions, conspicuous overrepresentation of racialised migrants, changing classifications of people and their activities, inexplicable distributions of risk and people being dehumanised and treated as disposable. This thesis works these threads into a new pattern, which makes legible the structural relationship between

the racialisation of platform workers and how platforms are reconfiguring urban labour and, therefore, urban space. Beyond identifying the over-representation of racial minorities in platform work, it argues that social differentiation has been crucial at every stage of the platform economy's emergence; techniques that classify, order and discipline bodies are organising principles of platform capitalism.

To do this, this thesis engages scholars working explicitly and implicitly under the theoretical rubric of racial capitalism in geography and its disciplinary cousins: i.e., those concerned with understanding how social differentiation operates as a central mechanism of class-making, and therefore the (re)production of capitalist modernity. It pushes racial capitalism scholarship to consider how such lines of enquiry change in context of data-driven technologies. It argues platforms are deeply invested in socio-cultural and political constitutions of their workforces as surplus, disposable and less-than-human - and therefore in the racialisation processes governing these dynamics, particularly in major cities. In turn, as these technologies change how racialised workers exist, move and work within the city, they also change what it means to be racialised in urban contexts. The claim: there is something distinctly *racial* about how platform capitalism is re-organising urban labour - that platform capitalism itself is an innovation of racial capitalism: hence, racial platform capitalism.

Racial Platform Capitalism

This thesis analyses racial platform capitalism at three registers: theory, method and practice. Chapter One frames the theoretical provocation: it proposes that racial and platform capitalism scholarships have been separately theorising responses to similar questions - and something can be gained by refracting these frameworks through one another. These shared questions concern how capital re-organises urban labour-power following economic crisis; how socio-cultural classificatory practices distribute rights unevenly across populations; how technologies (political, social, cultural and computational) cultivate disposability, exploitation and discipline and facilitate organised abandonment. Chapters Two and Three consider racial platform capitalism as a methodological problem: how can we study racial platform capitalism, given the destabilising spatio-temporal and conceptual dynamics platform work represents, and the elusive, spatio-temporally contingent politics of race? Chapters Four to Nine engage these theoretical and methodological provocations through a case study of racial platform capitalism *in* and *as* practice: through an empirical, ethnographic study of Uber and on-demand childcare platform Bubble in London.

The intention is not to develop a meta-theory of how racial platform capitalism unfolds in all times and places: at different moments and sites, the social differentiation processes facilitating platform

exploitation will be articulated differently. Rather, it is to introduce social differentiation concepts to the platform labour literature and establish racialisation as central to this unfolding global story. Whilst the conditions outlined are particular to London, the findings provide insight into how the making of platforms at grounded sites shapes the model moves globally. Platform labour is not an abstract model concocted in Silicon Valley and exported; it is a grounded phenomenon taking shape through and alongside existing social relations. This includes racial and migrant divisions of labour that co-constitute the urban sites where platforms are developing. Unpacking how platformisation interacts with these racialised labour relations in specific contexts is therefore crucial to understanding “actually existing platformisation” (van Doorn et al., 2021).

Race and/as/in Technology

This thesis broadly theorises the relationship between racialisation, labour and changing technologies. Wendy Chun makes an important distinction between theorising race-*and*-technology, and race-*as*-technology. Race-*and*-technology, she argues, is the study of how technology impacts racialised people - how it executes racial violence or helps develop racial thinking. Race-*as*-technology shifts from the “what of race to the *how* of race, from knowing race to doing race” (Chun, 2009, p.8); here, race is not an object, but a *tool* applied to produce particular effects; to divide, classify, categorise, hierarchise - and even expel (Mbembe, 2003) - human beings according to ideas of innate difference, made legible through embodiment. Like all technologies, how race works evolves depending on context; it can be disassembled, re-assembled, re-invented, yet each innovation is built on past knowledge (Lentin, 2020). How race exists co-evolves alongside power - its design reflects, refracts and co-produces power because it enables resources, capital, rights and labour to be distributed in particular ways (Omi & Winant, 2014). The character of this tool therefore adapts (Gilroy, 1998): from mediation via biological claims, to classification according to social, cultural and psychological associations (Lentin, 2020), to ideas of race as legible on molecular levels (Fullwiley, 2014). Yet, as it is (re-)embedded, its use remains an intuitive heuristic; imagining modern life without this technology of classification and demarcation becomes as futile an exercise as imagining modern life without the invention of the combustion engine. Could capitalism have existed without it? Perhaps. Does it? No. Much like the combustion engine, race is not the only tool of capitalist (re)production - it is not always the answer to why and how capitalism continues to exist and is not necessarily in use in every location or interaction capitalism touches - yet what race *does* as a technology is inextricably linked to the capitalism we know today, in its global form.

This thesis unpacks how race works to differentiate, hierarchise and expel human beings in a labour context, how this is refracted through the particularities of platform capitalism, and how the deployment

of race-as-technology informs and is informed by the development of new management technologies. Within this, emerges another, related way of theorising the relationship between race-and-technology – race-*in*-technology. Here, racialised logics about the nature of the people being subject to, in this case, algorithmic platform technologies, are built in to the technology at every stage of its emergence: its design, development and deployment – yet the final product is abstracted from these origins. This goes beyond technology as technical assemblage or lines of code - it includes legal, cultural, regulatory and political-economic mechanisms that enable the technology to be used as it is being used. Indeed, as Wajcman argues, technology is not just reducible to its hardware or the knowledge required to design, make and repair it - and it certainly is not simply the application of scientific discovery. Rather, technology is *also* defined through its *application* - “of what people do as well as what they know” (1996, p.14) - ‘technology’ comes into existence as tool, knowledge *and* practice. As platform technologies proliferate throughout society, their emergence at sites like the one explored here, shape what a ‘platform’ comes to mean. The call therefore is for platform scholars to consider racialisation crucial context for platform capitalism’s emergence - alongside already identified structural factors like austerity, neoliberal restructuring, financialisation and telecommunications infrastructure development. Indeed, the basic *technical* fact of a programmable architecture that connects users (van Dijck et al., 2018) can exist in countless ways: what has *come* to exist is a particular story. In turn, what platforms have come to mean shapes the racial logics that emanate through and alongside them.

Race is clearly not the only way people, and their labour are differentiated. Gender is also an inscription that shapes what work we do and how it is valued. Borders, too, are fictions that re-orient our relationship to spaces we inhabit and how we - through our work - exist in them. These phenomena are inextricably linked. Throughout this thesis, I use race to describe the processes of social differentiation that exclude platform workers across two sectors, childcare and taxi driving, from rights-conferring categories (namely, the standard employment relationship (SER)), through ideas of the inherent, essential ‘difference’ of them and what they do from how standard employment has been imagined. Race provides a unifying language to describe these processes across these sectors and in the London context - but within this, gendering and bordering are constantly present. Indeed, the dispossession of platform workers from the category of employee is related to their dispossession from other rights-conferring categories: citizen, innocent, woman, wife, mother and human. In the constitutive outside of these categories, are a variety of figures platform workers described themselves as inhabiting during our conversations: servant, criminal, robot, animal, machine (Chun, 2009; Mackereth, 2019).

Research Questions and Chapter Outline

This is a multi-sited ethnographic study, which includes over 80 interviews with 70 London-based workers from Bubble and Uber. It proposes a 'racial platform capitalism' framework at three levels - theory, method and practice – by responding to the following:

1. How is the platformisation of urban infrastructural work in London shaped by and shaping processes of social differentiation?

This is addressed through the following sub-questions:

- a) *What processes of racialisation, gendering and bordering are shaping the makeup of platform childcare and taxi workforces in London?*
- b) *How do these social differentiation processes shape the norms, experiences and conditions of platformisation in these sectors?*
- c) *How are platforms changing the relationship of racialised migrant workers to urban space?*

Secondly, this thesis engages the following methodological concern:

2. What methods are appropriate for conducting workplace ethnographies in the platform economy?

This is addressed through the following sub-questions:

- a) *What challenges do platform work pose to traditional workplace ethnography?*
- b) *How do existing platform work ethnographies engage with these challenges?*
- c) *How can workplace ethnography be reconceptualised given these challenges?*

Responding to these questions, this thesis is divided into four parts. Part One (chapters 1-3), lays the theoretical and methodological pathways to racial platform capitalism as a concept. Parts Two, Three and Four (chapters 4-9) engage *empirically* with racial platform capitalism as a practice.

Part One: Pathways to Racial Platform Capitalism

The first chapter of Part One opens this thesis by outlining 'racial platform capitalism' as a theoretical provocation. It summarises how the platform capitalism scholarship situates platformisation as a labour 'fix' following the 2008 global financial crisis (GFC), organising surplus populations into a cheap, disposable 'on-demand' workforce. It then summarises how the racial capitalism scholarship illuminates the racialised and racialising processes underpinning the production of surplus populations - and proposes a relationship between the 'racial fix' and 'platform fix'. It then outlines the role of the urban in both fixes - situating racial platform capitalism as restructuring urban infrastructural labour. Drawing on smart city and platform urbanism scholarships, it summarises how platforms reconfigure urban social and spatial conditions both through their embeddedness in urban infrastructural labour and as a socio-technical imaginary. Brought together with recent interventions in urban geography that employ an embodied approach to studying infrastructural labour, the chapter ends by proposing racial platform capitalism as (re)-shaping the way racialised surplus populations move and work - and therefore exist - in cities. This chapter relies on insights from labour geographers, urban geographers and geographers of race. It also draws on those not explicitly in geography, but whose work is deeply geographic, spanning sociology, media and communications and cultural studies. Whilst not all scholars engaged with are explicitly Marxist, this thesis works in a Marxist geographic tradition - it situates the production of urban space, and relations within it, as inextricably tied to changing dynamics of capitalist (re)production; and is interested in analysing material power - what it means to have it and to lack it (Harvey, 1973).

Chapters Two and Three tackle the methodological provocation of RQ2. Chapter Two responds to RQ2a) and b). It summarises the conceptual, spatial and temporal challenges platform work poses to the organising concepts of workplace ethnography - workplace, working time, work and worker. It then conducts an evaluative survey of twelve ethnographies of platform work (Appendix 3), identifying three common methodological strategies: ride-along ethnography, auto-ethnography and online forum ethnography. This chapter reflexively analyses how these strategies engage such challenges by unpacking what parts this splintered labour processes they can and cannot register. Chapter Three builds on these insights and responds to RQ2c) by proposing a shift from 'workplace' to 'world-of-work' ethnography, which embraces the disunity of working place, time and classification, and can better capture the labour process at multiple spatial and temporal registers. It does this by outlining the multiple sites and methods I deploy, and how they fit together to create a holistic concept of the platform labour process.

Part Two: Carved Out: The Post-War Social Contract and Classification as Racial Practice

Part Two responds to RQ1a), arguing that the platform labour model represents not a decline of post-war labour standards (as situated in the literature), but a continuation of an historic political-economic fact of racial capitalism, which excludes - 'carves-out' - particular work and workers from the SER through social differentiation. Within this, Chapter Four demonstrates this from the vantage of Uber in London. It contextualises the dominance of South-Asian, specifically Bangladeshi and Pakistani, male workers in Uber within their historic structural role as racialised surplus populations in the British economy. It maps their trajectory 'From Textiles to Taxis to Technofixes' - from their post-colonial recruitment as 'fixes' into Britain's ailing mid-century textile industry (to work shifts refused by the local population), to their dispossession into precarious self-employment (including as taxi drivers) by de-industrialisation, to their subsumption into platform labour. It then, using interview data and discourse/visual analysis of Uber's marketing materials, explores how Uber, under the rubric of the 'technofix', repackages racialised 'carve-outs' from the SER as entrepreneurial empowerment.

Chapter Five engages RQ1a) from the vantage of Bubble. It begins by outlining how racialised migrant women have been historically tracked into domestic work by a double carve-out; they are 'carved-out' from the SER through their gendered and racialised illegibility in employment and migration regimes, and from hegemonic ideals of womanhood due to the commodification of their caring labour. This chapter illuminates the legacies of these carve-outs in Bubble today. Firstly, it uses interviews to map archetypal pathways into platform care work, rendering legible the role of racialisation, bordering and gendering in each pathway. It then, using interviews and visual/discourse analysis of Bubble's marketing materials, explores how Bubble repackages and perpetuates racial divisions of reproductive labour through neoliberal feminist claims. Together, both chapters argue worker (mis)classification - identified in the literature as central to the platform labour 'fix' - is a legacy of classification as racial practice.

Part Three: Working On-Demand: The Return of the Serving Classes

Part Three responds to RQ1b) by turning to another technique of the platform labour 'fix' identified by the literature: algorithmic management. It explores how racialised 'carve-outs' shape and are shaped by algorithmic management, producing a workforce that is 'on-demand' in two ways: both available at any place and time, and available to service any 'demand' a customer expresses. Yet this servility, long a marker of racialised labour, is extracted through the language of self-commodification. Within this, Chapter Six draws on ethnographic interviews, case-worker ethnography and visual/discourse analysis of media materials to explore how the constitution of Uber drivers as 'brown' through security and terror discourses

engenders a punitive, carceral logic in Uber's management algorithm and its related processes. It then uses interviews to show how cultivates worker servility, as drivers manage their conditions through over-compensatory, deferential performance.

Chapter Seven uses platform design ethnography, interviews and visual/discourse analysis of marketing material to show how Bubble exploits and reformulates historic, racialised expectations of servility from private domestic workers. By using the 'taskifying' capacity of algorithmic management to strategically formalise parts of the labour process, and leave others informal, Bubble sets expectations of childcare as an 'on-demand' consumer experience, without commensurate increase in job status or pay. Combined with the generalised audit culture of algorithmic management, racialised servility is extracted through new languages of self-commodification, profiles and hyper-visibility.

Part Four: Labouring Platform Infrastructures

Part Three responds to RQ1c), connecting insights of the previous two Parts to demonstrate how platforms – through their infrastructural promises - (re)shape the function racialised surplus populations play in cities, thereby changing the markers of racialised labour. Both chapters explore Bubble and Uber in conjunction with one another, drawing on ethnographic interviews, platform ethnography and visual/discourse analysis of media and marketing materials across both platforms. Within this, Chapter Eight argues the promise of platforms to provide flexible infrastructures relies on the racialised (re)constitution of platform workers as interchangeable and disposable. Chapter Nine argues the promise of platforms to provide frictionless infrastructures relies on the racialised (re)constitution of platform workers as disembodied and dehumanised, enabling platforms to devolve their financial, embodied and social risk to workers.

A Note on Comparison

A central contribution this thesis makes is its extended empirical and theoretical engagement with a care platform. The platform scholarship overwhelmingly focuses on male-dominated labour like delivery and minicabbing - particularly Uber, which is treated as metonymic of the platform economy (Rosenblat, 2018). This is despite analysis that household services platforms are the fastest growing sector of the platform economy (PwC, 2017), and that women comprise the majority of the platform workforce (Mateescu et al., 2018, p.4). This is partly an access issue: these masculine labours happen in public space, as opposed to care, domestic and sex work, and are therefore more easily accessible by researchers. It is also rooted in "gendered bias in scholarship and public attention about on-demand labour" (Mateescu &

Ticona, 2018, p.4386). Scholars have begun to redress this gap (Huws et al., 2019; Tandon & Rathi, 2021; Sedacca, 2022); this thesis empirically builds on this by contributing an extended ethnography of Bubble workers. Yet, this thesis is not just about platform care - it analyses Bubble in conjunction with the extensively researched Uber. This risks reproducing the problem of 'Uberization', whereby direct parallels are drawn between Uber and platforms in other sectors despite different gendered histories of in/formality. Indeed, the differences between Uber and Bubble go beyond sector - Uber is a global platform, operating in over 10,000 cities. Bubble is mainly active in London; whilst it operates in cities like Cambridge and Edinburgh, it is not widely used due to insufficient worker supply.

This thesis does not *compare* Bubble with Uber. Rather, it brings both platforms *into conversation* with one another, considering differences in their labour and migration histories - and the variegated ways platforms engage these histories - within its analysis. The decision to research two platforms in one city but different sectors (rather than the more commonly found comparison of one platform across two cities), is motivated by interest in the *infrastructural* quality of the platform intervention. Platforms are working together *across* sectors to transform urban social and spatial conditions - from borrowing linguistic, strategic and design techniques from one another to direct cross-platform collaboration. Bubble, for example, promotes itself as the 'Uber' of babysitting (Basul, 2019). Halfway through this project, Bubble and Uber announced a partnership ("Bubble for Uber drivers", n.d.), where the first 1000 drivers to 'opt-in' were given 10 hours of free childcare on the Bubble app, and a 6-month subscription to Bubble Premium. Here, Bubble and Uber bolster one another's claim of being a 'fix' to crises in urban infrastructural labour. By drawing these cases together, this thesis can explore how a city's infrastructure - and its specific regimes of racialisation, bordering and austerity - are being (re)shaped by platformisation. In doing so, it illustrates what platforms are doing to our cities, and the people living in them.

PART ONE

PATHWAYS TO RACIAL PLATFORM CAPITALISM

-1-

Racial Platform Capitalism: A Theoretical Provocation

The growing critical platform studies literature builds a compelling picture of how the rise of ‘work-on-demand via apps’ actively restructures labour. Much of this scholarship identifies that platform workforces are predominantly comprised of migrant and racially-minoritised workers. However, few studies situated race and migration as structuring logics of the platform model, the precarity it engenders and the way it is shaping the existence of surplus populations in cities. Drawing on the racial capitalism literature, this thesis proposes a novel framework, which illustrates the how race and social differentiation shapes the emergence of on-demand platform labour. This chapter gives a critical assessment of the platform and racial capitalism literatures and outlines the basis of racial platform capitalism as a novel theoretical framework, for further development by later empirical chapters.

The chapter begins by summarising how the literature situates platformisation as a ‘fix’ following the 2008 GFC through the production of ‘on-demand’ workforces (Aloisi, 2015). It will demonstrate how platforms subsume surplus populations produced through and alongside the 2008 crisis, organising them into a cheap, disposable workforce in ways that generate fresh sites of accumulation. It will then explore how the racial capitalism scholarship unpacks the racialised and racialising processes underpinning the production of surplus populations. By bringing these literatures together, it proposes a structural relationship between the ‘platform fix’ and the ‘racial fix’ post-2008. The claim here, is there is something *racial* about how platform capitalism is re-organising urban labour workforces - hence ‘racial platform capitalism’. Finally, the chapter outlines the centrality of the urban to both literatures, and in turn, to racial platform capitalism, both theoretically and regards the empirical context of this thesis.

The Platform Economy

At its basic, technical level, platforms are “programmable [architectures] designed to organise interactions between users” (van Dijck et al., 2018, p.4). As the ‘web’ moved from top-down publication of content to peer-production-based content in the mid-2000s, the idea emerged of platforms as software models that could create a ‘networked public sphere’, by enabling participatory co-creation (Benkler, 2006). As such, the success of a platform relies on the generation of network effects (Srnicsek, 2017) – its usability relies on data generated from having an increasing user base that provides content and user data. As platforms become increasingly essential in our daily lives, their social, economic and political implications

have become a concern across the social sciences. Many consider this ‘networked public sphere’ to be an infrastructure, whereby platforms have become so embedded in fundamental social functions, they acquired the omnipresent, systemic quality of an infrastructure (Plantin et al., 2016; Andersson-Schwarz, 2017). This has emerged through two, related processes – the inserting of platforms into existing infrastructures, and through platforms becoming infrastructure in their own right.

The latter includes search engines, browsers, pay systems, geospatial services and data servers owned by the ‘Big Five’ (Andersson-Schwarz, 2017), which gatekeep data flows and “form the heart of the ecosystem upon which many other platforms and apps can be built” (van Dijck et al., 2018, p.13). The former includes platforms that provide specific services, like food delivery (Evans & Gawer, 2016). However, as van Dijck et al (2018) emphasise, the division between ‘infrastructural’ and ‘sectoral’ platforms is not fixed but driven towards integration. Both enable a small group of companies to accrue technological and economic power, producing something akin to a large sociotechnical system (Bowker et al., 2007). What is identifiable here, is the “platformisation of infrastructure and infrastructuralisation of platforms” (Plantin et al., 2016, p.295).

The critical platform scholarship unpacks the socio-political and economic relations developing through and alongside this emerging infrastructure. It analyses how platforms operate together as large-scale socio-technical networks known as the “platform economy” (Andersson-Schwarz, 2017), or “platform society” (Van Dijck et al., 2018). These terms refer to a societal organisation where social and economic interactions are channelled through networked digital infrastructures. This literature conceives platforms as a transformative force, which do not simply ‘mediate’ existing socio-economic relations, but creates new ones (Srnicek, 2017; Ferreri & Sanyal, 2018). Platform scholars across the social sciences unpack how *platformisation* – the process(es) by which “entire societal sectors are transforming as a result of the mutual shaping of online connectors and complementors” (van Dijck et al., 2018, p.19) – operate as sites of active restructuring across spheres including urban planning and governance (Ferreri & Sanyal, 2018; de Lange & de Waal, 2019), media and communications (Van Couvering, 2017; Nieborg & Poell, 2018), financial markets (Just, 2018) and the focus of this thesis – labour.

Two models of work-based platforms have emerged: ‘crowdwork’ and ‘work-on-demand via apps’ (de Stefano, 2016). Crowdwork involves outsourcing often administrative tasks through open calls to a geographically dispersed workforce. Companies use crowdwork to distribute tasks to low-wage workers, largely in the Global South (Gray & Suri, 2019; Cozman et al., 2020). Work-on-demand via apps involves allocating work through location-based apps – typically involving “local, service-oriented tasks” (ILO, n.d.).

Platformisation of this kind has transformed several labour markets, including transportation, delivery, sex work and domestic work (Narasimhan et al., 2018); here platforms do not merely facilitate, they actively restructure the working norms and conditions in the sectors they enter. This thesis focuses exclusively on work-on-demand via apps, and so use of terms like 'platformisation', 'platforms' and 'platform economy' will henceforth exclusively refer to phenomena related to work-on-demand via apps.

The Platform Fix: Organising surplus populations in the post-2008 city.

Critical platform labour scholarship situates platformisation as a way of re-organising urban labour in ways that a) generate fresh sites of accumulation following the 2008 GFC (Rosenblat, 2017; van Doorn, 2017) and b) are situated as a 'solution' to the post-GFC unemployment and underemployment crisis. Under this rubric, the creation of a platform workforce with its specific technical, political, and social formations exists as part a broader structural, political-economic shift - a 'fix' to the 2008 GFC (Srnicsek, 2017; Hodson et al., 2020). The platform fix is a kind of 'techno-fix' or 'technocratic solutionism' (explored further below) - whereby complex, seemingly 'unsolvable' social, political or economic problems are posited to have 'quick fix' technical solutions, even if they are rooted in entrenched conflicts of ideology and material interests (Carr, 2013; Lindtner et al., 2016). Central to the platform fix is the production of a digitally-mediated "on-demand workforce" (Aloisi, 2015; de Stefano, 2016), subject to particular modes of organisation, precarity and embodied experience.

The platform fix is a spatial fix that depends on technological innovation (Harvey, 2001) – with geolocation apps like Uber and Bubble, deploying algorithmic technologies to organise worker mobility for the provision of on-demand services. This involves compressing time and space; platform technologies allow more services to be delivered more frequently, in more territories and with more immediacy than before. Value is created through a "dual value production" model, extracting the "monetary value associated with the service transaction" and "the more speculative and volatile types of value associated with the data generated through service provision" (van Doorn & Badger, 2020, p.2). Here, user data is exchanged for the promise of, for workers, an accessible income, and for consumers, the provision of cheap, rapid services. Data is further generated through interactions between users on the platform itself. Scale is therefore central to platform survival: generating the greatest number of interactions requires having as many workers and users on the platform as possible.

As heavily networked, intensified sites of world-making (Sassen, 2002), global cities are significant for the growth of the data-driven platform economy. London, this paper's case study, was the eleventh city Uber entered, just 17 months after launching in San Francisco. Then-CEO Travis Kalanick identified London

as integral to the company's growth, declaring: "we're just trying to strap ourselves into this rocket ship" (Sawers, 2012). In turn, the availability of an on-demand, digitally accessible service workforce has become key to urban competitiveness in the post-2008 global economy (Taylor-Buck & While, 2015). The reliance of platform business models on sizeable venture capital (VC), pre-existing infrastructure, a large service sector and rapidly scale-able network effects creates a co-constitutive relationship between the post-2008 global city and the global platform (Sadowski, 2020b). As this chapter later demonstrates, the availability of a racialised and/or migrant service workforce is a central, under-theorised part of this story.

The composition of an 'on-demand' platform workforce is therefore intimately tied to the post-2008 urban contexts in which the platform economy has emerged. For capital, platformisation is a "fragile spatial fix," unlocking new sources of value through data-driven accumulation (Hodson et al., 2020). This dovetails with gaps created by austerity-driven deficits in government funding of urban services like transport and care work, allowing platforms to integrate into the fabric of major cities (Peck, 2012). In turn, the failure of traditional financial and political institutions to protect livelihoods, and the shrinking availability of standard employment, saw workers turn to platforms to supplement or replace lost income. As Marčeta (2021) argues, having a low barrier of entry enables platforms to subsume workers unable to find employment in standard labour markets. Marčeta draws on the Marxist concept of relative surplus population or the "disposable industrial reserve army" (Marx, 1976, p.784) to describe the populations platforms draw from. This includes those excluded from standard employment and those with precarious and/or uneven access to standard employment and welfare state provision (Greer, 2016). These populations are strategically included and excluded from standardised wage-labour according to capital's interests, and their systemically engendered low living standards creates "a mass of human material always ready for exploitation by capital in the interests of capital's own changing valorisation requirements" (Marx, 1976, p.784). The constant production of this pool of cheap unemployed and underemployed is therefore a "necessary product of accumulation" (p.784), as it "enables capitalists to maintain wage discipline and inhibit working-class solidarity" (Farris, 2019, p.112).

The rise of on-demand platform labour must therefore be understood in relation to the post-2008 unemployment crisis, which (re)generated the relative surplus populations from which labour platforms now draw. Indeed, the platform model relies on maintaining a seemingly endless stream of workers available to accept, within minutes, 'gigs' requested by consumers. To function, this requires more workers being 'plugged in' to the app than 'gigs' available at any given time and location. The worker is not paid for time spent waiting, 'plugged in,' despite this being central to the platform's promise of on-demand service. The model therefore relies on maintaining and managing a constantly available pool of surplus labour in its

operative locations. The uncertain promise of a potential 'gig', and lack of opportunity elsewhere, keeps the worker attentive to the platform, even while unpaid. For this dynamic to function, workers must be insecure, flexible and easily interchangeable (Altenried, 2021).

The literature identifies several firm-led processes that produce 'on-demand' workforces - however, the two of concern to this thesis are: worker (mis)classification and algorithmic management. The creation and interaction of these phenomena is specific to platforms: it emerges through the digital architecture of an 'app', the cultural story accompanying the rise of the digital platform and the political economy of platform companies and their interests.

i. *Worker (mis)classification*

Worker (mis)classification involves the legal classification of platform workers as independent contractors rather than employees; workers are considered self-employed when shouldering operational costs and being denied worker protections, yet the degree of management control often exceeds standard employer/employee models (Dubal, 2017; Aloisi, 2022). Not only does the app's digital apparatus facilitate unprecedentedly close worker surveillance, and often (not always) sets worker rates, but platform workers do not typically have the independence associated with self-employment (Todolí-Signes, 2017). The valuation of corporate platforms relies on their ownership of customer data (i.e., network effects) and *information* workers need to find work. This 'information asymmetry' (Calo & Rosenblat, 2017; Shapiro, 2020), and the tendency of platforms towards scale/sector monopolisation makes workers increasingly dependent on platforms for work. Workers are often not given full details of a job until they accept, making it difficult to assess whether it is profitable. This creates a coercive working model that does not meet the independence standard of self-employment (Athreya, 2020). This legal mechanism allows platforms to maintain the constant stream of surplus labour central to its mode – it makes workers cheap and facilitates evasion of employment regulation (e.g., pensions, sick/holiday pay and right to fair dismissal). This arrangement saves platforms up to 30 percent in labour costs, and the low barrier of worker entry enables the scaling of network effects (Chayka, 2015; van Doorn, 2017, p.902). This would be unviable if platform companies had to pay the full cost of employing every worker 'plugged in' at any given time (Zwick, 2018).

Globally, unions are contesting worker (mis)classification - with resistance from platform companies (Joyce et al., 2020). In London, the UK Supreme Court (UKSC) granted Uber drivers limb-b worker status, entitling them to some rights like holiday pay and minimum wage (Uber BV vs Aslam, 2021). This represents a more typical sub-contractual relationship, whereby drivers are engaged as workers by Uber to fulfil Rides

from time to time on request of Uber, in order to fulfil Bookings from Riders¹. However, Uber's embeddedness in London's transport landscape has relied on (mis)classifying workers for almost a decade - this legal formation therefore remains integral to understanding Uber's rise in London. Even after the UKSC Uber ruling, both Uber and Bubble frame their relationship between platform and worker as commercial, rather than employment-based, whereby the platform provides the contractor with software to access clients; the platform worker, like the client, is a 'customer' of the platform's services (van Doorn, 2017). Both Bubble and Uber stipulate that instead of employing workers, they are granting a license to install and use the app to find work ("Terms of Use", 2019).

Key elements of worker (mis)classification remain intact: Uber continues to 'taskify' labour, compensating only time spent transporting passengers, despite the ruling stating otherwise, and drivers still do not have a right to fair dismissal. Finally, at time of writing, this ruling applies only to Uber and Addison Lee in the UK - the rest of the on-demand platform economy still relies on workers being classified as self-employed contractors. Bubble more clearly removes their relationship from the realm of employment, stating in their terms and conditions: "We do not employ Sitters. We do not seek to find employment for sitters. We do not recommend Sitters" exclusively a "platform that connects Parent users with Sitter users" ("Terms of Use", 2019).

ii. Algorithmic Management

Related to worker (mis)classification, the literature identifies the shift from Taylorist Scientific Management to algorithmic management as a platform-driven labour restructuring process (de Stefano, 2016; Möhlmann et al., 2021; Stark & Pais, 2021). Mateescu & Nguyen define algorithmic management as:

A diverse set of technological tools and techniques to remotely manage workforces, relying on data collection and surveillance of workers to enable automated or semi-automated decision making.

(2019, p.1)

Worker classification as limb(b) or self-employed allows platforms to circumvent employment laws around discipline and fair dismissal, and therefore opaquely and unaccountably manage large-scale workforces. Worker behaviour and performance is constantly "tracked and evaluated", informing the "automatic implementation of algorithmic decisions" (Möhlmann & Zalmanson, 2017, p.5). As platform

¹ Contract shown to me by a driver via personal correspondence

workers have no right to fair dismissal process, this often looks like automated, blanket application of undisclosed rules to large numbers of workers. A hallmark of platform management is the digital rating system, where customers 'rate' workers after each gig - outsourcing the auditing of worker performance to anonymous, unaccountable customers. These ratings partially underpin algorithmic management, with workers being 'flagged' and disciplined for having overall ratings below undisclosed thresholds (Glöss et al., 2016). Algorithmic management also involves workers being monitored and automatically deactivated/disciplined for exhibiting particular behaviours. For example, many platforms monitor workers for signs they are using the app to create their own client lists, automatically penalising them if such behaviour is detected (Hartmans, 2018; van Doorn, 2018). However, *what* behaviours are flagged and *how* remains opaque, meaning workers struggle to contest the terms of their discipline/dismissal; the processes governing the working lives of platform labourers are therefore not transparent. Finally, algorithmic management looks like indirect 'nudging' - for example, workers at Uber and Bubble are not only monitored, but given automated, comparative metrics, situating them in constant competition with fellow workers, creating a "generalised audit culture" that pushes workers to "self-optimize and cater to customers' every whim" (van Doorn, 2017, p.904).

Both worker (mis)classification and algorithmic management facilitate work *taskification* - whereby work activity is divided, redefined and standardised into 'tasks'. Instead of a salary, workers are paid per task - the parameters around which are defined by the platform. Algorithmic management allows for the breaking down and live recording of task completion (and the capturing of (meta)data generated by each task), and worker (mis)classification allows for platforms to evade labour regulations like paid breaks and sick pay, which would involve paying the worker outside of pre-defined 'task' boundaries (Kellogg et al., 2020; Casilli & Posada, 2021).

The critical platform labour literature situates the growth of on-demand labour in the Global North as the latest stage in a broader structural trend of capitalism over the past century (Rosenblat, 2017; van Doorn, 2017; Jones, 2021; Marčeta, 2021) - a political-economic shift captured by Srnicek's term 'platform capitalism' (2017). This shift is characterised as a move from the post-war social contract governing employment (Peck & Theodore, 2012) toward the neoliberal rise of precarious work (Beck, 2014; Standing, 2014), ushered in first by deindustrialisation and the 1970s financialisation of Global North economies, and compounded again by the 2008 GFC (Killick, 2015). As the private sector captured an increasing segment of the economy, the decline of public sector jobs brought a decline of public sector job norms: the concept of a 'job for life', guaranteed employee welfare, union density, labour regulation and a strong welfare state (de Stefano, 2016; Piketty, 2017). In its place is the progressive rise of casualised workers employed on an

as-needed basis, that are easily hired and fired with little procedural obligation from employers (Harvey, 2007; Coffey & Thornley, 2010); a phenomenon Standing (2014) calls the 'precariat'. Within this landscape, the legal and technological innovations of platforms allow these longer historical processes to be intensified into the production of a 'just-in-time' (de Stefano, 2016) *and* 'just-in-place' workforce (Wells et al., 2021). Together, algorithmic management and worker (mis)classification facilitate the subsumption of surplus populations into an on-demand platform workforce that is cheap, precarious and interchangeable. This thesis - particularly chapters 4-7 (inclusive), demonstrate how the real-existing deployment of these strategies are built through and alongside the racialisation of the platform workforce. Yet, before doing so, key conceptual frameworks from the racial capitalism literature must be clarified.

The Racial Fix: racial capitalism and the production of surplus populations

The racial capitalism literature situates social differentiation as a central structuring principle of capitalist modernity and class-making (Mignolo, 2008, 2011; Maldonado-Torres, 2007; Wilson Gilmore, 2007). Drawing on Marxist traditions of combined and uneven development, racial capitalism situates modern colonialism as "integral to capitalism's beginnings, expansion and ultimate global entrenchment" (Parry, 2013, p.10). Processes of racialisation produced and consolidated by these historical moments provide(d) the "disposable labour" required by capitalist modernity; race functions as a necessary "categorical system in terms of which disposable life could be legitimised" (Goodrich & Bombardella, 2016: p.5). Indeed, at the heart of differentiation under racial capitalism is the need to create historically contingent hierarchies of labour-power (Roediger, 2017; Virdee, 2019). Here, 'race' does not rely on static, transhistorical notions of racial difference (Miles, 1982, 1993; Banton, 1998). The 'racial' refers to an active process – the "constitution of difference through assigning characteristics and value to visible 'Others'", mediated "through discourses and practices that operate across different spatial scales" (McDowell, 2009, p.74). Using racialisation rather than 'race' as a category of analysis sits in the Marxist tradition of Miles (Miles, 1982, 1993; Brown & Miles, 2003) and Banton (1998); it situates race as a contingent *process* rather than pre-fixed identity categories.

Racial capitalism theory does not locate race as the only or primary axis of social differentiation under capitalism - or one separable from others. The contributions of feminist scholarship on understanding embodied categorisation and labour under capitalism is integrated within racial capitalism frameworks – together, they "enhance our understanding of capitalism's shadow underside" (Bhattacharyya, 2018, p.41). Gender and race are not only fictions inscribed on the body, through which resources are distributed, but the logics of racial capitalism shape and are shaped by social reproduction, as well as waged labour (Mies, 1998; Strauss, 2019). The descriptor 'racial' does not privilege a repertoire of differentiation intuitively

legible as 'race' as primary or singular. Rather it refers to the importance of social differentiation processes that "have been socially enacted as racialisation" (Bhattacharyya, 2018, p.34) in capitalist development. Yet within this, racial capitalism "describes a set of techniques and a formation, and in both registers the disciplining and order of bodies through gender and sexuality, and dis/ability and age" (Bhattacharyya, 2018, p.41). The racial is co-constituted by multiple techniques of embodied othering, where the primary objective is to hierarchically categorise labour-power, and unevenly distribute precarity, resources and rights throughout populations (Virdee, 2014; Strauss, 2019). Drawing on Lisa Lowe, Virdee summarises the co-constitutive mode in which these differentiating processes operate:

Capitalist states and classes come to understand that the maximization of profits is most effectively secured not by 'rendering labour abstract' but by wilfully entangling the objective of profit maximization with the 'social production of difference, of restrictive particularity and illegitimacy marked by race, nation, geographical origins and gender

(2019, p.9)

This emphasis of co-constitution of social differentiation processes has clear parallels with the intersectionality scholarship (Crenshaw, 2017); indeed, this theoretical approach to race *is* intersectional. However, as this thesis primarily focuses not on identity formation, but on how identity formation shapes and is shaped by class composition under capitalist political economy, the frameworks offered by racial capitalism scholarship (albeit influenced by intersectionality) more specifically align with the goals of this project.

Racial capitalism scholarship holds that the organisation of labour-power is both a racialised and racialising process and seeks to make legible the political economy of social differentiation (Roediger, 2017; Virdee, 2019). To justify organising particular populations into particular kinds of work, racialised characteristics associated with visible 'Others' are "mapped on" to ideas about the suitability of particular "working bodies" for different kinds of work (McDowell, 2009, p.74). Different kinds of labour therefore become associated with racialised bodies that perform them, which shapes how this labour is socially valued, regulated, and managed (Jackson, 1992; Williams, 1994). Racialisation itself is engendered through a repertoire of discourses and images that help confer material conditions (Hall, 1997); these discourse and images, and their association with particular bodies, is consolidated through a range of processes, from moral panics to the construction of legal form (Hall, 1997). Therefore, the racialisation of labour is not just about workforce demographics, but about how labour is socially and culturally represented; there exists a "complex recursivity between material and epistemic forms of racialised violence, which are executed in and

by core capitalist states with seemingly infinite creativity” (Melamed, 2015: p.77). These processes of exploitation and, as explored below, *expulsion* through differentiation are always animated, re-constituted and re-invented by local spatial and temporal context (Wilson Gilmore, 2002; Robinson, 2005); all while tying populations in an interdependent, interconnected world system of accumulation (Wallerstein, 1979). The relationship between racial formations and labour under capitalism can therefore be understood as one of articulation, rather than static determinism. Hall clarifies how this relationship operates:

By the term ‘articulation’ I mean a connection or link which is not necessarily given in all cases, as a law or a fact of life, but which requires particular conditions of existence to appear at all, which has to be positively sustained by specific processes, which is not ‘eternal’ but has to be constantly renewed, which can under some circumstances disappear or be overthrown, leading to the old linkages beyond dissolved and new connections – re-articulations – being forged

(Hall, 1985, p.113)

Hall’s emphasis on contingency here urges against a notion of fixed racial hierarchy that governs social relations across time and space. Who is racialised, in what ways and through which means, is necessarily variable. Indeed, a racial capitalism framework does not propose a meta-theory of race or capitalism “in all times and all places” (Bhattacharyya, 2018, p.9); rather, it seeks to enhance critical understandings of how capitalism *works* – in both senses of the word. It is about capturing the tendency of capitalism “not to homogenise, but to differentiate” (Robinson, 2005, p26), and the political economic necessity of social differentiation. As a framework that spatialises and temporalizes capitalist relations, it is a tool to understand not only how capitalism has come to exist - but how it *continues* to exist. Whilst this includes understanding the “sedimented histories of racialised dispossession that shape economic life in our time”, racial capitalism crucially is not “reducible to these histories” (Bhattacharyya, 2018, p.x). The articulation of racial formations under capitalism must be constantly re-described and reconceptualised.

As well as hierarchising *within* work and workers, racial capitalism frameworks also describe processes of inclusion and exclusion/expulsion *from* the category of ‘worker’, ‘work’ and formal wage labour through and alongside racialisation. This encompasses essential yet devalued feminised social reproduction work - the social organisation of which is rooted in colonial dispossession and racialisation, as well as patriarchy (Mies, 1998; Federici, 2004; Bhattacharyya, 2018)). It also engages with how surplus populations are produced through and alongside processes of racialisation. If, as Marx makes clear, ‘disposability’ is a key feature of the reserve army (1976, p.784) - or surplus population - racial capitalism contends that race is a key means through which such disposability is culturally, socially, and politically inscribed into particular

bodies. Rooted in the legacies of slavery and colonialism, race has therefore historically served, and continues to serve “as a mark of membership in the surplus labouring population” (McIntyre, 2011, p.1489). Through diverse, intersecting cultural and material processes that mark certain groups as disposable, dangerous, burdensome, or sub-human, racialisation creates the conditions for certain groups to be strategically included in and excluded from standard economic activity – as well as defining the terms on these populations are in/excluded. These processes of racialisation are often tied with migration politics, particularly in nations with a colonial history. Here, the state uses racialised and racialising techniques of categorisation, bordering, enclosure and displacement to “regulate populations it deems surplus” and “create new opportunities to extract profit” (Bird & Schmid, 2022). Indeed, as well as helping create surplus populations, race further shapes how those surplus populations are organised and disciplined through these techniques; race therefore becomes a central organising principle of the political economy of capitalism itself (Wilson Gilmore, 2002; Farris, 2019).

Processes of racialisation are particularly called upon during economic crisis. The reanimation of boundaries around populations deemed worthy and disposable, deserving and undeserving, and productive and unproductive becomes a ‘fix’ through which new sites of accumulation by dispossession can be generated (Wilson Gilmore, 2002; Melamed, 2015; Tilley & Shilliam, 2018). Racialised and racialising discourses provide justificatory logics through which dispossessing processes take place: from state abandonment and/or violence, to displacement and bordering; from economic exclusion to the enforcement of predatory debt. The politics of scarcity that come with crises of capital particularly intensifies and re-animates racial boundary-making around socially differentiated populations. The work of Gargi Bhattacharyya (2018) and Suzi Hall (2021) on the territories, populations and economies of the ‘edge’ is useful here, as it expands the Marxist category of ‘surplus’ *beyond* an economic location, adding theoretical texture to how surplus populations are spatially, culturally, socially and politically made under real existing capitalism. As this thesis will explore, surplus populations do not just exist on the edge of the economy, but on the edge of a range of rights-conferring categories; worker, employee, citizen and human:

Edge economies are located in the expanding terrain of redundancies and casualised employment; they surface *where* the effects of the dispossession of work are most likely to be located, and they reveal *who* is most likely to be affected?

(Hall, 2021, p.88)

These theories of 'edge' is developed through an analysis of post-2008 cities, where access to formal, regular employment (i.e., the category of 'worker') shrinks, and racialised populations become subject to an increasingly brutal matrix of state and capital-driven exclusions (like immigration regimes, gentrification, and increased policing). This produces an expanded pool of exploitable labour, available to be absorbed into new labour regimes - including the predatory platform labour model: "the emerging labour surplus is now compelled to find work in new forms of casualisation - en masse, digitalised and detached" (Hall, 2021, p.105). Edge populations do not exist firmly on either side of the boundary between 'worthy' and 'disposable'; they dance precariously around it (Strauss, 2019). Bhattacharyya draws on Sassen's (2014) work on expulsion, and continuing threat of expulsion, as an underlying and often disciplining, logic of the global economy. This category of the edge population – a "location as almost included and yet on the boundary that constitutes one (often if not always) racialised economic position" (Bhattacharyya, 2018, p.27) – is defined by existence on the boundary of expulsion.

Here, the city is a key strategic site through which racial capitalism is reproduced; with their large migrant and racial minority populations, and the presence of complex systems of racialised violence, exploitation, dispossession, and discipline (Simone, 2016; Hall, 2021), so-called 'world-class' or 'global' cities both produce and rely upon the pools of racialised, cheap labour provided by surplus populations (Bhattacharyya, 2018; Picker et al., 2018). Race therefore becomes a means through which surplus 'edge' populations are re-organised across and within borders, thereby restructuring space in ways that generate newly exploitable formations of labour power. The (dis)engagement of surplus populations through racialised and racialising processes therefore becomes a 'racial fix' employed in the wake of crises (Mumm, 2017; Knox, 2020).

Connecting the Platform Fix and the Racial Fix

There are strong echoes between the platform and racial capitalism literatures: both are preoccupied with how capital (re-)organises labour during crisis through processes of (re-)categorisation. On one hand, critical platform scholars situate platformisation as a response to capitalist crisis through renegotiating worker categories and subsuming surplus populations. On the other, racial capitalism scholars situate racialisation as a "fix or an amplification" (Bhattacharyya, 2018: p.9) through differential exploitation of labour-power through classification, and the marking of surplus populations. In turn, the cities that provide key strategic sites for the growth of the platform economy are often marked by sharp racial and migrant divisions of labour and infrastructures of racial violence; indeed, the urban sectors being platformised, like domestic work and taxi driving, are those historically dominated by migrant and/or racialised workers.

Yet, the role of race and migration politics in producing platform workforces remains an underdeveloped part of the platformisation story (van Doorn et al., 2020). When race is addressed, it is through a 'discrimination' framework; for example, unpacking how ratings-based algorithmic management aggregate social biases, disproportionately impacting racial minorities and migrants (Rosenblat et al., 2016; Edelman et al., 2017; Hua & Ray, 2018) and highlighting the impotence of anti-discrimination law in protecting platform workers (Belzer & Leong, 2017). Rogers (2016b) and Hua & Ray (2018) explore how this compels minorities workers to engage in 'identity work' (Carbado & Gulati, 2013) to overcome racial stereotypes and retain acceptable ratings. There is less focus on how platformisation itself relies on and engenders racial and migration politics in its transformation of work - this is despite growing literature on the centrality of race in establishing how labour is situated, regulated, and valued. Notable exceptions to this trend include recent works by van Doorn et al. (2020), van Doorn & Vijay (2021) and Altenried (2021) and collaborators (Altenried et al., 2021), which explore how migrant labour is structurally embedded in the emergence of platform gig work across geographic contexts, and Dubal (2021)'s work on platforms as a mediator of racialised differentials in working conditions. This thesis empirically and theoretically builds on this nascent literature.

This broader theoretical underdevelopment is continuous with how both technology and capitalism have been conceptualised in academic and popular imaginations. In Orthodox Marxist scholarship, accounts of capitalist modernity and class composition efface the inherently racialised /ing mechanisms that exist within them (Virdee, 2019). This trend has been identified and critiqued by the Marxist-Feminist (Davis, 1983; Mies, 1998; Federici, 2004) and Black Marxist (Jones, 1949; Fanon, 1968; Sivanandan, 1976; Miles, 1982; Bhattacharyya, 2018) literatures as a problem of epistemological Eurocentrism (Anievas & Nişancıoğlu, 2015). This has created a problematically 'race blind' tradition of theoretical approaches when it comes to historicising actually-existing capitalism. Here, race and racialisation are situated as epiphenomenal, rather than integral to and co-constitutive of, capitalist formations. In sum, the underemphasis of race in the platform capitalism literature is an inheritance of a longer history of capitalism being deracialised in Orthodox Marxian scholarship.

In public imaginaries, technology is often seen to offer a neutralising touch to social inequalities such as race, gender, and citizenship (Crawford, 2021). There remains an association between technology and objectivity or neutrality; technological fixes are purported to remove the 'human' - and therefore human bias - from decision making processes. Indeed, Uber capitalises upon this techno-solutionist promise; Ben Jealous (2015), former CEO of the National Association for the Advancement of Colored People (NAACP) and

partner at Kapoor Capital, an early investor in Uber praised “ridesharing companies” as “more colour-blind” than traditional taxi services. This is exemplary of the logic that racial thinking can be ‘designed out’ of algorithmic, data-driven technologies. Scholars working on race and technology have critiqued this assumption (Noble, 2018; Wang, 2018; Benjamin, 2019; McMillan Cottom, 2020). They demonstrate how data-driven technologies are shaped by the social values in which they are financed, designed, developed, and deployed - and vice versa. This includes racial hierarchies, categories, and formations, which are not only reflected and reproduced, but can be recreated by technology. Yet, data-driven systems are perceived as “more objective of progressive than the discriminatory systems of a previous era” (Benjamin, 2019, p.23), concealing their racialised and racialising effects.

The race-neutrality of technology is also shored by how racism is understood to be and look like in the public imagination – typically as highly mediatized, visual spectacles of racial violence and stereotyping. Racism is conceived to exist when racist imagery or language can be seen or heard - or, when an action or decision is traceable to an individual’s racial prejudices. Within these parameters, the ways race co-constitutes technology - through “proxies, correlations, inferences” (Phan & Wark, 2021, p.4) - are not intuitively legible as racial in the public sphere. The work of Mbembe has also explored theoretically how race and racism exist differently under ‘computational capitalism’ (2019a; 2022) - especially how algorithmic technologies intersect with race as a technology that confers “differentiation, classification, and hierarchisation aimed at exclusion, expulsion and even eradication” (2017, p.24). Yet still, the dominant framings of concepts central to this paper - ‘racial’, ‘technology’ (and, by extension, ‘platform’) and ‘capitalism’ - converge to create theoretical blockages between them.

Race, Labour and Platform Urbanism

The urban is a central site of analysis in both the platform capitalism and racial capitalism literatures. Large cities in particular hold the existing VC investment, urban infrastructure and consumer demand required to generate rapidly scale-able network effects, making them key sites of experimentation and/or development for platform companies (Artioli, 2018; Hodson et al., 2020; Sadowski, 2020b). In turn, major cities with large infrastructural and service-based workforces, sizeable migrant and racial minority populations and complex infrastructures of violence, dispossession and discipline (Sassen, 2010; Pulido, 2016; Byfield, 2019) are key flashpoints in the (re)production of racial capitalism (Hall, 2021). Many of the racialised surplus populations, from which platforms draw their workforce, are located at urban sites, and disciplined/dispossessed through urban processes (Wilson Gilmore, 2007; Bhattacharyya, 2018). Sassen’s (2010) concept of the ‘global city’ is useful here – as heavily networked, socio-economically polarised sites, global cities have the key ingredients required for corporate platforms to thrive: middle- and higher-income

users with disposable income, low-wage workers typically subject to complex systems of racialised violence and discipline, a global financial sector, high technology infrastructure, proximity to other technology companies and potential for massive network effects. Whilst geographers have offered valuable critical engagement on the limitations of the global city concept (Shatkin, 2007), it retains strategic salience from the perspective of global corporate platforms: cities like London and New York are often the first cities new platforms launch in. For a corporate form embedded in speculative financial chains, success in 'global' cities is important for platforms to be understood as having 'global' potential (Sawers, 2012; Brail, 2022).

The relationship between platformisation and urbanism is co-constitutive. Extending Artioli's formulation that "digital platforms are an urban phenomenon" (2018, p.2), Sadowski argues "the influence goes both ways: cities are also being reshaped by platforms" (2020b, p.3). This co-constitution is the subject of an emerging platform urbanism scholarship (Taylor-Buck & While, 2015; Shaw & Graham, 2017; Ferreri & Sanyal, 2018; Barns, 2020; Pollio, 2021). This includes an infrastructural turn in platform studies - with scholars like Bauriedl & Strüver (2020) Hodson et al., (2020), Leszczynski (2020), Shapiro (2021) looking at how platformisation is transforming urban infrastructural services. Sadowski (2020b) contextualises the platformisation of urban infrastructure in Peck's concept of "austerity urbanism" whereby the 2008 GFC triggered cities, especially in the Global North to "prune budgets while moving to leaner operating models, driving new rounds of innovation in outsourcing and privatisation" (Peck, 2012, p.629). This context of underfunded, outdated urban infrastructure has facilitated the outsourcing of these services to the platform economy - with the presence of an on-demand, digitally accessible infrastructural workforce becoming central to cities remaining competitive (Taylor-Buck & While, 2015).

This thesis builds on this infrastructure and platform urbanism scholarship by forefronting questions of race and labour. Whilst there is interest in how platforms increasingly organise infrastructural services in cities, the question of *who* is doing this work, how this workforce is produced and how this constitutes one of the ways platformisation is reconfiguring urban socio-spatial relations, needs further development. Examples of existing work include Richardson's (2018) feminist geographic approach to the digital transformation of work; Altenried (2019) on how the insertion of platforms into 'last-mile' logistics is reconfiguring both urban space and labour conditions; and Graham on the working conditions that emerge out of the contradictory and conjunctural geographies of platform urbanism, which tethers and untethers platforms to space (Graham & Anwar, 2018; Graham et al., 2017; Graham, 2020) and Silver (2000) on labour regimes emerging to "service, maintain and fix the vital infrastructures" (p.55) that allow urban dwellers in African cities to access the platform economy. Yet, there remains a tendency, as Strauss summarises, of "scholarship on infrastructure [having] relatively little to say about labour" (2019, p.7). This thesis' focus on

infrastructural labour builds on interventions by Gidwani (2015), De Coss-Corzo et al., (2019), Simone (2021) and Stokes & De Coss-Corzo (2023) - defined not only as the work of creating and operating infrastructure, but also *performing* infrastructure; not only the labour of infrastructure, but labour *as* infrastructure (Nelson & Bigger, 2022). This approach is reflected in this thesis, which takes the on-demand labour of Uber drivers transporting people around the city, and Bubble workers caring for children as urban infrastructural labour. In doing so, the boundaries around both infrastructure and work are contested - conceptions of urban infrastructure are expanded beyond “the physical body of the city, its connective tissues and systems of circulation” to consider “the labour of social infrastructure” (Strauss, 2019, p.6). The exclusion of social reproduction from definitions of infrastructure and work speaks to concerns in the platform labour literature around legal and cultural definitions of work – and how this boundary (re)making creates new, intensified forms of precarity.

This thesis follows the call of De Coss-Corzo et al., (2019), Andueza et al., (2021) and Simone (2021) to deploy an embodied approach to analysing infrastructural labour, which would “allow human bodies to become visible in infrastructure labour [and] open up avenues for exploring how bodies - in their racialised, classed, gendered, aged forms - constitute infrastructural systems” (De Coss-Corzo et al., 2019, p.21). This is especially salient when studying platforms, where worker bodies, needs and personhood are concealed behind the slick operation of an app (Badger & Woodcock, 2019). An embodied approach creates avenues for understanding the processes of differentiation that produce particular working bodies and their relationship to the city and others in it; it invites an understanding of how the spatial, temporal *and* conceptual of this work shapes people’s “bodies, relationships, life schedules, economic practices and the urban fabric itself” (De Coss-Corzo et al., 2019, p.21). From a racial capitalism perspective, this allows for platform urbanism to be thought of a site where “interactions among bodies and materials [engender] new constellations of sense and capacity” (Simone, 2021, p.1343) - including of racial difference. Racialisation shapes and is shaped by how different bodies are organised through and alongside the infrastructures of platform urbanism.

Within this scholarly context, a racial capitalism framework can enrich understandings of platform urbanism, and how platformisation is reconfiguring urban socio-spatial relations through its reconfiguration of labour (Anderson, 2017b). Indeed, the infrastructural and social reproductive sectors platforms are intervening have particular gendered and racialised histories. Infrastructural labour is typically undervalued, risky, invisibilised and degrading, despite being essential - contradictory dynamics that are mediated via racialised, gendered and classed ideologies (Strauss, 2019; Corwin & Gidwani, 2021; Stokes & De Coss-Corzo, 2023). Indeed, from logistics to urban service provision, there has been increased attention amongst

geographers to how “regimes of racialised labour” underpin how value is created and captured through the infrastructures of capitalist production (Zeiderman, 2020, p.454). In turn, changes in the organisation of infrastructural labour shape social relations by changing how racialised surplus populations move through and exist within the city. Yet, the role of social differentiation as an organising principle of platform urbanism remains under-theorised in the platform literature - and in turn the way platform urbanism is reshaping the relationship between race, labour and mobility has yet to be fleshed out in the racial capitalism scholarship. Part Four ‘Labouring Platform Infrastructures’ teases out the relationship between race, labour and platform urbanism, observing how the racialised production of surplus populations, the rise of platform precarity and the reconfiguration of urban sites are connected.

The Platform City Promise

How have platforms accrued such power in urban infrastructural labour sectors? The cross-disciplinary literature on this is vast, but the element this thesis primarily draws upon is the cultural story platforms tell of themselves: how the promises they make shape their take-up by key urban stakeholders. Indeed, platforms reconfigure urban space and social relations through material re-organisation of infrastructural labour, but *also* through the cultural story through which this material re-organisation occurs. The platform promise is produced by two, contradictory narratives, which situate platforms as both revolutionary techno-fixes and neutral intermediaries:

i. Platform as techno-fix

The appeal of techno-fixes to politicians is extensively addressed by urban studies scholars critiquing ‘smart city’ rubrics - an umbrella term for conceptual developments in urban planning, whereby deploying new Information and Communications Technologies (ICT), including platforms, are prioritised as responses to complex urban issues (Angelicou, 2014). Urban scholars have highlighted the limitations of promoting ‘smart’ technologies as “a silver bullet for urban problems” (Taylor-Buck & While, 2015, p.541). The conceptual groundwork of the ‘smart city’ contextualises why inserting algorithmic platforms into infrastructural services becomes compelling to key stakeholders post-2008 GFC (e.g., governments, workers, VC and service users); “platform urbanism”, Caprotti et al., (2022) argue, “is an evolution of the smart city, constituted by novel digitally-enabled socio-technical assemblages that enable new forms of social, economic and political intermediation” (p.1). The difference is that platform urbanism *begins* with the platform, which is envisaged as applicable to *any* city; the ‘smart city’ was concerned with *adding* digital infrastructure to existing cities, with each having their own ‘smart city’ vision.

Yet, urban scholarship on 'smart cities' as an urban socio-technical imaginary remains relevant for platform urbanism. As an urban socio-technical imaginary, smart cities/platform urbanism are defined less by concrete technological practices, and more by a set of tropes and promises - a *story* - about what technology is, and what role it should play in how cities run. Using conceptual constructivist science and technology studies (STS) scholars like Jasanoff (2015) and McNeil et al. (2016), Sadowski & Bendor (2019) understand the *practice* of deploying technological systems to co-constitute scientific and technological imaginations governing them. What technologies are made and why, and how technologies are used, is shaped by visions of what technology is and can do. Socio-technical imaginaries construct future visions of urbanism as inevitable, yet their success "relies on their fit with existing cultural norms and moral values, social structures and material infrastructure, political institutions and economic systems, and hopes and aspirations" (Sadowski & Bendor, 2019, p.544). Despite their future-based orientation, such imaginaries structure present activity: they "[offer] a rationale for society's long evolutionary course while also constraining that society to performing the imagined lines of the story" (Jasanoff, 2015, p.28). This imaginary is constructed not just by governments, but by firms - technology companies IBM and Cisco were early promoters of the 'smart city' to governments (McNeil, 2015; Pollio, 2016; Sadowski & Bendor, 2019). Yet, this imaginary is not frictionlessly executed - like all sites of power, it is contested and resisted.

The socio-technical imaginary of 'smartness' hinges on perceived 'intelligence' of data-driven, algorithmic technology: by collecting and processing vast amounts of data, smart technologies (like platforms) can "autonomously, appropriately and promptly" (Sadowski & Bendor, 2019, p.541) respond, in real time, to a complex problem (Kitchin, 2014). Poon outlines how this perceived intelligence creates particular social, cultural and political investments in 'smart' algorithmic technologies:

Unlike its industrial predecessors, the algorithm as a machine does something different than a physical mechanical system, which simply repeats the same action over and over....The algorithm has a kind of flexibility in its structure, through math, that allows it to execute action with a degree of responsiveness. And that internal mathematical structure allows it to adjust output depending on changing input conditions

(2013, n.p)

From this emerges an association between 'smart' technology and efficiency, objectivity and cost-effectiveness - the smart city promise is a smoothly-operated, optimised urban future, unmoored from imperfect, subjective judgements and interference by human actors (Kitchin, 2014). Smart technologies

promise to not only order, profile and optimise the existing world at unprecedented scale - but processing extracted data can build predictive models that anticipate *future* behaviour (Mbembe, 2019a; Jasanoff, 2020). Platforms draw on the narrative basis of smart cities - and their associated vernacular of the techno-fix - to win power in cities (Carr, 2013; Pollio, 2016); the promise narratives of the techno-fix provide conceptual groundwork for the platform fix. This thesis examines how these promise narratives shape the take-up of platforms like Uber and Bubble. This builds on interventions by critical STS scholars (boyd & Crawford, 2012; Poon, 2016; Gürses et al., 2016; Beer, 2017; Crawford, 2021) that bridge the gap between the *mythology* of data-driven 'smart' technology - the belief "large data sets offer a higher form of intelligence that can generate insights that were previously impossible, with the aura of truth, objectivity and accuracy" (boyd & Crawford, 2012, p.663) - and their embeddedness within urban infrastructure.

ii. Platform as intermediary

Despite far-reaching implications of applying platform logic to organising urban infrastructural labour, platforms downplay their role in transforming social relations, promoting themselves as neutral tools that connect pre-existing actors, thereby devolving risk and cost to these actors. Platforms legally and culturally self-define as intermediaries, thereby distancing themselves from the relations they produce (van Dijck et al., 2018; Graham & Anwar, 2018; Graham, 2020) - a conceptual obfuscation Gillespie calls 'the politics of platforms' (2010). Indeed, the platform economy originated as the 'sharing economy' (Slee, 2016) - whereby people do not hire one another for services, but 'share' existing assets (their car, their spare room, their time) through the platform. Uber is not a taxi company, but a 'ride-sharing' company; AirBnB is not a housing provider, but a 'home-sharing' company (Ferreri & Sanyal, 2018). Whilst the 'sharing' framework does not work seamlessly for Bubble, due to the ambiguity of the 'asset' being shared, its terms and conditions do clarify that:

The App connects Sitters with Parents. When a babysitting appointment is booked, a binding agreement is created between the Sitter and the Parent. Bubble is not party to that agreement. Bubble does not and cannot control either the Sitter or the Parent, the services provided (or not provided) or the quality or timing of those services and disclaims all liability for such.

("Terms of Use", 2019)

The literature connects this cultural story to "technological tropes" (Cockayne, 2016, p.75), in which the 'digital' is imagined in public culture as apolitical (Gillespie, 2010; van Dijck et al., 2018), and uncritically

associates digital mediation with individual empowerment. The story holds that there are people with cars or care experience/capacity and spare time, and people willing to pay a small fee to 'share' this resource - the platform merely provides a communication channel through which these pre-existing entities can efficiently connect in a mutually beneficial transaction (Slee, 2016; van Dijck et al., 2018). Here, cultural discourses of 'sharing' and 'helping out' rebrand capitalist relations as convivial exchanges between parties (Slee, 2016; Ferreri & Sanyal, 2018). Through this "technological exceptionalism" (Rosenblat, 2018, p.27), platforms have restructured labour and urban infrastructure without being held to sectoral regulations or shouldering the risk and costs associated with providing infrastructural services, enabling them to dominate sectors at an unprecedented pace. Mobilising this contradiction - what Graham (2020) calls 'conjunctural geographies' - of being both embedded in the spaces they reconfigure, and disembedded through ideologies of technology companies as 'above' geography (i.e., local laws, regulations, accountability or obligations) is central to platform power.

This thesis builds on platform urbanism scholarship, which situates platforms as not merely digitising *existing* relations, but as creating new urban actors, expectations and cultures of labour (Ferreri & Sanyal, 2018; Graham & Anwar, 2018; Leszczynski, 2020; Sadowski, 2020b, 2021) - specifically focusing on how this shapes and is shaped by racialised social relations. As van Dijck et al., (2018) summarise, the framing of platforms as "simply technological tools that allow [people] to do things online" conceals a "system whose logic and logistics is about more than facilitating" but actually "shapes the way we live and how society is organised" (p.9). This splintering of urban infrastructure into layers of intermediaries that evade accountability and devolve costs and risks to individuals is not new; platformisation consolidates a longer trend of neoliberal privatisation and commercialisation of urban infrastructures through outsourcing to private intermediaries (Guy et al., 2011).

By mobilising the story of platforms as both techno-fixes *and* intermediaries, platforms make strategic promises to key urban stakeholders. To workers, it promises to be an "engine of economic populism" (Rosenblat, 2018, p.26), offering autonomy over time and income. Following the insecurity and dispossession wrought by the 2008 GFC, platforms-as-intermediaries promise to empower workers by enabling them to 'be their own boss', without having to rely on institutions that have shown themselves to be fragile (Peregrine, 2016). To high-level politicians promoting austerity, it promises a cheap, efficient way of outsourcing infrastructural service provision – one that uses existing resources and absolves governments (through their intermediary status) from direct responsibility for providing essential services (Pollio, 2016; Devlin, 2020). To venture capitalists, it promises new sites of low-investment capital accumulation via data

collection, processing and analysis (van Doorn & Badger, 2020). Finally, to customers, platforms promise cheap, essential services on-demand and tailored to their needs.

It is through these promises that new urban actors, relationships and expectations are cultivated. Drawing on interventions in urban studies and critical STS, this thesis explores how the platform city promise both shapes and is shaped by racialised formations. The chapters under the heading *Labouring Platform Infrastructures* unpack how the platform city promise of flexible and frictionless infrastructures relies on racially-mediated ideologies of worker disposability, interchangeability and dehumanisation.

Theorising Racial Platform Capitalism from the Standpoint of London

Having outlined the theoretical relevance of the urban, this chapter finishes by grounding the research questions in their urban empirical context - London. A racial capitalism framework urges spatio-temporal specificity in its analysis - it is based in the claim that capital accumulation adapts, exploits and (re)produces local social differentiation processes to produce particular kinds of workers. It emphasises the combined and uneven dynamics underpinning capitalist development, which unfolds in spatially and temporally variegated, yet interdependent ways (Wilson Gilmore, 2002). This counters the ideological promise of platformisation as overcoming the “tyranny of geography” (Anderson, 2010, p.162). Bound up with the neutralising touch of technological solutionism, platforms promise uniform user experience in *all* locations - despite also being ‘hands-off’ intermediaries. Platforms lobby for “regulatory flattening” (Ferreri & Sanyal, 2018, p.3360), to reduce potential confrontations with place-based regulation that throttle their entry in new territories; rapid scale requires “minimal adaptation to maximise profit” (Taylor-Buck & While, 2015, p.504). These claims are based in requiring and producing a “top-down strategy of ‘model legislation’ transferrable from one city to the next” (Ferreri & Sanyal, 2016). Mobilising the neoliberal adage of state regulation as an enemy of enterprise, innovation and freedom, the political economy of platforms is based in “regulated deregulation” (Albers, 2016 qtd. in Ferreri & Sanyal, 2016, p.3354). Yet, scholars must avoid internalising these spatial flattening claims; a geographic approach situates platform companies as both shaping and being shaped by the sites they move through. Corporate platform companies seek to endlessly expand their operational territory - yet are constantly being (re-)made in grounded sites.

In turn, Strauss (2019) situates labour geographers as uniquely positioned to contribute to racial capitalism literatures. In line with Wilson Gilmore (2002) and Bhattacharyya (2018), Strauss argues for a geographic approach that theorises racial capitalism(s) *from the particular standpoints from which they emerge*. This considers the cultural, social and political scripts producing and being produced by racial fixes at particular sites – as well as the economic (re-)organisation of racialised labour markets. Racial platform

capitalism requires understanding the *contexts* in which the platform economy is being continually (re-)made - including the labour and social relations through which its norms are being (re-)developed - thereby shedding light on how platforms reconfigure and are reconfigured by the spaces through which they move.

The site of this thesis is London - a historically colonial core, the legacies of which live on in the capital's highly racialised division of labour (Sivanandan, 1976; Wills et al., 2009). As a major 'global' city, it is a key site in the experimentation and development of platforms wishing to achieve 'global' status - as outlined earlier, success in such cities is considered valuable in VC profiles. London was one of the earliest cities Uber entered. In turn, Bubble operates primarily in London - it has some presence in other British cities like Edinburgh, Manchester and Bristol, although low worker supply inhibits its ability to embed in the childcare infrastructure ("Bubble for Uber", n.d). Both examples speak to the role of cities like London in platform company rosters - they provide the material and social conditions and have the 'global' reputation desired by a business model based in speculative value. Yet, the status of London as a 'global' city is connected to its history as a metropole (King, 2015), making it a rich site for analysing the intersections between racial and platform capitalism. A grounded analysis of how these two phenomena operate in London illuminates a key context in which platformisation and racial capitalism - hence racial platform capitalism - are constituted and reconfigured by one another.

The history of racial capitalism, labour segmentation and the production of London contextualises the conditions through which platformisation has unfolded in the city. Whilst its composite demographics have varied, Britain has had a "multi-ethnic proletariat from its inception" (Virdee, 2019, p.16). Racialisation has shaped class formation from early 1800s Irish migrations (Hobsbawm, 1999) to the early 20th century racial marking of Jewish workers (Virdee, 2017), to the racial division of labour formed through Windrush migrations (Shilliam, 2018). There are three key moments of racialised class formation in Britain following the Second World War: the post-war welfare settlement, 1970s-80s deindustrialisation and post-2008 austerity regimes. At each moment, this reconfiguration was experienced as racial fixes - as racialised inclusions and exclusions within and from the labour market (Bhattacharyya, 2018). Mass labour shortages that accompanied the expansion of Britain's post-war economy relied on the recruitment of Windrush migrants into the poorest conditioned work of a highly segmented, racialised labour market (Ramdin, 1987; Banton, 1998; Brown & Miles, 2003). Similarly, as Virdee (2006) observes, whilst fallout of deindustrialisation during 1970s is often portrayed as race-neutral, it was deeply racialised: the semi- and unskilled manual sectors that collapsed were disproportionately comprised of post-war racialised minorities, who had been recruited as 'fixes' to declining industries. As their primary employers collapsed, many shifted into sub-contracted, insecure and self-employed work. This intensified with the 2008 GFC, which further shrank the

availability of regular work, pushing racialised minorities again to taking up precarious work (Jones, 2012; Bhattacharyya, 2018). The historical composition of the “precariat” (Standing, 2014) so heavily centred in the platform labour literature, has always been racialised in Britain. Downwardly racialised people have historically existed as surplus populations, doing the poorest conditioned work during economic boom, and facing labour market exclusion during economic crisis (Bhattacharyya, 2018; Virdee, 2019).

Bordering has been central to these racialised/ing labour fixes. Decisions over who can enter Britain have historically been articulated in racial terms and have brought groups into being as racialised Others (Goodfellow, 2019; El-Enany, 2020). The first modern immigration control, the (largely unenforceable) 1905 Aliens Act, restricted the movement of Eastern-European Jews to East London, driven by socio-political hostility to “a stream of Russian and Polish immigration...the immigration of the most destitute type” (“Aliens Bill Debate,” 1898). The first comprehensive suite of immigration controls was the Commonwealth Immigrants Acts of 1962, 1968 and 1971, which introduced colour lines to the British Nationality Act 1948 (El-Enany, 2020). The 1948 Act expanded British citizenship to include all Commonwealth ‘colonial subjects’, to retain colonial connections despite impending decolonisation. As people migrated to the ‘Mother Country’ from the Caribbean, Asia and Africa, intense socio-political hostility, articulated through racial difference, led to the Commonwealth immigration acts, which preserved white migration from Australia, South Africa and Canada, whilst limiting movement of downwardly racialised people. This was organised through concepts of ‘belonging’ and ‘non-belonging’ citizens (‘patriality’). ‘Belonging’ citizens (‘partials’) were those who could prove connection to the UK through a grandparent or parent. In practice, this restricted settlement rights to white citizens of settler colonies. Alongside appeasing fears that, as Prime Minister Thatcher put it, “this country might be rather swamped by people with a different culture” (Thatcher, 1978), immigration regimes were also justified on labour protectionist terms: to protect labour market opportunities from racial minorities, on behalf of white British people.

Yet, as Anderson (2010) shows, such controls do not eradicate labour market participation by racialised migrants in Britain, so much as dictate its terms. Restrictions to legal routes to work produce particular migrants as irregular² and/or illegal - a condition that engenders exploitation and precarity, as their ‘illegitimate’ status restricts access to recourse, regulation and formal employment (Rogaly, 2009). Immigration controls therefore *produce* pools of racialised, exploitable low-wage labour that have become

² Irregular migration refers to entering, settling or working in a destination country without all qualifying authorisation or documents, e.g. entering ‘legally’ but settling/staying ‘illegally’ or entering ‘legally’ but working ‘illegally’.

increasingly essential to major urban economies (De Genova, 2002; Flores, 2021). Immigration controls in Britain therefore function:

Both as a tap regulating the flow of labour [and]...as a mould shaping certain forms of labour. Through the creation of categories of entrant, the imposition of employment relations and the construction of institutionalised uncertainty, immigration controls work to form types of labour with particular relations to employers and to labour markets

(Anderson, 2010, p.301).

The intimate relationship between bordering and race in Britain (Balibar, 2009; de Noronha, 2019; El-Enany, 2020), renders this 'mould' a racialised and racialising mould; a "race-migration nexus" that remains in place today (Erel et al., 2016). A central effect of this 'mould' is the *production* - 'fashioning' (Anderson, 2010) - of racialised migrant precarity. Labour geographer Kendra Strauss (2017) understands precarity as a multidimensional conceptual framework - a *condition* of "vulnerability relative to contingency and inability to predict" (Ettlinger qtd, in Strauss, 2017, p.623). For Strauss, precarity refers not only to labour market experience (i.e., non-standard/atypical employment) but extends into a feature of broader life. This includes the compounding precaritisation engendered by irregularising immigration regimes, which hinder the ability of migrants to enter, stay and work 'legally', and access stable housing, healthcare and work. This 'broadening' of precarity as a living condition is articulable through a geographic approach to 'labour' and 'life' as spatial and temporal locations that co-constitute one another (Rogaly, 2009; McDowell, 2013; Strauss & McGrath, 2017; Buckley et al., 2017). The *longue durée* of Britain's racialised distribution of precarity amongst its multiracial working-class dovetails with the rise of platform labour post-2008 (Hua & Ray, 2018). As racialised minorities are first to be expunged during economic crisis, they become reliant on informal sectors for work that are becoming increasingly platformised (Lyon et al., 2011; Phinney, 2020). This includes the sectors of this study: domestic work and minicab work.

This thesis identifies three racial fixes animating post-2008 London that co-constitute the platform fix: 1) the War on Terror, 2) the Hostile Environment and its associated migration frameworks and 3) the 2004 expansion of the European Union (EU) to include former member-states of the Eastern bloc. Ensuing chapters will outline *how* these phenomena operate as racial fixes. However, to briefly summarise: each 'fix' represents a racialised group coming into being through a convergence of material change and cultural and political processes. The War on Terror, as explored in Chapter Six, sees men of varying ethnic and migration backgrounds brought into being as 'brown' through racialising discourses of security and terror. The Hostile Environment refers to a policy framework introduced in 2012 by then-Home Secretary Theresa May, that

aims to make life impossibly difficult for people who cannot demonstrate fully legal migration status, requiring immigration checks for accessing basic services, including housing, healthcare, work and education (Liberty, 2019). Alongside restricting regularised/regularisation paths for non-EU migrants (apart from the wealthiest or to fill specific job shortages), this has resulted in the marginalisation of Global South migrants living in London from public life and infrastructure (Gutiérrez-Rodríguez, 2010; Goodfellow, 2019). The Hostile Environment is not just a circumscribed set of policies that institutionally excludes migrants from 'non-white' countries - it is also a set of racialised and racialising state discourses that situate particular migrants as Others to be feared, contained and expelled. Finally, the 2004 expansion of the EU was accompanied by racialised and racialising moral panics - mediated via state and media discourses - which marked Eastern-Europeans as inherently 'different' to British people and other EU migrants (Fox et al., 2012; Drnovšek Zorko & Debnár, 2021). Whilst Eastern-Europeans were granted legal right to move and work in Britain, their *ability* to do so was shaped by their racialisation as culturally inferior, unsophisticated and disruptive (Portas, 2018). Racialised labour market exclusions saw them disproportionately concentrated in low-wage, insecure work like construction, domestic work and hospitality (Spigelman, 2013). The perceived inability of Britain to assert borders against migration constituted as racially different featured heavily in 'Leave EU' campaign, which successfully ended in Britain withdrawing from the EU in 2016 (Gove, 2016).

In conclusion, bringing the platform labour, racial capitalism and platform urbanism (specifically regarding infrastructure) scholarships into conversation with one another develops concerns expressed in all three literatures. Not only are the socio-spatial and labour relations proliferating under platformisation deeply connected, but situating these shifts within the context of racial capitalism is necessary to understanding how racial capitalism itself is operating in a changing world. By bringing these three literatures together, this thesis responds to Strauss' recent call to action for labour geographers to employ a "labour-centred approach to social infrastructures grounded in racial capitalism" as a pathway to engaging with "other processes and debates shaping labour geographies" (2019, p.4). In doing so, this thesis aims to provide key theoretical and empirical insights into the labour of platform urbanism, and the socio-spatial relations through and alongside which it is being (re)made.

-2-

The Challenges of Platform Work Ethnography

Qualitative workplace studies have a long sociological history because of the centrality of work in people's lives (Hodson, 2004; Burawoy, 2013). The unique capacity of qualitative methodologies to unveil the "practice aspects of labour" (Glöss et al., 2016, p.3) critically illuminates work as it is experienced. Workplace ethnography has developed understanding of how different forms of work shape and are shaped by their socio-spatial conditions of emergence – they have been prominent in sociology and geography as they shed light on the spaces we spend most of our daily lives. However, research interest in forms of work that resist traditional workplace ethnography is expanding, and how scholars can methodologically adapt is under-theorised. This refers to forms of work that problematise central conceptual units of workplace ethnography - namely bounded ideas of workplace, working time, worker and work itself. Included in this is platform work, which represents an increasing sector of the urban economy.

This chapter explores how platformisation challenges the norms of workplace ethnography. By surveying existing methodological strategies, it evaluates the benefits and limitations of strategies thus far deployed by social scientists in existing platform work ethnographies. After outlining why ethnography is a critical tool, theoretically and empirically, in studying platform work, it explores the spatio-temporal and conceptual challenges platforms pose to traditional workplace ethnography. It then evaluates responses to these challenges, drawing on twelve existing platform ethnographies (Appendix 3) – selected for their discussion, albeit brief, of methodological struggles and strategies. Through an evaluative survey of these ethnographies, this chapter analyses the methodological innovations scholars have thus far developed when studying platform work.

Historical uses of workplace ethnography

Workplace – or 'organisational' –ethnography emerged from a Fordist model of organising work. Goldthorpe's formative 1961 Affluent Worker Study and Benyon's 1973 Working for Ford both took place in car factories (Edwards, 2014). In both, the researcher's immersive participant-observation in the workplace, and strong relationships with key informant workers, produced worker-centric narratives of class formation in the car industry. Over the following decades, workplace ethnography proliferated across factory-based sectors (Pollert, 1981), to collectively illustrate "factory class consciousness" (Benyon, 1973, p.108).

Traversing spatio-temporal and sectoral contexts, these studies critically analysed this kind of work and workplace and situated it within broader theories of structural change.

As factory-based work declined in the Global North from the 1970s, ethnographies of white-collar workplaces began to emerge (Burriss, 1983; Biggart, 1989; Smith, 1990; Kunda, 1992; Markowitz, 2001; Ho, 2009). In geography, McDowell's ethnographies of Britain's post-war workplaces took her from merchant banks (1994) to the hospitality sector (2004). Her study of interactive service work in the Global North (McDowell, 2009), drew on several workplace ethnographies, including Diamond's auto-ethnography of becoming a nursing assistant (1992), and Sharma & Black's beauty parlour study (2001). However, Badger & Woodcock (2019) identify a general downturn in workplace ethnography in the Global North from the 1980s, noting four causes: the "relative decline of manufacturing, within which many of these studies were conducted"; the "weakening of trade unions" through which researchers often gained workplace access; the "absence of open workplace struggles" making it "appear a less interesting area of research" and the "growth of the service sector" which was "distant from the focus of many academics" (Badger & Woodcock, 2019, p.140). Instead, factory and sweatshop-based workplace studies shifted to the Global South (Lee, 2007; Ong, 2010; Prentice & DeNeve, 2017), where manufacturing has largely been outsourced.

The efficacy of ethnography is credited to researcher embeddedness in workplaces over sustained time periods. Also called "plant sociology" (Burawoy, 1998, p.6), this rootedness in fixed space is central to traditional workplace ethnography; ethnography's unique "depth of observation" (Hodson, 1997, p.1176) relies on researchers being *planted* in the *plant* being studied. Indeed, Hodson defines "appropriate organisational ethnography" as the following (1998, p.1177):

1. The use of direct ethnographic methods of observation over a period of at least six months.
2. A focus on single organisational setting
3. A focus on at least one clearly identified group of workers - an assembly line, a typing pool, a task group or some other identifiable work group

This precludes the study of temporally- and spatially-splintered workforces that have existed at the historical margins and are becoming increasingly ubiquitous. This, alongside gendered ideas around what constitutes 'work', explains the paucity of ethnographies of social reproductive labour, waged and unwaged. The downturn of work ethnography in the Global North is therefore not a novel crisis, but an expansion of the method's historic elision of certain work and workers. Even at its height, workplace ethnography has skewed towards work organised in particular ways, and disproportionately focused on particular workforces

– namely industrial, white male workers. The development of the method in a specific historic and spatial context means its methodological norms are not easily transferable to contexts that historically and contemporarily occur at the ‘edges’ of regular work.

Why develop a platform work ethnography?

Platformisation is increasingly transforming the organisation of work through profound spatio-temporal shifts. Developing appropriate platform work ethnography is crucial for developing new theoretical frameworks that render legible the social and political terrain upon which platform work is being built. This includes, as relevant for this study, how platformisation both shapes and is being shaped by social differentiation processes.

i. Building new concepts

The ability of ethnography to capture social phenomena at a depth inaccessible to quantitative methods (Lofland & Lofland, 1984; Atkinson & Hammersley, 2007). It renders legible how sites are made through narrative, observation and sense-making, which take centre stage in ethnographic data collection and analysis. This inductive approach is particularly suited to the platform economy, where, as a relatively new phenomenon, the theoretical precedents are still emerging. When analysed using a grounded, iterative approach outlined by Corbin & Strauss (1990, 2014), ethnography makes space for the researcher to generate theoretical frameworks where did not exist before.

Ethnography does not claim rigour based on replicability and representativeness, but on reconstruction and reflexivity (Burawoy, 1998). Specific empirical examples are used to create, develop and challenge theoretical frameworks – to ‘reconstruct’ theory, whilst using reflexivity to understand how the researchers’ encounter with the field shapes data collection and analysis. Here, the mediation of data collection and analysis through the researcher’s identity and networks is treated not as a contaminant of data and objectivity, but as data itself (Bourdieu, 1963; Acker et al., 1991; McGarry, 2016) and a source of “strong objectivity” (Harding, 1993). The researcher is not effaced in pursuit of ‘objectivity’ – rather, analysing how the researcher experiences the field enhances research when reflexively and transparently engaged with (Burawoy, 1998; McDowell, 2009) – an analysis of ‘subjectivity’ and ‘objectivity’ that emerges from feminist epistemological frameworks (DuBois et al., 1983; Cop & Kleinman, 1993; DeVault, 1996; Reger, 2001).

The ability of ethnography to inductively build theoretical concepts involves locating broader social relations in the everyday. This hallmark ethnographic principle was developed by workplace ethnographer Burawoy's concept of the 'extended case method' (1998). Here, Burawoy's demonstrated how findings from a workplace ethnography of a Russian furniture factory can help develop Marxist theories about transitions from socialism to capitalism (p.5); or how his autoethnography of being a personnel consultant in a Zambian copper mine can "elaborate Fanon's theory of postcolonialism" (p.5). The extended case method allows researchers to 'extend' what is observed in a case study site to the wider relations the site makes and is made by. The researcher can:

extract the general from the unique, to move from the 'micro' to the 'macro,' and connect the present to the past in anticipation of the future, all by building on pre-existing theory.

(Burawoy, 1998, p.5).

These "extravagant leaps across space and time....from the mundane to grand historical themes" (Burawoy, 1998, p.5) relies on the principle that sites are not self-contained social worlds but enmeshed within social and historical relations. These relations can be identified and understood from granular observation and interpretation. Analysis of highly specific case studies can therefore build towards and upon theory. Burawoy calls this inductive, iterative process, "theoretical reconstruction" (1998, p.20). Here, the analyst works "with a prior body of theory that is continually evolving through attention to concrete cases" (1998, p.27); the case is analysed to "[push] theory forward, or merely make it more complex", while making space for the "discovery of new and surprising facts" (1998, p.28). Given key concepts governing the study of labour are being challenged by platformisation - categories like workplace, worker, work, workforce and management – work sociologists must, as Snyder (2018) argues, re-evaluate core theoretical concepts, "and other taken for granted ways of describing economic life under bureaucratic organising".

The pace of these conceptual shifts also requires an embedded methodological approach. The digital architectures of platforms allow for dramatic shifts in the experience of work to be rapidly meted out. Changes to contracts, the management algorithm, the app's design and terms and conditions, frequently (and opaquely) change in response to regulation, competition or data-led market. The temporal compression of change facilitated by digitisation requires a methodological approach where researchers "witness the continual changes taking place at the platform, and the result on working lives" (Badger & Woodcock, 2019, p.137). Ethnography allows these changes, and how workers experience them, to be

perceived over time, and therefore is a key method for conceptualising and tracking the shifts under platformisation.

ii. Understanding how platform work is experienced, and by whom.

Ethnography gives insight into the situated experience of social phenomena, meaning researchers are less reliant on top-down definitions governing their object of study. This is particularly important when studying work, where there is strong power asymmetry between bosses and workers. Richardson (2018) argues that in the context of platformisation, where boundaries between work and non-work are muddled, researchers are compelled to rely on how work is *experienced* to fully understand how it operates. The regulation, design and conceptualisation of platforms means there are inconsistencies between lived understandings of “being ‘at’ work and ‘doing’ work” (Richardson, 2018, p.245), and how these categories are defined from above. Is, for example, a Care.Com worker ‘at work’ when at home, creating/updating their profile and messaging clients? The answer from a company executive, or in the contract, would likely be different from a worker’s. Working space under platformisation is therefore “constituted by combinations of ‘objective’ fixed working location and the ‘subjective’ senses of work taking place” (Richardson, 2018, p.245).

These spatio-temporal inconsistencies between what constitutes platform work in its lived form and its represented form are intensified by the digital architecture of platforms and political economy of platform companies; platform business models rely on shifting burdens onto the worker and reducing financial liability by concealing parts of the labour process. Ethnography’s ability to give insight into how work is experienced materially, and its impact on the workers’ broader lifestyle is missing from official platform narratives. McDowell’s studies of migrant women workers in post-war Britain (2009) demonstrate how listening to workers narrate their work makes visible the nuances and emotional textures of the working day. Using similar approaches, platform researchers can gain insight into the different forms of labour – waged or unwaged – underpinning the platform economy.

An inductive approach is needed given contestations surrounding what constitutes the workplace. Considering “ethnography as place-making” (Pink, 2008, p.178) helps mark out places from the position of embodied experience. Pink argues that by “following [participants’] routes,” and “attuning our bodies, rhythms, tastes, ways of seeing and more to theirs”, researchers can “begin to make places that are similar to theirs” (p.193). Using Feld and Basso’s formulation that “place is a fundamental form of embodied experience – the site of a powerful fusion of self, space and time” (1996, p.9), Pink (2008) argues the

embodied nature of ethnographic research allows researchers to “understand how others remember and imagine” (p.193) place. So, where spatial boundaries of workplace are ambiguous, ethnography becomes a tool for researchers to propose grounded concepts of platform workplace. Ethnography can give insight into how categories like ‘self-employment’, ‘being your own boss’ or ‘flexible work’ are experienced by workers (Chandler & Malin, 2016; Rosenblat, 2018), alongside worker motivations for entering the platform economy. Existing platform work ethnographies detail the strategies workers deploy to adapt to rapid changes in the platform economy; for example, compensate for informational asymmetry and build networks despite worker atomisation (Rosenblat, 2018; Ticona & Mateescu, 2018).

Surie & Koduganti’s (2016) study of Uber and Ola drivers in India demonstrates how ethnography not only helps researchers understand how platform work is experienced, but also what kind of worker is experiencing it. Using oral histories, where workers discuss how platform work compares to other jobs they have had, the study identifies what part of the workforce platforms are capturing. While surveys could build a sweeping profile of platform workers, Surie & Koduganti show the benefit of collecting worker stories, as it contextualises the changes ushered in by platform work in the lives of those doing the work. For example - how algorithmic management is experienced compared to other management models. They explore how for Uber and Ola workers in Bengaluru, workers being able to take sick leave without “begging” (p.21) a manager creates feelings of ownership unavailable in other jobs. Anderson’s ethnography of Uber drivers in San Francisco (2014b) similarly profiles the conditions and work histories that led participants to platform work, outlining the socio-economic backdrop against which workers make their decisions. The storytelling capacity of ethnography facilitates a holistic understanding of how platform work interacts with other parts of participants’ working and non-working lives; their mental health, social life and familial responsibilities (Anderson, 2014b; Surie & Koduganti, 2016; Rosenblat, 2018). Here, workplace ethnography helps researchers understand the broader social impacts of platform work.

The capacity of ethnographic case studies to capture geographically specific nuances of how platforms operate is also critical for interrogating the claim of platformisation to counter ‘the tyranny of geography’ (Slee, 2007, p.56); platformising urban services implies a “flattening of existing place-based specificities” (Ferreri & Sanyal, 2018, p. 3357). The promise here, is a “uniformity of the work as administered by the ‘same’ – and therefore even-handed – machine learning algorithm” (Badger & Woodcock, 2019, p. 136) – i.e., that working for and using a platform will be the same everywhere. This is part of the broader discursive power of ‘digital’ or ‘smart’ urban branding, which implies transcendence of sociological categories like race, gender and geography (Angelicou, 2014; Viitanen & Kingston, 2014; Rosenblat et al., 2016; Noble, 2018).

Ethnography is also critical for countering the sectoral flattening - 'Uberization' - tendency within platform scholarship, whereby disproportionate focus on Uber has led to parallels drawn between Uber studies and platformisation *tout court*; 'Uberisation' and 'platformisation' of work are employed as interchangeable terms. This not only "[excludes] women's experiences from public understandings of the gig economy" (Mateescu et al., 2018, p.4), but creates theoretically and empirically limited analysis of platformisation. Practices in ride-hailing services are not necessarily transferable to other sectors with different labour and social histories and subject to different regulatory frameworks. As Mateescu et al. (2018) demonstrate in their comparative study of ride-hailing and domestic work platforms, formalisation and algorithmic management are experienced differently across sectoral contexts, partly due to their differentially gendered labour histories. Extensive ethnographic study of platformisation across sectoral and geographic contexts is therefore necessary to understand how practices marketed as universal are experienced differently depending on multiple factors.

This promise of spatial and sectoral 'flattening' is tested by geographic methodological approaches. Using ethnography to unpack geographically-grounded nuances of platform implementation recognises the reality of platform work as a highly contextualised phenomenon. By building a repertoire of case studies, researchers will better understand how platforms shape and are shaped by the political, labour and social contexts of the geographies they enter. As capitalism is underpinned by uneven socio-spatial relations, work ethnographies are a key to researchers "[uncovering] the process that led to uneven development and inequality in labour markets" (McDowell, 2009, p.220). Drawing on Harvey's (2018) work on the geographic unevenness of capitalist development, McDowell highlights work ethnography as key to unpacking how capital interacts with "geographical difference to exploit workers and regions to increase profits" (McDowell, 2009, p.220). The geographic contingency of race is crucial here; if racial platform capitalism understands platformisation to be interacting with local racial and migrant divisions of labour; an ethnographic approach can render legible these interactions in ways that both retain geographic nuance and specificity, whilst adding to broader theory. A grounded ethnographic approach also allows for a plurality of worker voices to be engaged, rendering legible how platform work is experienced by a heterogenous workforce, and how this varies along class, gender and race lines (Surie & Koduganti, 2016; Badger & Woodcock, 2019).

The power of workplace ethnography is the ability to make legible structural processes in local case studies, and integrating how the platform economy is experienced in specific contexts to broader theoretical understandings of labour, social relations and technological shift. For Englert et al. (2020), workplace ethnography offers insight into the qualitative elements of class composition; the social, urban and

economic relations that emerge through and alongside labour restructuring. For McDowell's studies on work and embodiment, ethnography is uniquely positioned to explore how social identities make and are made by work – particularly how social identities like race and gender are mobilised through and alongside work (McDowell, 2009, 2011a, 2011b, 2016; McDowell et al., 2007). Developing a platform work ethnography is therefore crucial to analysing the social divisions of labour through which the platform economy is emerging. This is especially important for the concerns of this research, which unpacks how social differentiation processes track particular populations in platform work, how platform work becomes racialised and how this shapes the conditions of this emerging work model. Qualitative tools help illuminate how sociological categories like gender and race constitute labour relations, drawing a bigger picture of the social divisions of labour in these economies (McDowell, 2009; 2013). Semi-structured worker interviews also provide insight into how workers narrate and relate to their experience and locate themselves in the social worlds being studied (Charmaz, 2006; Fuji, 2017). Ethnography makes legible questions of embodiment, social relations and social context, providing a means through which practices of racialisation and gendering - and how they inform the grounded practice of platform work - can be made visible.

Challenges

Platforms present profound methodological challenges to 'classic' workplace ethnography as it exists in "the research imaginary" (Falzon, 2016, p.27), which emerged from factory or white-collar workplaces. These challenges are temporal, spatial, conceptual and ethical, and grounded in the destabilisation of categories like worker, workplace, working time and work itself. In destabilising these categories through a repertoire of legal, cultural, design and regulatory strategies, the assumptions of workplace ethnography are challenged. Long-term immersion in the field and observation of the same group of workers in a fixed workplace is precluded by the spatio-temporal splintering of platform work. *Where* is the workplace? Is it the home cleaned by the domestic worker? The courier's bicycle? The car driven by the Uber worker? Is it wherever the worker looks at their phone, waiting to be assigned work? *When* does work start? When the worker switches on the app? Or only when they are doing the assigned task? Or whenever they are 'plugged in' waiting for work? *What* is the worker? Is the worker an employee? *Who* is their boss? The client? The app? The company? The algorithm that assigns them work, monitors them and fires them? This is a work model with no fixed workplace, where the worker is not legally or culturally recognised, and the boundaries of work are blurred. Sometimes, the work is not even recognised as work; it is 'sharing' or 'tasking', undertaken by 'taskers' or 'partners'. Given these ambiguities, defining the arena of study becomes difficult; if the subject of study is the workplace, the worker and work, how do researchers reckon with the fact these categories have contested definitions. The answers to these questions are not clear - yet this lack

of clarity illuminates something important: that the conceptual, spatial and temporal splintering of work means the 'workplace' of workplace ethnography cannot be exclusively analysed at the point of production.

Alongside the difficulties of constructing conceptual boundaries around site and participant, the spatio-temporal politics of platforms pose practical challenges to conducting workplace ethnography. Indeed, many challenges faced by platform workers are like those faced by platform work ethnographers. Both struggle to create a cohesive logic of work, worker and workplace when the platform model relies on destabilising these very concepts (Richardson, 2018). As the literature widely acknowledges, the lack of fixed workplace creates difficulty accessing and building rapport with a consistent group of workers (Anderson, 2014b; Bergman & Jean, 2016; Chandler & Malin, 2016; Rosenblat & Stark, 2016; Surie & Koduganti, 2016; Mateescu & Ticona, 2018; Rosenblat, 2018; Snyder, 2018); there is no clear, central site where participants can be recruited and observed. Researcher embeddedness, a key ethnographic principle, is complicated by the "fragmented and ephemeral nature of a workforce dispersed across a city with irregular working times and shift patterns" (Badger & Woodcock, 2019, p.137). However, this is somewhat counterbalanced by the relatively little gatekeeping of the field; whereas management historically has prevented researchers from accessing workers, the remoteness of platform management means workers and researchers, once in contact, can engage with one another unsupervised.

The literature also identifies ethical challenges to conducting workplace ethnography in platforms. This comes down to two related phenomena: the precarity of platform workers, and the opacity of digital footprints left by researcher and worker. Platform workers, especially those relying on platforms for all or most of their income, are not always guaranteed a minimum wage, especially after factoring operational costs (Cornick et al., 2018). They therefore are often operating from a weak socio-economic position. Furthermore, platform workers can be dismissed suddenly, without due process. There is little transparency on what leads to dismissal; Uber drivers have reported being deactivated after publicly discussing the company (Huet, 2014) or being seen at a protest (Rosenblat, 2019). Researchers are therefore dealing with a vulnerable population who, if identifiable to the platform as study participants, could face devastating consequences.

This is particularly pertinent given how much data platforms collect on workers, and the opacity of what data is collected and how it is used. The digital footprints (Lutz, 2019) potentially left behind by researchers and participants during research creates potential ethical risks not legible to ethics review boards or researchers, as they are concealed by the internal workings of private companies. Furthermore, the opacity of data collection and analysis complicates ethnographic principles of informed consent

(Beauchamp et al., 1986), as the worker may not know if information they give to a researcher makes them identifiable to a platform, and therefore not fully aware of the risks being undertaken. Platform ethnographers must be aware of “unintended afterlives” potentially facilitated by the data-driven “organizational reach of large platform companies” (Badger & Woodcock, 2019, p.147). For Kurtz et al. (2017), social scientists conducting ethnographies of digital spaces, or spaces with a digital element, should collaborate with computer scientists, to gain some technological literacy to help mitigate such risks.

The relationship between researcher and subject, where the subject is a precarious worker, presents further ethical dilemma. This is particularly true for platform workers who earn per gig, as any time given to a researcher could otherwise be spent earning money or using what little free time they have to rest; whereas a researcher’s labour and time is likely being compensated for financially and by career progression. Ethnographers have long raised what Gillan & Pickerill (2012) call the “ethic of reciprocity” which looks at how scholars can “justify research that demands time consuming and potentially risky participation in research” (p.133). Whilst Gillan & Pickerill specifically write in context of researching social movements, the principle of risk and time consumption holds when discussing precarious populations. This principle invites researchers to reflect on how they can compensate or “return favours due to” (p.136) participants in creative but appropriate ways. Gillan & Pickerill clarify this is not “a simple and easy resolution to the inequity of power between researchers and research participants” (2012, p.136) – it requires attention to numerous risks around expectations and boundaries between parties. However, the balance between extraction and reciprocity is a challenge platform ethnographers must reflect on throughout the research process.

Researcher Strategies

Given these challenges, what methodological strategies have ethnographers thus far deployed when studying platform work? Drawing on twelve studies, three strategies have been identified: 1) ‘Flash’ ethnography (or ‘ride-along’ ethnography) 2) online forum ethnography and 3) auto-ethnography. Each study deploys one or several of these strategies in its method.

‘Flash’ or ‘ride-along’ ethnography

A common methodological choice in the selected studies is a form of flash ethnography (Borer, 2015), often referred to as ‘ride-alongs’ or ‘go-alongs’ (Anderson, 2014b; Dabbish et al., 2015; Glöss et al., 2016; Rosenblat, 2018). This involves requesting gigs via the app and interviewing workers during the gig. As implied by ‘ride-along’, this strategy began with studies of Uber. In some cases, researchers took the

driver's phone number and conducted follow-up interviews (Rosenblat, 2018). Researchers using this strategy reported its efficacy in accessing a large pool of workers – the largest study of the sample, Rosenblat's book-length *Uberland* (2018), draws on over 400 ride-along interviews. Whilst researchers reported workers as generally open to talking to researchers, often continuing to chat after finishing the gig (Anderson, 2014b; Rosenblat, 2018), workers occasionally declined the interview, in which case the gig continued as normal (Rosenblat, 2018).

A widely cited appeal of ride-alongs is that they enable access to a splintered workforce with no centralised workplace (Anderson, 2014b; Dabbish et al., 2015; Glöss et al., 2016) – although it does require sizeable research budget. Anderson (2014b) and Rosenblat (2018) highlight this strategy's potential for observation. In the Uber context, both researchers conceptualise the worker's car as part of the 'workplace', using their time as a passenger to take notes on the car space as part of the study:

I'd observe the way drivers personalized their cars (or not), or the placement and number of charger cords, whether they provided snacks or beverages for passengers...and whether there were photos, emblems (such as religious symbols), and so on, to help make up these unique workspaces.

(Rosenblat, 2018, p.210)

In a work model where conceptualising spatio-temporal boundaries of 'work' is complicated, Rosenblat's use of observation captures the uncompensated work that happens *around* individual platform tasks. Where 'work' has contested boundaries, Rosenblat draws definitions *from* the field, including activities like providing snacks as labour, given the significance of rating-based automated management. Rosenblat and Anderson use this method to also observe moment-by-moment strategies workers use to navigate their way through the city; what Anderson calls workers' "socio-temporal strategy" (2014b, p.1104). These observations become analytically salient when contextualised "against the background of the economic and organisational demands of their occupation" (Anderson, 2014b, p.1104), and the organisation of the city.

Alongside enabling ethnographic observation of gigs and, to an extent, what happens *around* the gig, this strategy also facilitates the kind of participant storytelling unique to ethnography (Foley, 2002). Dabbish et al., (2015) asked workers to narrate their working day or discuss their best or worst assignments; Rosenblat started informal discussions on how platform work fits into participant's broader life histories (2018). Researchers use this time to discuss biographical matters like work histories and anticipated futures.

Flash ethnography allows researchers to accumulate 'snapshots' of numerous workers, unearthing how they contextualise and understand their work. This data can be collected until saturation is reached (Harrison et al., 2016), creating a holistic picture comprised of small puzzle pieces – facilitating wide-ranging insight, while maintaining ethnographic depth. It also embeds within it a system of remuneration as workers do not miss out on wages by participating, although Rosenblat expanded this by giving all workers – regardless of participation – a 5-star rating (2018, p.211).

However, this strategy lacks the spatio-temporal embeddedness prized by ethnographers (Lofland & Lofland, 1984; Lichterman, 1998; Atkinson & Hammersley, 2007). Rapport and trust with participants is difficult to build during a 30-minute gig, although some researchers took contact details and built a relationship beyond the gig (Rosenblat, 2018; Mateescu et al., 2018). Yet, many workers will be reluctant to give their contact details to a researcher they have just met. Whilst salient data can be drawn from these 'snapshots,' this strategy is limited by an inability to spend extended time periods with the same worker or group of workers. The researcher cannot observe workers going through a range of events or experience change over time. A 'flash' method precludes the relationships of trust between researcher and participant that has given profound insight in traditional ethnographies, as this takes time and connection to develop.

This lack of embeddedness also means researchers only gain access to one part of platform work – the 'task' itself. However, as the literature asserts, platform work exists *beyond* tasks assigned through the app. For example, preparatory work – some of which can be identified, as Rosenblat demonstrates – or the work of constructing profiles, waiting for gigs to be assigned, etc. The researcher cannot observe how workers navigates shifts over a time period longer than the gig, making it difficult to chart how shifts frequently and rapidly ushered in by platforms is experienced from a worker perspective *in real time*. Where the platform workplace comprises multiple spatio-temporal fragments, 'ride-alongs' give insight into only the most visible of these platform work sites. Ethnographers must consider this limitation when using this strategy – remembering that the gig does not constitute the entirety of working space and time in platform contexts.

There is also the question of which sectors can be researched in this way. There is a scholarly bias towards studying the platformisation of taxi driving, rather than, say, care work and sex work. This is potentially accentuated by over-reliance on 'go-alongs'. Intimate work taking place in the private sphere is less suited to this strategy – particularly if it involves vulnerable participants. Here, go-alongs can only be used as an access tool, where participants are informed of intentions through the app. This is also true for workers whose gigs are too short for researchers to gain informed consent or interview – like couriers and

delivery workers. Numerous workforces, particularly those doing feminised work in the private sphere, are therefore excluded from the remit of ride-along ethnography.

This method is further complicated by the researcher also being a client. The impact of this relationship dynamic is briefly explored by Glöss et al. (2016), who conclude that while their “status as passengers obviously impacted the interviews,” this “did not appear to prevent drivers from being critical of their employers or the job” (p.3). However, researchers must be cognizant of how this interaction shapes data in other ways. Firstly, there is the complicated question of consent. The outsourcing of worker management to clients via rating systems means that under platformisation, the client/worker relationship is in fact a worker/client-manager relationship, creating uneven power dynamics. This can be mitigated to an extent by researchers, as Rosenblat (2018) did, explicitly stating they will give 5-star ratings regardless of participation or how the interaction goes. Nonetheless, the researcher must be aware and reflexive of this power dynamic, which is directly related to how platform management design.

Furthermore, this strategy only allows researchers to observe gigs in which they are the client, thereby limiting the range of data that can be collected; most platforms do not allow anyone other than worker and client to be present in a gig. Compare this to traditional work ethnographies of, for example, healthcare workers or beauticians, where the researcher observes how workers interact with a range of clients over a period of time, which has been crucial to developing theoretical frameworks about service work (Sharma & Black, 2001; Bradley & Hill, 2010; Bailey, 2016). Researchers must therefore innovate ways to supplement this popular methodological choice with strategies that provide insight on interactions workers have with clients other than themselves.

Online forum ethnography

Researchers have also navigated access difficulties by conducting digital ethnographies (Murthy, 2013; Kurtz et al., 2017) of online worker forums for both primary (Dabbish et al., 2015; Rosenblat & Stark, 2016), and supplementary (Mateescu et al., 2017; Rosenblat, 2017) data collection. Some used forums to recruit interview participants (Dabbish et al., 2015; Glöss et al., 2016; Graham et al., 2017; Mateescu & Ticona, 2018) but did not ethnographically observation the forums themselves. Chandler & Malin (2016) conducted a hybrid of the two, using worker forums to gauge topics that guided later interviews, and eventually to recruit participants.

Online forums for platform workers take many forms. Some are public, some member-only. Some are hosted on other platforms, like Facebook and Reddit (Dabbish et al., 2015) others are exclusively for platform workers. Some are independently established by workers, and others established and moderated by platform companies. Some of the latter category have company representatives that participate in and/or moderate the forum, interacting with workers and answering questions. The category of forum selected by the researcher will shape its operation as a social setting; it will shape how workers relate to the forum and other participants. Researchers conducting work ethnographies using digital sites must be reflexive of how forum choice shapes data collection and therefore analysis.

Within platform work, forums provide a form of digital place-making in a spatially dispersed workforce; they are “a primary avenue for [worker] socialisation and system sense-making” (Dabbish et al., 2015, p.7). They establish communication networks where workers can seek advice, collectivise knowledge and share experiences; thereby functioning as “primary sites for knowledge-building” (Rosenblat & Stark, 2016, p.3759) that “create weak ties in a fragmented workforce” (Mateescu et al., 2018, p.4). Forums are therefore a salient site of data analysis on how workers experience platformisation. This method also can provide access to difficult-to-access workers - Mateescu et al.’s study (2018), the only study in the sample which included care workers, used forums to recruit participants and gauge interview topics. As platform workers are often proficient social media users, who all own a smartphone, forums make workers otherwise operating in private sphere more accessible to ethnographers.

Kurtz et al. (2017) argue that forums are ethnographic texts; they constitute a “piece of writing that explores cultural phenomena from the point of view of community insiders” (p.2). Alongside giving researchers insight into “the activities and conversations” of workers (Rosenblat & Stark, 2016, p. 3760), these forums serve a ‘water cooler’ function within the platform economy; a site where workers gather to discuss their lives in and beyond work. Where a cohesive workplace is difficult to delineate, these “virtual field sites” (Rosenblat, 2018, p.211), constitute one of the transient sites that collectively comprise the platform workplace ecosystem. Researchers obviously cannot directly observe work occurring in physical space through this method, thereby offering partial insight into issues of interest to a work ethnographer (Sade-Beck, 2004). However, forums are important sites for platform workers, therefore are important sites for platform work researchers – and should be part of how researchers conceptualise platform work as a whole (Silver, 2000; McCarthy, 2002; Green et al. 2005; Hine, 2008).

How researchers approach forum research is key to the rigour and quality of data collection. Approaching forums ethnographically, rather than as depositories of decontextualized data, involves

researcher embeddedness in a forum over *time* (Hine, 2008). For Dabbish et al. (2015), who used forums to explore how workers relate to algorithmic management, this involved observing two forums over five months and analysing a sample of 128 posts, selected from thousands, and sampled for inclusion of terms relating to algorithmic management, within a bounded period. For Rosenblat (2018) worker forum ethnography was a major methodological strategy, second to go-along interviews – here, forums were used for “archival and real-time analysis” (Rosenblat & Stark, 2016, p. 3759). She spent “hours nearly every day” on forums “actively [reading] posts, and the minute-by-minute updates of forum culture” (Rosenblat, 2018, p. 210). When engaged ethnographically, forums provide the temporal embeddedness valued by ethnography. The archival function allows researchers to observe patterns over time from a somewhat cohesive group of workers (Hookway, 2008). This method also potentially provides researchers an opportunity to develop long-term relationships with forum members⁵, although there are no clear examples of this in existing studies.

Forum access and participation raise critical ethical questions for ethnographers. Rosenblat (2018) outlines the challenges in accessing forums intended for workers only, although this varied depending on forum type. She details how administrators vetted her, asking for examples of previous work to ensure she was not a corporate spy:

I learned early on that my depth of knowledge and profound interest in their work could raise red flags for drivers in person and online; it was much easier for me to show proof of my intentions after I had published work in media that I could share with them, or that explained some of my findings thus far.

(Rosenblat, 2018, p.211)

Trust is key to gaining access to worker-created spaces. Gatekeepers are reassured by evidence the researcher is politically aligned with workers – a cautiousness compounded by the precarity of this workforce. Whilst Rosenblat had a history of public advocacy for Uber drivers, her post-research decision to join Uber as ‘Head of Marketplace Policy, Fairness and Research’ was considered by several drivers I spoke to be a considerable trust violation (Ford, 2021). The guardedness of workers over these spaces demonstrates how meaningful they are, and how they conceptualise their relationship to platform companies. In turn, issues of transparency work both ways – it can be difficult for researchers to verify who is behind posts – of their work history or biographical and identity information, which may be relevant depending on research aims.

⁵ Such engagement would require reflection on *who* is and is not likely to be active on forums

Rosenblat (2018) always disclosed her researcher status and aims to forum administrators, who function as site gatekeepers. Dabbish et al., (2015) also disclosed researcher status when joining closed worker forums – although one author registered to become a Lyft driver as part of the study's auto-ethnographic section, so accessed a Lyft-hosted Facebook forum as a “new driver” rather than researcher (p.3). However, it is unclear if either disclosed researcher status to forum members. Both researchers rarely posted, if at all – Dabbish et al. “maintained an observation only status” (2015, p.3), and Rosenblat only posted to “message other member participants” (2018, p. 210) – passive observation known as ‘lurking’. This is a contested ethical expectation among digital ethnographers, as it problematises the ethical standard of informed consent (Hine, 2008). Even in public forums there are ethical questions around using posts in research without direct permission of the poster, or where the forum is unaware of the presence of a researcher, who therefore is arguably operating covertly (Sixsmith & Murray, 2001; Hookway, 2008; Snodgrass, 2015).

The reproduction of, even public, online forum posts in academic research, can have consequences for precarious workers; a post being one among thousands in a forum is different to a researcher drawing attention to it by citing it in research. The ethical dilemma of digital footprints is relevant here, as posts are traceable to users even under a pseudonym, and the Internet's “public and searchable” nature makes the compartmentalisation of the research process, “upon which many of our ethical practices habitually rely,” difficult to maintain (Hine, 2008, p.266). Some posters may be active on several forums, making them vulnerable to identification through cross-referencing; as Kurtz et al., (2017) argue, there are “unclear boundaries between blogs as spaces for private reflection versus as content for public consumption” (p.7) – and this is particularly problematic when forums are private. Some strategies can mitigate these ethical risks. Researchers could choose to not directly quote posts, but paraphrase or use forums to observe broad trends – or directly message participants to gain permission to use their post. Indeed, Dabbish et al., (2015) and Rosenblat (2018) mention using forums primarily to triangulate interview findings, however both do directly reproduce posts.

Like most ethnographic sites, online worker forums are mediated, bounded spaces; there are parts of the worker community not represented on these forums, and researchers must be reflexive of these gaps. However, this is compounded by the mediated, yet opaque ways information is presented on online forums. Rosenblat (2018) references this when considering the algorithmic ranking of information by platforms hosting worker forums; particularly larger websites like Facebook. The organisation, presentation and hierarchisation of information on forums is structured by algorithms to highlight some posts, and de-

prioritise others (Postill & Pink, 2012; Kurtz et al., 2017). This structuring logic may be based on what posts the researcher or other users have engaged with, yet it is concealed from the researcher and frequently changes. This is part of a broader sampling issue arising from online forum ethnography, where what can seem like endless amounts of online data is bounded and filtered into data sets workable by a researcher. Whether this involves using key search terms, or studying all posts over a period, researchers must aim for transparency and reflexivity about what is excluded by the sets they create (Kurtz et al., 2017).

Auto-ethnography

Work auto-ethnographies, where researchers become a member of the workforce they are studying, has contributed significantly to workplace ethnography (Diamond, 1992; Crang, 1994; Boyle & Parry, 2007; Cavendish, 2009; McDowell, 2009; Doloriert & Sambrook, 2012; Herrmann et al., 2017). Auto-ethnography relies on five principles outlined by Anderson (2006) and summarised by labour ethnographer McDowell: membership of group being studied, analytical reflexivity, researcher visibility, interaction with other group members and commitment to “theoretical analysis of wider social structures” (2009, p.378). Just two of the ethnographies studied used auto-ethnography: Harrison et al., (2016) had one author working as an Uber driver for 76 days, and Bloodworth (2018) worked as an Uber driver in London for one month.

As one of the earliest platform ethnographies, Harrison et al. (2016) decided to “experience Uber first hand” as they had “no clear theoretical precedent” (p.1) for marking out spatial and conceptual boundaries of platform work. Auto-ethnography enables unique spatio-temporal embeddedness in the day-to-day of platform work. By doing the work and keeping an ethnographic journal, Harrison et al. (2016) and Bloodworth (2018) became embedded in the sense-making of the field, drawing their definitions from embodied experience of the work itself. In both studies, the researcher could collect data at all stages of platform work with continuity that is difficult to achieve through other methodological strategies.

Both auto-ethnographies include in-depth descriptions of being an Uber driver – both during and beyond individual gigs. They analyse becoming an Uber driver: getting licensed, taking topographical tests, completing the Uber-run ‘on-boarding’ class – noting the hidden costs and labour incurred throughout. Both note the labour taking place around gigs to make the job sustainable – like cleaning the car in particular ways, researching strategies to improve ratings and strategizing driving shifts to prevent financial loss. Harrison et al. (2016) describe experiencing algorithmic management from a worker perspective, outlining its role in “power-relationships between drivers and riders” (p.3). Bloodworth (2018) gives rich, contemporaneous descriptions of gigs; he describes a two-hour “dead ride” where he earned less than £5

(p.221), to illustrate information asymmetry and its impact on his wellbeing and income. Both researchers also collected data on how passengers interacted with them as workers during rides. As such, these studies provide some of the only contemporaneous observations of 'on-the-gig' and 'off-the-gig' sites comprising the platform workplace.

Auto-ethnography is unique in its ability to 'follow' the platform worker through all stages of this spatially and temporally fragmented work model. Where other strategies rely on 'snapshots' at ephemeral sites and moments, auto-ethnography provides a continuous narrative *between* sites. This gives the researcher insight into parts of platform work that are concealed or not defined as 'work' – and a more unifying image of the fragmented sites that collectively form the platform workplace ecosystem; this strategy is therefore unique in capturing a somewhat holistic portrayal of platform workplace. Indeed, traditional workplace ethnography takes for granted what and where the workplace is – a framework critiqued by feminist geographers of work (Rose, 1993; Cameron & Gibson-Graham, 2003; Richardson, 2018). However, platformisation has further forced work ethnographers to consider these spatio-temporal boundaries ambivalent and ideological. The ambiguity of these boundaries is well-captured by auto-ethnographers, whose unique placement enables new conceptualisations of platform work and workplace.

This method does not just expand *where* researchers can collect data, but also *what kind* of data can be collected. Bloodworth's study (2018) elaborates on the emotional, embodied tenors of platform work from a worker's perspective. He describes how algorithmic organisation of work *feels* addictive, likening it to a casino:

unpredictable rewards stimulate you just enough to reel you back in – you carry on dipping your hand in your pocket in hope of beating the odds. Like a slot machine, there is something almost thrilling about playing a game that you are not sure will give you something worthwhile in return.

(p.244)

He triangulates this with colleague discussions of the "exhilarating highs and restless lows of the job" (p.244). Throughout the study, he describes the embodied, emotional impact of platform work on his overall lifestyle. He describes the alienation of working unsocial hours and "[slinking] into bed" while "most of your neighbours [are] sitting down to breakfast" (p.221), and exhaustion from emotionally managing passengers (p.243). Harrison et al. (2016) similarly explore moments of "worry" experienced by drivers – like during passenger misbehaviour or police interactions (p.7). Capturing this "embodied labour power"

(McDowell, 2009, p.138) is critical to understanding the wider social world of work, especially when triangulated through conversations with colleagues. Drawing on Wacquant (2003) and Bourdieu (2000), McDowell (2009) reminds us that the worker is a social agent, who is “before anything else, a being of flesh, nerves and senses” (Wacquant, 2003, p.vii); that “social order inscribes itself in bodies through a permanent confrontation, more or less dramatic, but which always grants a large role to affectivity” (Bourdieu cited in Wacquant, 2003, p.viii). Similarly, Ahmed (2004) encourages social scientists to understand affect not as individual “psychological dispositions” but as “investments in social norms” (p.54). So, from their embodied and affective experience of work, researchers can theorise broader social and labour relations.

Bloodworth’s (2018) writing style as an undercover journalist, rather than social scientist, partially enables him to capture these intangible dimensions of platform work. Some would not consider Bloodworth’s study an ethnography – arguing that what distinguishes ethnography from “mere journalism” (Brewer, 2000, p.15) is the rigour conferred by peer review. Nonetheless, Bloodworth’s study falls on the ethnographic side of journalism, as outlined by Singer (2009); his work is analytic, reflexive, includes interviews with other subjects, involves extended stint in the field and contextualises observations within broader theoretical and historical trends. However, his writing style allows for deeper exploration of the emotional and embodied tenors of his experience, which can be side-lined in academic publishing. Encouraged to be “dispassionate observers” (Reger, 2001), researchers have historically suppressed emotional responses in pursuit of objectivity (Hochschild, 1979; DuBois, 1983; Harding, 1993). This is contested by an increasingly influential feminist ethnographic tradition, which encourages researchers to understand emotions as data that can provide insight into the field and researcher positionality (DeVault, 1996; Cylwik, 2001; Stacey, 2001). Bloodworth shows the value of recording and analysing emotions when studying the world of work, and the unique capacity of autoethnography to do this. In a work model that often effaces the body, voice and personhood of the worker through its digital apparatus (Irani & Silberman, 2013; Briziarelli, 2019), this is important for platform ethnographers to address.

Yet, platform autoethnography is ethically challenging. It is relatively easy for researchers to become platform workers - however, the contested ethical boundary between overt and covert research is blurred by this lower barrier of entry, as researchers do not have to obscure their motivations during an interview. When becoming a platform worker, the researcher must constantly negotiate when and how to disclose researcher status to the platform, client or other workers. The relationship between researcher and their co-workers or clients could become not only “different” but “presumably more problematic” (McDowell, 2009, p.182) to gaining salient insight if researcher status is disclosed. McDowell (2009) draws on Diamond’s care worker auto-ethnography, where, despite intentions, “as the study proceeded, [it] was forced

increasingly to become a piece of undercover research” (1992, p.8). McDowell (2009) admits feeling “troubled” (p.182) by the ethics of Diamond’s covertness. Badger & Woodcock (2019) further explore the challenges of identity management between researcher and worker, arguing for a “fluctuating (c) covert research” strategy, which involves “remaining ‘covert’ to the Platform...whilst attempting to operate in an ‘overt’ manner with participants and workers” (p.137). Neither Bloodworth (2018) or Harrison et al. (2016) clarify whether their research was covert, overt or both.

Whilst a strategy of fluctuating or full (c)overtness has precedent in work auto-ethnography (Cavendish, 1982; Diamond, 1992; Calvey, 2000), Woodcock reflects on the difficulty of getting ethical approval for projects with covert elements in present university research climate (Woodcock, 2017). Particularly if the study criticises an identifiable platform, there is concern about the legal liability of a researcher’s institution (Badger & Woodcock, 2019). Despite the platform worker being classified as self-employed, and therefore “legally isolated from the firm” (Badger & Woodcock, 2019, p.140), this does little to mitigate ethics review board concerns around potential legal action from the company. McDowell also notes that even if passed ethical review, covert work auto-ethnography still risks “emotional, professional and legal and bodily dangers” (2009, p.148). This is especially pertinent for the platform economy, where worker safeguarding is often insubstantial and inadequate (Garben, 2017; Howard, 2017).

The blurred boundary between researcher and subject is a strength and limitation of auto-ethnography. Auto-ethnographers must reflect on being their own subject, and how this shapes their experience of the work being studied. Self-reflexivity is critical for all ethnography, but particularly for auto-ethnography. McDowell (2009) interrogates Anderson’s (2006) assertion that the researcher can become a “complete [member] of the group” (2006, p.378) being studied, because even if accepted, they are still social scientists with a “second or different identity to other group members” (McDowell, 2009, p.135). This goes beyond the researcher’s positionality as a researcher, but to their whole identity. Drawing on Diamond’s care work auto-ethnography, McDowell (2009) highlights that despite joining the workforce, Diamond, as a white man, remains an outsider to a workforce predominantly comprised of working-class women of colour (p.180).

Whilst there is no single profile of the platform worker, researchers undertaking platform work are unlikely to experience the same emotional qualities of precarity as those who rely on platforms for their livelihood. Even if the researcher experiences other forms of precarity – particularly early career researchers – their primary motivation for entering the field is research, not making ends meet. As Badger & Woodcock (2019) identify, there is a difference in emotional relationship to the field for the auto-ethnographer,

compared to the platform worker; “doing fieldwork is not the same as the lived reality of those we study” (p.138). This is compounded if the researcher falls outside the racialisation and gendering of the workforce they enter. It is therefore crucial work auto-ethnographers actively interact with other people in the field – not only so the researcher is embedded in the social world of the field, but also to maintain critical distance from their own experience. Harrison et al. (2016) and Bloodworth (2018) both reference discussions with fellow workers, and Bloodworth in particular details conversations with migrant workers, whose job experiences and work history are more typical of the disproportionately migrant male Uber workforce.

In conclusion, this chapter evaluatively surveys methodological strategies thus far applied in platform work ethnographies. Existing platform ethnographies have illuminated crucial insights - however, it has largely adapted traditional ethnographic methods to a model of work organised in a fundamentally different way to the model from which traditional work ethnographies emerged. The ethical, practical and theoretical challenges this chapter summarises requires rethinking ethnographic sites: including the worker, workplace, working time and work itself, to reflect the shifts brought in by platformisation. However, these methodological innovations can only emerge through ongoing practice and reflection – with attentiveness to the ethical dilemmas presented by the digitisation of precarious work. It is therefore crucial for platform work ethnographers to not only methodologically experiment, but to *share* their methodological reflections with one another.

-3-

Towards a 'World-of-Work' Platform Ethnography

The previous chapter explored the conceptual, spatial and temporal challenges platform work poses to traditional workplace ethnography, outlining the urgency of adapting this ethnographic method to new challenges. This chapter builds on these provocations, outlining and reflecting on my responses to these methodological challenges during this study. It proposes an ethnographic inquiry not 'workplaces' but into 'worlds-of-work' - with multiple temporal and spatial registers – to capturing the different sites and moments at which platform work is 'staged'. It begins by defining 'world-of-work' ethnography as a multi-sited, multi-strategy approach that conceptualises platform work beyond the point of production. It then explores, via methodological fragments, the different sites that comprise the 'world-of-work' in this study. It ends with a consolidation of my reflections on ethics, reflexivity and sampling, which are also woven throughout the chapter.

From 'workplace' to 'world-of-work'

The challenges platform work ethnography emerge from the political-economic, spatial and temporal dynamics of platformisation. The strategies outlined in Chapter Two do not represent all that is possible, only what has been done thus far. Whilst rich research has been conducted using these strategies, there are gaps in the platform work ethnographic literature. Namely, minicab and courier work (i.e., work that is gendered masculine and conducted in the public sphere) is overrepresented. Many workforces transformed by platformisation – like domestic, care and sex work – are excluded from the growing corpus of platform work ethnographies, and therefore from broader theoretical reconstruction.

The novel spatio-temporal realities presented by platforms require work ethnographers to gain literacy in non-traditional methodological strategies. The 'plant sociology' method is not replicable in the platform economy; thus, ethnographic studies naturally become multi-method and multi-sited, encompassing a 'world-of-work' rather than workplace approach. This is inspired by the contribution of Suzi Hall (2021), who posits that:

conceiving of a world-of-work in the edge territories requires up-close engagement with working lives in which social memberships and spatial mediations are integral to living with precarity.

(p.88)

Hall's insights on the conceptual and spatio-temporal disruption that non-regular work taken up at the racialised edges poses to normative understandings of 'jobs', 'employment' and 'unemployment' is relevant to platform work. Yet, this disruption is an *opportunity* to integrate marginalised but relevant sites into our understanding of what shapes work and, indeed, capitalist political economy. As Chari & Gidwani argue when calling for a spatial ethnography of labour: a "careful ethnographic mapping" of the "several types of work [that] remain unwaged, unrepresented and marginalised" is required to "find the many invisible subsidies that subaltern lives provide the social reproduction of capitalism" (2005, p.273). This includes integrating interstitial sites of community building workers develop in and around time spent working, the time spent and sites where people wait for work and recuperate. It also involves considering the broader socio-cultural world-of-work - how work is represented by media and/or firms, and within government policy. This involves recognising that the processes shaping emerging labour relations do not just happen at the point of production, or when the worker is actively producing value. In the context of platformisation, this also involves integrating virtual and physical spaces as part of the holistic whole. It means borrowing methodological strategies from STS studies and internet and digital media studies, developed to ethnographically research apps (Star, 1999; Light et al., 2016). This could also mean work ethnographers collaborating with software designers to create digital tools that collect research data in novel ways – such as Irani & Silberman's Turkopticon (Irani & Silberman, 2014, 2016).

Furthermore, the apps themselves must become sites of interest for platform work ethnographers – exploring how app content and design structures work itself. This is particularly urgent, because – as the critical media scholarship argues - apps do not merely digitise labour relations, but actively shape and restructure them (Gillespie, 2010; van Dijck et al., 2018). Therefore, platform work ethnographers must become familiar with the methods used to study *how* app design modulate action and meaning. As Wittel (2000) asserts, ethnographies of fully or partly digital worlds require movement between offline and online field sites.

Site One: The App

This thesis uses strategies borrowed from Light et al.'s, (2016) 'walkthrough method' to study the app interface design as part of the platform 'world-of-work'. Here, Light et al. adapt methodological strategies developed in science and technology studies (STS) for more interpretative research goals, recognising the necessity of developing "new concepts and methods to study computational technologies as sociocultural artefacts" (Light et al., 2016, p.885). Here, researchers – either themselves or through guiding app users – "systematically and forensically step through the various stages of an app registration

and entry, everyday use and discontinuation of use” (p.881). They recommend “generating detailed field notes and recordings....through screenshots, video recordings of the phone screen and audio recordings of one’s thoughts while conducting the walkthrough” (p.891). Incorporating embedded observation, analysis and field note generation to the tracing of an app’s system of actors allows for *ethnographic* exploration of app design. This is similar to Mateescu & Ticona’s approach in their 2016 analysis of the Care.Com app interface:

From the analysis of platform materials, we identified key moments in which platforms mediated the relationship between workers and clients: sign up and profile creation, applying for jobs, communicating with prospective families, and interacting with ratings systems, and asked interviewees about their experiences with each of these moment...When interviewees volunteered to show us their profiles or messages they received from platforms, we asked them to send screenshots.

(p.4390)

Whilst they do not explicitly use Light et al.’s method, this does show growing inclination of platform labour scholars towards conceptualising apps as sites of qualitative data collection. Light et al.’s method places more emphasis on how interface design choices modulate action. Initially developed to study how dating apps produce new public sexual cultures, the walkthrough method borrows approaches and vernaculars of user experience (UX) research to unpack how relations, expectations and behaviours on and around platforms are shaped by the technological mechanisms and cultural references designed into app interface. This combines analysis of the linguistic-representational registers already familiar to social scientists - like use of language and image - with the technical modulations and affordances that apps deploy (Ash et al., 2018). This may include: sound effects and haptic feedback, colour schemes, layout of icons, profiles and buttons, the use of sliders and drop-down menus, visual feedback, image movement and more. Together, these “units” (Ash et al., 2018, p.167) modulate UX, action and expectation, creating particular affordances. In UX design, affordances refer to the range of behaviours an app environment offers or constrains (Gibson, 2015); this can range from hard boundaries (i.e., what the app’s interface requires or prohibits from a user) to soft boundaries (i.e., behaviours or app journeys users are encouraged or discouraged from taking). For example, if app designers want to encourage or discourage a user from pressing a particular button, this will influence where the button is placed on the interface, how it is coloured or shaded in relation to the broader interface, whether it vibrates or is made to look like it is being pressed down when clicked. Units also shape how the user conceptualises themselves and others within a platform - for example, on a dating app, the act of ‘swiping through’ seemingly endless, image-only profiles

communicates something different to one where profiles require a higher threshold of text/information to be uploaded, or where the use of progress bars indicate a finality of available profiles.

In context of labour platforms, this method enables labour researchers to integrate the platform itself into a multi-sited conception of the 'workplace' - as a site that shapes the conditions, relations and ideologies of labour mediated on, around and through the app. Crucial elements of these relationships are demarcated by app design - ideologies of *who* the worker is, *what* work they do and *what* is being purchased. The tracking and monitoring made possible by algorithmic platform management is a unique intervention of platforms - and the walkthrough method provides a rubric for analysing how this is communicated to and experienced by workers and clients. Yet, these systems of meaning are not self-contained - apps borrow references from one another as well as broader cultural repertoires. Returning to the dating app example: the swiping motion first introduced by Grindr then become an expected affordance across other dating apps. Now, it has - as chapters seven and nine show - entered the ecosystem of domestic work and care apps. The commercial UX logic here is that it is easier to integrate a platform into a user's life if its affordances are already familiar - however, from a social science perspective, this cross-referencing of UX design shapes and is shaped by social meaning.

The walkthrough method does not assume the relationship between social relations and regimes of representation to be deterministic – but rather, co-shaping. Users often usurp (intentionally or not) the original vision/expected use of designers. Furthermore, Light et al., (2016) argue that “technologies are designed, experienced and further developed within a culture that shapes and is influenced by them” (p.887). This draws on the social constructivist approach of Actor-Network Theory (ANT); rather than prescribing a direct line between how an interface/technology is designed, and the values and relations that emerge from interacting with that design, the ANT-influenced walkthrough method proposes a relational ontology, whereby socio-cultural and technical processes gain meaning *through* their interaction with one another (Latour, 2007). This understanding of apps not as closed systems, but as socio-culturally embedded ones, is where the walkthrough method draws its “ethnographic sensibility” (Star qtd. in Light et al., 2016, p.887). Researchers are instructed to conduct “a step-by-step observation of the app's screens, features and flows of activity” (Light et al., 2016, p.882) either using the app themselves or observing others using the app, mimicking everyday use. Throughout this process, they record ethnographic notes, which are then reviewed and contextualised within theoretical approaches to generate new insights.

I used the walkthrough method primarily from a participation approach - i.e., generating field notes from my own app uses, rather than by observing others. In doing so, I gleaned insights on how Bubble and

Uber structure ideologies of work and worker from the client perspective. However, whilst I did not observe other people's app use, I used app screenshots and screen recordings sent to me by workers, which delivered insight into the worker version of both platforms. Indeed, both Uber and Bubble have separate apps for clients and workers - for workers, Uber has the 'Uber Driver' app, and Bubble the 'Bubble Sitter' app. Given concerns outlined in the previous chapter around researchers inadvertently leaving digital footprints of themselves or their participants, I ensured any screenshots used in this study had identifying information blurred out - including name, location, availability, and any self-written profile content. If there were parts of the labour process I wanted to focus on - like profile creation - I collected as many screenshot examples as possible, so I could deduce what kind of information and layouts were generic. I was then able to ensure that screenshots I included were not linkable to individual workers.

I also incorporated questions about the experience of platform use at key moments into worker interviews - for example, I asked Bubble workers to mimic and describe, step-by-step, navigating job adverts, and the decision-making process they employ when assessing whether to apply for a job. As my interviews of Bubble workers largely occurred via zoom, I could not incorporate direct observation into this line of questioning, instead relying on the worker's narrativization of their process; however, I compensated for this by asking them to narrate their process while physically going through a job advert, in order to best mimic the app's typical environment of use. However, it is worth remembering when using this method that app design is not fixed - unlike a physical workspace, re-designs can be imposed overnight, restructuring the working conditions of thousands of workers at a time. Researchers conducting this method must therefore temporally situate when they are gathering data. Furthermore, as Light et al., (2016) note, the researcher cannot gain specific insight into an app's underlying structure or operating code, as this is almost always concealed to protect commercial interests.

Due to the constraints of COVID-19 at the time, I could not conduct the walkthrough method using an observational approach - i.e., observing workers using the app, as this required being in person when restrictions were in place, thereby limiting the insights I generate using this method. Yet, even without COVID-19, the observational approach in a labour platform context carries ethical and practical challenges. For Uber, a researcher cannot accompany a driver throughout their workday, limiting the ability to gain live insight into their interaction with the platform. This is also true for Bubble - and this is further compounded by the involvement of children, which limits what kind of screenshots a researcher can ethically ask for. One Bubble worker, for example, who had returned to Brazil by the time of our final conversation, offered me her login details so I could perceive the app from her perspective. After reflection, I declined the offer. Firstly, because of the jeopardy it could put the interviewee's livelihood in if account sharing was flagged -

whilst she did not anticipate returning to London soon, the possibility that, if she did return, she could be excluded from one of few income sources available to Brazilian migrant women was, I believe, too ethically risky even with her consent. Secondly, perusing family profiles adds another layer of ethical risk, as many profiles contain images and information about children not for public consumption. Both ethical risks were too complex for the remit of this study, as they would have required additional ethical clearance for covert ethnography, which I did not have.

This precluded my ability holistically understand how the app structures working environment at each stage of the labour process - from waiting for work, to negotiating work, to completing work. Instead, I settled for disjointed fragments: largely screenshots workers willingly sent me, which were often tied to a concern they were eager to discuss, and data gathered through my own use of the client app, which I did up to the point where it would become covert ethnography. With Uber, I could jot ethnographic notes and take screenshots throughout the entire process of using it as a client – requesting, taking and paying for a ride did not require worker deception or wasting worker time. This is not easily replicable for the kinds of relational care work Bubble deals with - this would involve creating a dummy profile that either falsely advertises a childcare gig (therefore wasting worker time spent applying for a gig) or declares researcher status upfront, and therefore will unlikely be engaged with as a typical profile. As a result, I could only conduct the walkthrough method using the sitter lookup function, which allows the client to ‘swipe’ through publicly available sitter profiles,

I also signed up as worker to both platform mailing lists, and so received general communications intended for workers over the course of research. I engaged these communications in an embedded, ethnographic way - as each email came in I jotted field notes, noting relevant contemporaneous context, where, for example, emails ‘hooked’ into news cycles. This was particularly salient during the COVID-19 lockdown, as I could track in real-time how platforms engaged with the risks their workers had to take to continue working. Whilst signing up to mailing lists is not part of the walkthrough method as outlined by Light et al. (2016), I found it ethnographically useful as part of understanding the app as a workplace site. Not only did it allow for a temporal embeddedness that is difficult to achieve when researching platform work, but it can also be considered part of the extended world of the app, and therefore studied using similar vernacular (for example, the use of colour, unit arrangement, links etc). Nonetheless, future studies which gain ethical clearance for a more auto-ethnographic use of the walkthrough method would draw out valuable, necessary insights into parts of the platform world-of-work missing from this study.

Site Two: Interstitial Spaces

Conceptual and spatio-temporal boundaries around platform work are contested. A central conflict in the UKSC ruling on the worker status of Uber drivers regarded working time. The Court recommended a driver be considered 'at work' as soon as they log into the app, if they are in a territory where they are licensed to operate and are ready to accept trips - a ruling not taken on by Uber (Uber BV v Aslam, 2021). The Court ruled that in the on-demand labour model, the time spent being *available* to work is productive time and therefore should not be excised from regulated work time. Under this rubric, the physical spaces where platform workers make themselves available for work are part of the platform world-of-work - for Uber drivers, this could mean certain high-traffic locations. For Bubble workers, this could be wherever the worker spends time curating their profile or being on call to negotiate with potential clients.

From the perspective of platform work ethnography, these sites are crucial, as they host a part of the labour process that is crucial yet illegible within the platform. However, by virtue of this illegibility they can be difficult to discern, particularly for those working in their own, or other people's homes. For platform taxi and courier workers, being 'plugged in' necessarily takes place when they are in their car and on the street. For Bubble workers, log-in time is woven more amorphously throughout their day - there is no fixed place where they spend time applying for jobs, responding to messages and negotiating with clients.

Yet, platform work ethnographers must consider the times and spaces *between* tasks (hence 'interstitial'), where workers are still actively engaged in the platform's world - even if it is not recognised or remunerated by the platform. Sometimes, these spaces are informal and self-organised, sometimes they are regulated and demarcated by an external institution; sometimes they are online, sometimes they are offline or both. For this study, I identified one physical interstitial place of relevance for each case. For Uber, this was the Authorised Vehicles Area (AVA) - a geofenced car park next to Heathrow Airport, which I went to following the suggestion of an early interviewee. For Bubble, this was 'Stay and Play' gatherings, self-organised by nanny and au pair union Nanny Solidarity Network (NSN). At both, I conducted ethnographic observation and interview, and recruited for further semi-structured interviews.

I visited the AVA dozens of times over two and a half years (although these visits were suspended for 8 months due to COVID-19 restrictions). I conducted on-site interviews, took photographs and generated observational ethnographic notes. Before each interview, I confirmed the participant worked for Uber and each interview lasted between 15 and 60 minutes. The AVA offered a unique opportunity to observe drivers in an organic environment (Clair, 2012). I could observe how drivers interacted with each other and airport security, and how they spent time between journeys. This helped build a picture of worker lifestyle currently missing in existing research. Furthermore, observing the conditions, location and securitisation of the AVA

– a space built for Uber drivers – offered insight into the broader conception of Uber drivers by institutions like Transport for London (TfL). This was relevant for my research questions which are concerned with the representational and regulatory politics of Uber drivers as racialised workers. The primary limitation of this site is it only includes drivers who work around Heathrow Airport as part of their routine. It is unclear whether the airport attracts a particular type of driver - my AVA interviews suggested diverse work routines, with some going to the AVA every day, and others only occasionally. However, this site selection excluded drivers who, for whatever reason, do not take airport jobs.

Like the AVA, the NSN-organised ‘Stay and Plays’ provided a valuable opportunity to both recruit interview participants and generate field notes within an organic environment. Unlike the AVA, this was a self-organised, informal site and therefore erratically accessible - during my research, only three were hosted (partly due to COVID-19 restrictions). The NSN organised ‘stay and plays’ as a space for nannies and au pairs to connect, whilst providing activities for the children they are taking care, thereby integrating gatherings into their work schedule. Stay and plays were therefore a unique opportunity to observe care platform workers during a ‘task. They often happened in public parks and were advertised in local online nannying networks and within communication networks of relevant migrant populations. Whilst not specifically for Bubble, or even app-based, nannies, they were widely attended by app-based nannies because of the migrant communities they advertised to. Unlike the AVA, these spaces were locally specific - nannies attended stay and plays in the area they worked in. The stay and plays I attended were in West London (attended by nannies serving Kensington, Chelsea, Fulham, Marylebone and Notting Hill) and South-East London (attended by nannies serving Dulwich, Camberwell and Nunhead). Both drew nannies working in wealthy areas, which shaped the dynamics they described during interviews, and which I observed. Observing nannies from different work contexts (agency nannies, word-of-mouth nannies and app-based nannies) contextualised the experiences of Bubble workers within the sector. This was particularly beneficial for my research questions, as it showed how platforms like Bubble engage with racial and migrant divisions of labour within the sector. Ethically, the challenge of sharing research space with children was mitigated by my active decision to not record any observations that involved children.

Both places provided salient sites of data collection for situating platform work in a broader social context - reflecting on *what* and *where* interstitial places exist, *who* creates them and *why*, and how they are used and regulated conveys something about how platform workers are socially coded. In lieu of a workplace, these sites enable observation of different parts of the platform labour process, even if not formally recognised as such by the platform. However, researchers working in such sites must reflexively consider what kinds of platform workers do and do not attend these interstitial spaces. Particularly with

self-organised places, researchers must be cognisant that only workers plugged into relevant networks will be present in these places. Furthermore, given the lengths platforms and regulators go to fragment workers, it is important for researchers to ethically reflect on their presence in these places, as some of the few sites workers have to themselves. In both cases, I ensured my researcher status was clear, so workers did not feel duped by my presence. In the AVA, my outside status was easily: I walked around with a notebook and a high-vis jacket security insisted I wear. However, this also marked me as a potential authority figure, which initially caused driver suspicion, as drivers typically feel surveilled by TfL and airport security in the AVA is (as chapter six outlines). For the stay and plays, this was trickier - as a brown woman, I looked like the people I was researching. However, as well as introducing myself at the beginning of the stay and play as a researcher (and giving people an opportunity to withdraw consent from being jotted about), I distinguished between conversations I had as part of research from those that were not by visibly reaching for and using my notebook. This way, anything a worker disclosed to me was disclosed in the knowledge that it may be anonymised and used for research.

Site Three: Casework (Uber only)

I also generated ethnographic notes whilst volunteering as a caseworker for a trade union representing app-based drivers in London, which I did for one year. As a caseworker, I took on dozens of driver cases, most of whom had been 'deactivated' by Uber. As drivers do not have right to fair dismissal (therefore cannot go to an employment tribunal), I worked to get them reinstated on the platform by lobbying local politicians and Uber management. I initially became a caseworker during COVID-related research pauses so I could contribute my time and knowledge to support drivers at a difficult time. However, as time passed I realised this was a salient ethnographic site, as it gave insight into the compounding racialised vulnerabilities Uber drivers experience - from difficulties with immigration documentation, lack of access to employment protections and punitive algorithmic management. Observing the context and impact of workers being expelled from the platform offered key insights into the varying ways workers are 'bonded' to the platform and experience rupture when this bond is broken. Casework created unique opportunities to understand the granular experiences drivers have had while working, which led to rupture and conflict. In each case, I had to actively navigate Uber's systems for several weeks, allowing for researcher embeddedness otherwise elusive in platform work ethnography. Going through the process from start (deactivation) to finish (reactivation or close of case), I could see how Uber interacts not only with drivers, but other institutions - like TfL and the Home Office. Experiencing the frustration and struggles of navigating these systems with drivers generated embodied, experiential data akin to the kind Wacquant (2003) associates with auto-ethnography.

It may seem counterintuitive to consider a site where drivers are locked out from work as *part* of the platform's 'world-of-work'. However, in the Uber context, deactivation is a ubiquitous part of the work process. Deactivation happens frequently - most drivers I spoke to across all sites had either themselves been deactivated (and sometimes later re-activated) or know someone who has. This fear of deactivation structures and disciplines driver experiences - it was a spectre that loomed heavily across interviews. Uber does not make deactivation data public; the closest available is a survey conducted by Rideshare Drivers United (RDU) and the Asian Law Caucus (ALC) of Uber and Lyft drivers in Los Angeles, which found two-thirds of 810 surveyed drivers experienced deactivation, with drivers of colour and immigrants disproportionately impacted (RDU & ALC, 2023). This prominence of deactivation is corroborated by my interview data and online forum ethnography. Drivers recruited from across sites spoke of deactivation feeling common, and my observation of online driver forums over two years showed experience and fear of deactivation to be one of the most discussed topics. Deactivation is part of worker imagination and the platform's intangible disciplining structures, and therefore can be considered a site in the world of platform work. Furthermore, deactivation and the decision-making that leads to are not transparent. Doing casework offers a unique access to this process in an embedded way.

Combining fieldwork with service provision raises considerable ethical dilemmas. In a sense, it exemplifies Gillan & Pickerel's (2012) "ethic of reciprocity" which looks at how scholars can "justify research that demands time consuming and potentially risky participation in research" (p.133). Through casework, I could use my research expertise to directly, thereby 'giving back' to the field. However, drivers are vulnerable when they come to unions for support - their livelihood is at stake. Therefore, the co-mingling of service provision with research gave me the "underlying current of anxiety" McDowell (2009, p.182) describes when reading Tim Diamond's care home worker auto-ethnography. Questions of consent, power and researcher disclosure are complicated here: what power do I, as a caseworker, have over an Uber driver coming to me for help? How does this power shape a driver's ability to consent - could they feel coerced to say yes, fearing I may not fight as hard for them if they do not give me what I want? When is the right time to disclose researcher status - before or after I complete their case? Arguably, informed consent requires drivers be told once I am assigned as their caseworker and be given the option to change caseworker. Yet, union resources are low, and another caseworker may not be assigned for several weeks, potentially compromising their case.

After reflection, I decided on the following: when assigned a case, I contacted the driver and followed the steps of union protocol, without disclosing researcher status. This protocol included asking the driver about what happened, what communication he has had with Uber so far, what he wants, how has

this impacted him, whilst taking notes. Here, I acted purely as a caseworker - my sole aim being to achieve what the driver wanted (normally reactivation). Whilst I jotted ethnographic notes during this time, I was careful to only jot *my* emotions and experiences navigating disciplinary systems, rather than the driver's case itself. Only upon closing the case - either successfully or not - did I disclose researcher status. I informed the driver that alongside doing casework, I was researching working conditions in the gig economy and asked if I could use notes taken as part of their casework to inform this research. I reassured them these notes would be anonymised of all identifying information (including esoteric case details). I also clarified that if they declined, I would delete the notes I had made, including my emotion logs (although a short summary would be given to the union as required). If they consented to inclusion, I asked if they would be willing to have a further interview with me about their case. I chose this route because I was concerned that disclosing researcher status and asking consent before taking on their case could be coercive; I did not want drivers to feel they had to consent to get timely, effective support. As note-taking is already part of casework, my note-taking was not covert: I had to do it regardless, the question was whether I analysed them for research. The union itself was aware of this process, and of my researcher status.

Casework as fieldwork has clear sampling limitations – it exclusively engages unionised drivers for whom something has gone wrong. Most drivers in this context will feel negatively about Uber in ways not necessarily shared by other drivers - or even themselves at other times in their working life. However, ethnography is not about finding representative or generalisable cases, but about capturing moments, contextualising them and using them to theorise a broader phenomenon. It is therefore not only important to ensure drivers from a range of contexts (including non-unionised) are interviewed alongside the casework method, but also to situate the data gathered here within its political and emotional context. Yet this is not only true for casework, where it is more explicit as a limitation - it applies to all sites in the platform world-of-work.

Site Four: Media and Marketing Material

Platforms rely on marketing and media coverage - as networked entities, they aim to onboard as many users as quickly as possible. Consequently, corporate platforms often come with vast, VC-funded marketing budgets that narrate the platform's entry into a city, which, as chapter one outlines, shape urban take-up of platforms. Whilst researching, I felt surrounded by the apps I was studying - from seeing adverts on the tube, to sponsored social media posts, to press articles. Here the aim is to 'disrupt' the norms of existing sectors, transforming them according to platform logic. This 'disruption' often generates significant media coverage - positive and negative - and marketing materials. This discursive, representational shift has both shaped and been shaped by the deployment of Uber and Bubble. From media-driven moral panics

around dangerous brown Uber drivers explored in chapter six, to the platform-set expectations of slick, frictionless service provision explored in chapter nine - the broader socio-cultural scripts that develop through and alongside platform entry shape everyday experiences of platform work. This is particularly relevant for this study's concern with how the racialisation of platform work shapes working conditions; an analysis of media and culture (particularly in the context of moral panics) can render legible the "repertoire" of representational practices of race (Hall, 1997). As race is in part discursively and representationally produced, a critical analysis of discourse enables researchers to assess how visual, aural and textual scripts are "recruited and shaped into recurrent, complex formats or patterns" that "mediate, perpetuate and reproductive racialisation" (Lin & Kubota, 2011, p.282). This also speaks to the theoretical understanding, outlined in chapter one, of platform urbanism as a socio-technical imaginary - "an anticipatory vision - even a self-fulfilling prophecy" - driven and shaped by corporate narratives (Sadowski & Bendor, 2019, p.542). Corporate press and marketing material can therefore be conceptualised as a site that shapes platform work conditions.

To ethnographically incorporate representational practices as a 'site', I deployed a critical discourse analysis (CDA) of cultural and political texts in the world of each platform. Several factors influenced my selection of texts - from being led to texts by conversations with workers, to spotting recurring media and advertising coverage in my daily life. Texts analysed throughout this study include adverts (in static billboard and video form), press coverage (PR and regular), online marketing campaigns and government reports/policy documents. I analysed these texts as "multimodal phenomena" (O'Halloran, 2021, p.250) - incorporating not just language analysis, but of (where relevant) sound and image as part of 'discourse' (Kress & Leeuwen, 2006). CDA is distinguished from other discourse analyses by its theoretical focus on discourse as a site of power (re)production: the CDA practitioner makes legible socio-political practices and structures underpinning discursive practices, aiming to denaturalise the power structures these practices produce and are produced by (Kress, 1990; Van Dijk, 1993; Wodack & Meyer, 2009). It involves interpreting the ideological assumptions that lie beneath text, and how these relate to power relations through which the text emerges. It requires a hermeneutic, interpretive analytical approach that situates the reading/perceiving of text within its historical and geographic context, and even within the context of the researcher's own positionally (Wodack & Meyer, 2009; Mullet, 2018). CDA is therefore useful for researchers unpacking how media and culture shape practices of racial, sexual, class and gender domination and resistance. The data collection and analysis method I employed broadly followed the seven steps of CDA outlined by Mullet (2018, p.122): discourse selection, data source (text) selection, social and historical contextualisation of text, analysis of text's external relations in the text, analysis of text's internal relations data interpretation.

Site Five: Ride-alongs (Uber only)

I also conducted ethnographic ride-along interviews with Uber drivers, which was not possible for Bubble workers for reasons outlined in the previous chapter. As the previous chapter also outlines what this site does and does not convey about the world of platform work, here I will reflect briefly on my particular experience - although interview sampling, ethics and reflexivity will be explored later in the chapter. I jotted ethnographic notes at each stage of the ride-along: from requesting a ride and 'rating' the driver, to observing environmental and aesthetic strategies deployed by drivers in their car, to interactions with other actors on the road. Upon entering the car, I asked the driver how they were and introduced myself as a researcher, telling them my institution and research topic. I asked them if they were willing to be anonymously interviewed during the journey, reassuring them I would rate them five stars at the end of the trip regardless. This was to prevent drivers feeling coerced into consenting to interview for fear of receiving a bad rating. All ride-alongs happened in London, from different starting points in the city, to avoid my data being skewed towards drivers working in a particular location. I did not conduct an interview every time I rode in an Uber, to ensure Uber could not deduce the identity of participants from my ride history during a particular time period.

Site Six: Online Worker Forums

I drew on online worker forums for both case studies. As the previous chapter outlines the possibilities and limitations of this site, here I will outline and reflect on my own use of this method. For Uber, I ethnographically observed the widely used London-specific forum on Uberpeople.net - whilst it does not list the number of users, the forum has been operating since 2014, and has nearly 300,000 posts. UberPeople is an independent forum that has sub-forums for jurisdictions around the world. For two years, I checked the forum at least once a week (normally three to four times per week), and jotted notes on topics discussed, overall forum mood and recurring questions/experiences/complaints. I observed the forum as a 'lurker' - i.e., without posting or making my presence known - and did not directly quote or draw on individual posts for this study (whilst my jottings included post screenshots, these were not reproduced in this study). I chose not to reproduce posts because of ethical concerns raised in the previous chapter - as I could interview drivers via other means, the additional ethical risk of reproducing posts felt unnecessary. However, the ethnographic jottings allowed me to observe shifts over time - for example, I could track driver experiences of COVID-19, including their experience accessing COVID self-employment grants. I could track when drivers were experiencing high demand during COVID, and how they navigated periods of low demand. Forum ethnography also provided time-specific context for in-person interviews; I used issues I

observed on the forum as trigger topics for interviews. If I wanted to gain a general understanding of how drivers experience a particular issue - for example, TfL compliance officers - I used the search function to extract relevant posts. UberPeople provided unique opportunity for researcher embeddedness in the platform work world over time, as well as added 'background' insight.

For Bubble, my online worker forums ethnography was more specific. I did not find any online forums specifically for app-based childcare workers; instead, on the advice of participants, I joined dozens of public³ self-organised Facebook groups for London-based nannies and au pairs (but which often included parents looking for nannies/au pairs). These groups were not discussion-based like UberPeople, instead used just to advertise jobs and worker availability - my interviews suggested in-depth discussions were reserved for private, worker-only WhatsApp groups which were closed to researchers. Whilst I made some ethnographic jottings from Facebook groups for broader sector context (for example, what kinds of jobs are being advertised when, wages, locations), and used the search function to locate specific issue threads, I primarily used these groups to recruit interviewees. I posted on each group several times over an eight-month period:

PAID INTERVIEW OPPORTUNITY

Hi all,

My name is Dalia, and I'm an academic at the London School of Economics (here is my research profile: <https://bit.ly/3BbfU1m>). I'm currently doing research on how apps are shaping the experience of childcare work.

I am looking to interview nannies/au pairs/babysitters who use Bubble to find work. I am interested in chatting to you about your experiences, and get an idea of what you think the impact of apps is on the sector.

The interview (45mins - 1.5 hours) can be done remotely via zoom, or I can come to you if you are in London. I will pay the equivalent of your hourly rate for your time, rounded up to the next hour (so for example, if the interview takes 40 minutes, I'll pay for an hour, and if it takes 1h20, I'll pay for two hours of your time).

Please DM me or comment on this post if you are interested - happy to give more information on the research upon request. Of course, the interviews will be entirely anonymous and untraceable to you in line with LSE's research ethics policy.

Thanks!

Fig3.1 Screenshot of researcher's Facebook recruitment post for Bubble workers

Semi-Structured Interviews

³ Public Facebook groups are those anyone can join i.e. do not require declaration of status as a nanny/au pair/parent to join.

Semi-structured interviews were conducted at several sites - interstitial spaces, go-alongs and recruitment via online forums. 70 workers were interviewed - 48 from Uber and 25 from Bubble. Whilst fewer Bubble workers were interviewed, these interviews were longer (typically one hour) compared to Uber driver interviews (typically 20-40 minutes), and included repeat interviews (Lucy, Silvia, Yara, Julia and Maria all did between two and three interviews). Pseudonyms were used throughout - the only biographical data recorded was age, ethnic/racial identity (as defined by the participant), previous occupations and site of interview/recruitment (Appendices 1 and 2). This data was collected because of my interest in how platforms (re)shape the trajectory of racialised surplus populations - knowing what sectors and communities platforms draw their workforce from was essential. There was little gender diversity in both case studies - all Uber driver interviewees were men, and all Bubble interviewees women. This was a deliberate sampling decision given the criticality of gender in shaping experiences of racism (Bhattacharyya, 2008) and deeply gendered nature of both sectors. Including male care workers or women Uber drivers would complicate the study beyond its scope, and I did not organically come across either over the research period. Where consent to record interviews was obtained, interviews were taped using iPhone or Zoom recording and saved as encrypted files. Otherwise, handwritten notes were taken during the interview. As platform workers were generally unwilling to sign forms for fear of being identified, I was given permission by my institution's ethics committee to proceed with verbal, rather than written consent. Every worker was given my name and institution.

Interviewees were also paid for their time. The ethical implication of paying interviewees is contested; some researchers consider its potential as a fair exchange for research participants' time and effort (Hammett & Sporton, 2012; Belfrage, 2016; Cheff, 2018). Others are concerned it can be coercive for economically vulnerable participants, who may feel unable to decline financial incentive (Head, 2008; American Sociological Association, 2018; Gelinas et al., 2018). My decision to pay participants emerged from two considerations: firstly, as platform workers are paid hourly, the hour spent with me theoretically could be spent working, and therefore payment offsets the potential cost to workers directly incurred by choosing to be interviewed (Warnock et al., 2022). Secondly, to ensure parity across my interview set - ride-alongs necessarily involve paying interviewees for the journey through which the interview is conducted. This is an established principle in platform courier and taxi work research - however is less automatically transferable to feminised childcare sectors. Applying a blanket principle of interviewee payment precluded a gendered unevenness of participation benefit. I initially pegged payment to the worker's hourly wage depending on interview length (with payment rounded up to the nearest hour), to ensure the payment was not disproportionately high and therefore potentially coercive. However, I quickly noticed this reproduced racialised inequality of payment; participants of colour and undocumented participants generally had a

lower hourly wage (for reasons developed in this thesis), and so were being systematically paid less for interviews. To rectify this, I began paying all Bubble participants the upper limit of hourly wage I came across on the Bubble app - £30, following Belfrage's (2016) call that participants should be "paid well or not at all" (p.69). For ride-alongs, I paid the fare as set by the app – as this would be what the driver received for that time in a non-interview context. I believe this struck a balance between recognising the piecemeal way platform workers' time is valorised, recognition of value of participant's time and expertise, ensuring gender and racial parity across interviewee participation and ensuring payment does not become coercive. Funds were covered by the Research Training and Support Grant provided by my PhD funder (the ESRC). After transcribing and (re)reading interview data, a thematic network analysis based on the Attride-Stirling model (2001) was conducted using coding software NVivo. This allowed me to comb through vast data sets, and extract salient themes at a Basic, Organising and Global level using a grounded inductive approach.

Situating the Researcher

My identities and networks were constitutive elements of my data collection and analysis (Giddens, 2013; Dean, 2017). My connections with trade unions were my initial entry point to both fields, which shaped my interactions with workers accessed directly in this way. I accessed the AVA following recommendation by a core organiser in the Uber union, and became a caseworker after being known to another organiser in the Uber union. For Stay and Plays, union mediation was more direct; I accessed it only because I had a trusted relationship with lead NSN organisers, established due to shared political backgrounds. Indeed, contact with all lead organisers were established through mutual friends in the labour movement space. I had previously tried to contact unions via their public e-mail address, but received no response, indicating my eventual access depended on networks within the labour movement. Further rapport was established with lead union organisers through initial discussions about shared political backgrounds, and my involvement in broader labour movements gave me loose insider status, which shaped my relationship with potential participants. As often happens when researchers study activist groups they sympathise with, this raises ethical dilemmas (Lichterman, 1998), like feeling obliged to fulfil the group's expectations of research outcomes and gauging appropriate researcher positionality (Collins, 2005). To ensure diversity of perspectives, I made sure to include extensive research non-unionised participants using forum-based recruitment, ride-alongs and where possible, interstitial places. For both case studies, being a person of colour helped build trust and rapport with racialised workers, who frequently used phrases like "you know how it is" when discussing experiences of subtle racism. This identification of shared experience encouraged interviewees to express feelings of discrimination.

In conclusion, whilst platforms spatio-temporally and conceptually challenge conventional workplace ethnography, they also provide opportunity for researchers to develop agile, reflective mappings of working space, time and identity. Beyond the practical access challenges, this has theoretical implications. As platforms blur lines between work and non-work, platform 'world-of-work' ethnography goes beyond who does what work and how – questions of what work is, and when and where it happens is thrown into question. These questions are not new: feminist political economy, social reproduction theorists and geographers of informal work have long grappled with them. However, as platforms bring these questions to new sectors and workforces, they are becoming more generally salient for work ethnographers. This chapter has reflected on an example of multi-sited 'world-of-work' platform ethnography - one which searches not for the definitive workplace, but conceptualises work as 'staged' at multiple temporal and spatial registers.

PART TWO

Carved Out: The Post-War Social Contract and Classification as Racial Practice

INTRODUCTION

The platform labour literature situates the (mis)classification of workers as a central mechanism through which platforms have risen in power - it produces on-demand labour by facilitating the maintenance of a cheap, easily disposable/interchangeable workforce. As outlined in earlier chapters, this is typically narrativized as a neoliberal decline of post-war labour standards; as a broader “breakdown of the post-war regime...a firm-led institutional restructuring...undermining the security and liveable wages of the post-war regime” (Schor et al., 2020, p.836). However, as labour law scholars like Ashiagbor (2021) and Dubal (2021) argue, the post-war employment standard was a historically and geographically specific legal form; one which was based upon the exclusion, extraction and exploitation of (non)classified labour. Non-classification here refers to the forms of labour that are not legible within the standard employment relationship, yet which makes possible the labour that is legible within this form. In this sense, non-classified workers are typically a form of surplus population; despite being excluded from rights-conferring categories like citizen and employee, they are necessarily included as a form of informal, undervalued labour (Rajaram, 2018). Dubal (2021) refers to these policy-based processes as ‘carve-outs’ - and situates the social division of labour through racialisation and gendering as central to the ‘carving out’ of certain kinds of work and worker from standard employment. It is through these social processes that social reproduction and the informal labour undertaken by racialised workers around the world have not been ‘seen’ by the standard employment relationship (SER)

Crucially, the category of 'employee' is co-constitutive of other rights-conferring categories, such as human and citizen. Not only are certain populations carved out of employment through the legal infrastructure of bordering regimes - others who may have the legal status of citizen are carved out through racialised notions of belonging to the nation state. Whilst all worker - including employee - labour is in the Marxist sense exploited, the SER represents an institutional humanisation of some workers. The rights conferred by worker status are a recognition of the embodied and social needs of human beings: to rest, to take breaks, to grow old, get sick, require care and have families/loved ones to take care of. The SER subsidises these needs through pensions, parental leave and holiday and sick pay. The carving out of populations from worker status is therefore also a carving out from human status; one that is increasingly being constituted through the carving out from citizenship.

Therefore, what is often called worker (mis)classification can be understood as a continuation and expansion of the historic 'carve-outs' of particular kinds of work and worker from the SER through social differentiation. Rather than the SER expanding to include those previously excluded, the SER has shrunk because of neoliberal restructuring in the wake of repeated financial crises (Bhattacharyya, 2018). In turn, the boundaries being (re)drawn around the category of worker are grounded in shifting processes of racialisation, gendering and bordering; the emergence of increasingly exclusionary migration regimes, racialised ideas of deserving and non-deserving workers (Shilliam & Tilley, 2021), the attributing of certain forms of labour as 'natural' to certain populations and the naturalisation of hierarchies in social reproductive labour along racial lines.

Part Two explores how platformisation is situated in this legacy of racialised and gendered carve-outs and how these carve-outs are mediated differently considering the cultural and technological capacities of platform capitalism. 'From Textiles to Taxis to Technofixes' situates the rise of Uber in the history of racialised exclusions of South-Asian, specifically Pakistani and Bangladeshi, men from formal labour markets. It explores how platforms repackage these exclusions through a narrative of entrepreneurship, which is mediated by the cultural story platforms tell of themselves: of being neutral intermediaries that provide an antidote to the racial micro-aggressions and hierarchies of the formal workplace and confer a restored masculinity through the paradigm of 'being your own boss'.

'Platformising the Global Care Chain' explores how domestic work platforms exploit multiple gendered and racialised carve-outs; the gendered carve-out of care labour from policy definitions of 'work', the racialised carve-out of undocumented workers from formal labour markets through the hostile environment and the racialised carve-outs of waged domestic workers from the limited, complicated social

status conferred by motherhood and wifehood. This chapter unpacks the migration and racialisation processes that track certain women into this role, situating platforms as reanimating racial divisions of reproductive labour, where the personhood and labour rights of one type of woman is subordinated in the production of another type of woman. In this way, both chapters explore the co-constitutive nature of the racial fix and platform fix post-2008; whereby the ability of platforms to (mis)classify workers intersects with the myriad ways in which certain populations are racialised and gendered out of rights-conferring categories.

-4-

From Textiles to Taxi Ranks to Technofixes

The composition of the Uber workforce in London is deeply entrenched in pre-existing racial divisions of labour in the city's taxi economy. This chapter explores the ways in which Uber captures, expands and re-animates these racial divisions through the discourses and materialities underpinning the techno-fix promise. It begins by contextualising the prominence of South Asian, specifically Bangladeshi and Pakistani, men in the Uber workforce within the history of these communities being structurally positioned as surplus populations in London. It then explores how platforms reconfigure this relationship through the language of entrepreneurialism, facilitated by the legal status of intermediary, and the technological capacities of remote management. Finally, this chapter explores the ambivalence with which workers approach this reconfiguration - and the varying ways in which they buy into, appropriate and reject this repositioning.

Racial Divisions of Labour in London's Taxi Economy

London's taxi economy is comprised of two parts: private hire vehicles (PHVs) and hackney carriages (also known as black cabs or taxicabs). PHVs have historically offered a more affordable, locally available service compared to taxicabs, which tend to operate largely in Central London. The main functional difference between taxicabs and PHVs, is taxicabs are allowed to 'ply for hire' - in other words, to be hailed from the street - whereas PHVs, also known as minicabs, must be pre-booked through a registered operator. Fares for taxicabs are also set by councils, and calculated using a meter - whereas PHV fares are set by the operator. The famous aesthetic of taxicabs - the 'black cab' - distinguishes them from PHVs, which typically do not look different from other cars on the road. Taxicabs have an established history in the city; the term 'hackney carriage' dates to the 1600s, when the hireable horse drawn carriages were regulated for the first time. Meanwhile, PHVs have been operating in the UK since the 1960s, largely through local minicab offices, but they were not regulated in London until the 1998 PHV act (Skok & Baker, 2019). PHVs and taxicabs are both licensed and regulated by Transport for London (TfL). The process of licensing PHVs and taxicabs have become increasingly similar over the years, with the main difference being that taxicabs drivers must pass 'The Knowledge' - a training three-year training course in which drivers gain a detailed knowledge of central London.

When Uber entered London in 2012 it specifically transformed the PHV sector, which had previously been run by locally owned minicab firms. Several participants in my research had been working as drivers for minicab firms and moved to Uber as clients shifted towards the platform. As it stands, all app-based drivers are PHVs, but not all PHVs are app-based drivers; although dwindling, a small number of local minicab firms are still in operation. However, much of the PHV sector in London is now mediated via apps, with Uber having the largest market share; Uber drivers comprise more than 45,000 of the 100,000 PHV driver licenses currently on the road (PHV Statistics, 2022; Uber Update, n.d.)⁴.

Data from TfL indicates a racial division of labour in London's taxi economy (figs 4.1 and 4.2). The PHV workforce, which is now represented mainly by Uber and other app-based drivers, predominantly comprises racialised minority men - mainly 'Asian or Asian-British' (with 'Asian' here referring to Bangladeshi, Pakistani, Indian and Other), followed by 'Black or Black-British' (with 'Black' referring to African, Caribbean and Other). Within the category of 'Asian and Asian-British', Pakistanis represent the largest share (30%), followed by 'Other' (30%), Bangladeshi (28%) and Indian (7%). Amongst 'Black or Black British', the vast majority are African (91%), followed by Other (5%) and Caribbean (4%). TfL data does not disaggregate this data according to migration status; however, all drivers must have Right to Work under Hostile Environment legislation to get a license, and therefore must either be British citizens, or have either pre-settled or settled status. Prior to Brexit, this also included people from the European Union. Meanwhile, the taxicab industry is 64% white British.

The dominance of white British men in taxicab driving is well documented – former London Mayor Ken Livingstone tried to diversify the trade in 2005 by organising roadshows to raise awareness amongst ethnic minority communities of taxicab driving as a career (Berry, 2005). Yet there are no publicly-available empirical studies explaining why taxicab driving remains so white male-dominated – since Mayor Livingstone's campaign, the number of Black and Asian taxicab drivers has only increased by a few percentage points. Speculative suggestions by politicians and journalists include the higher barrier of entry for taxicab rather than minicab employment – the infamous 'Knowledge of London' test takes three years to complete and includes a complex English-language oral exam that could exclude recently arrived migrants (Lyll, 2007). Other explanations could include differentials in time – PHV licenses take twelve weeks to acquire, compared to three years and £10,000 of study costs associated with the Knowledge test. Empirical study on migrant divisions of labour in London more generally suggest that qualifications with high time cost

⁴ TfL data on PHV licenses are not disaggregated by operator. However, the introduction of Uber to London created record-breaking increases in PHV licenses, indicating that much of this expansion was comprised of Uber and other app-based drivers. Interviews suggest most PHV license holders in London rely wholly or partially on Uber and other apps, as consistent work is no longer available from local offices. Therefore, PHV data can be taken as a proxy when assessing overall trends of app-based drivers.

are more viable for citizenized workers with full access to the welfare state, or more embedded local community support networks (Lyon et al., 2011). Yet, this does not explain why so few second- and third-generation ethnic minorities work as taxicab drivers. One explanation could be less intergenerational connection to taxicab work compared to minicabbing, given the historic connection between South Asian communities in particular and the minicab industry.

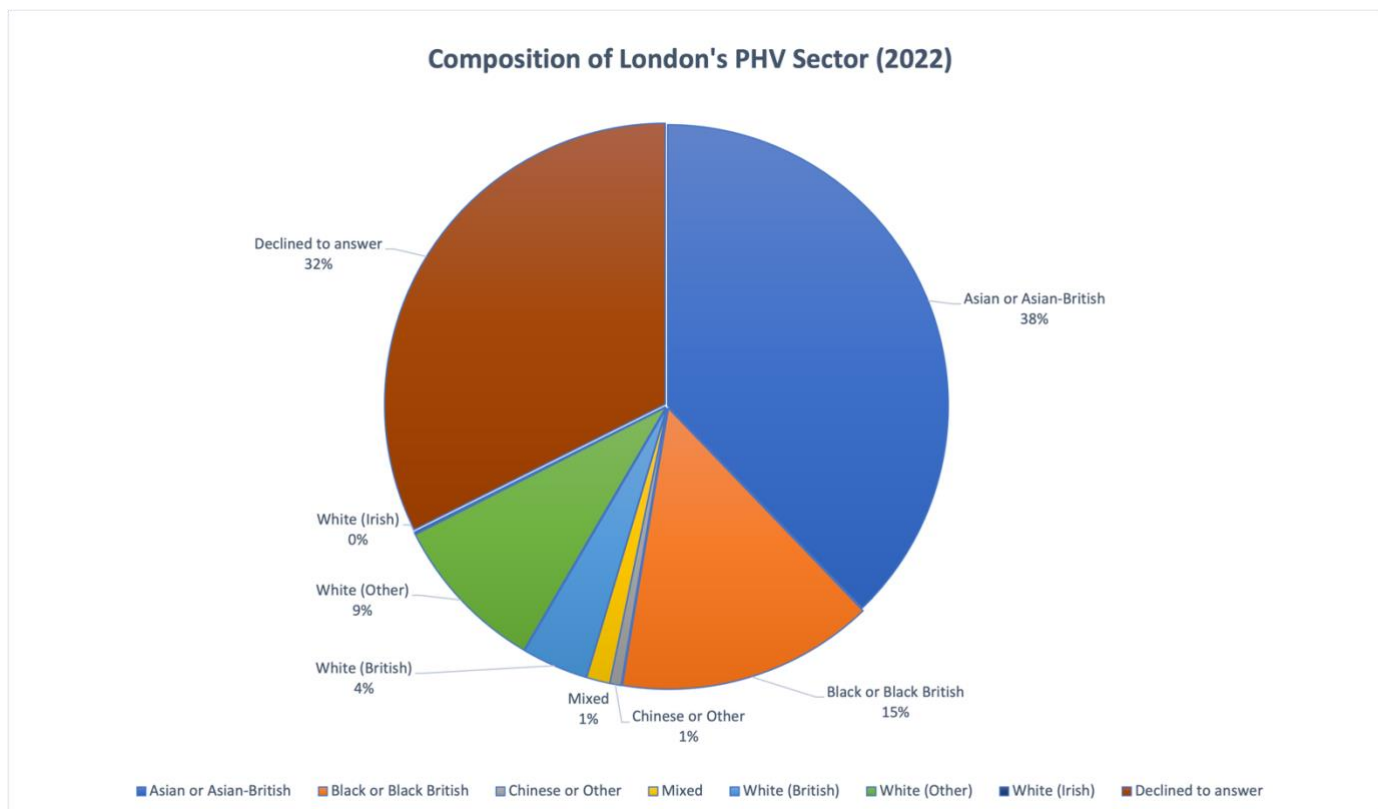


Fig4.1 Composition of London's PHV drivers (TFL, 2022b)

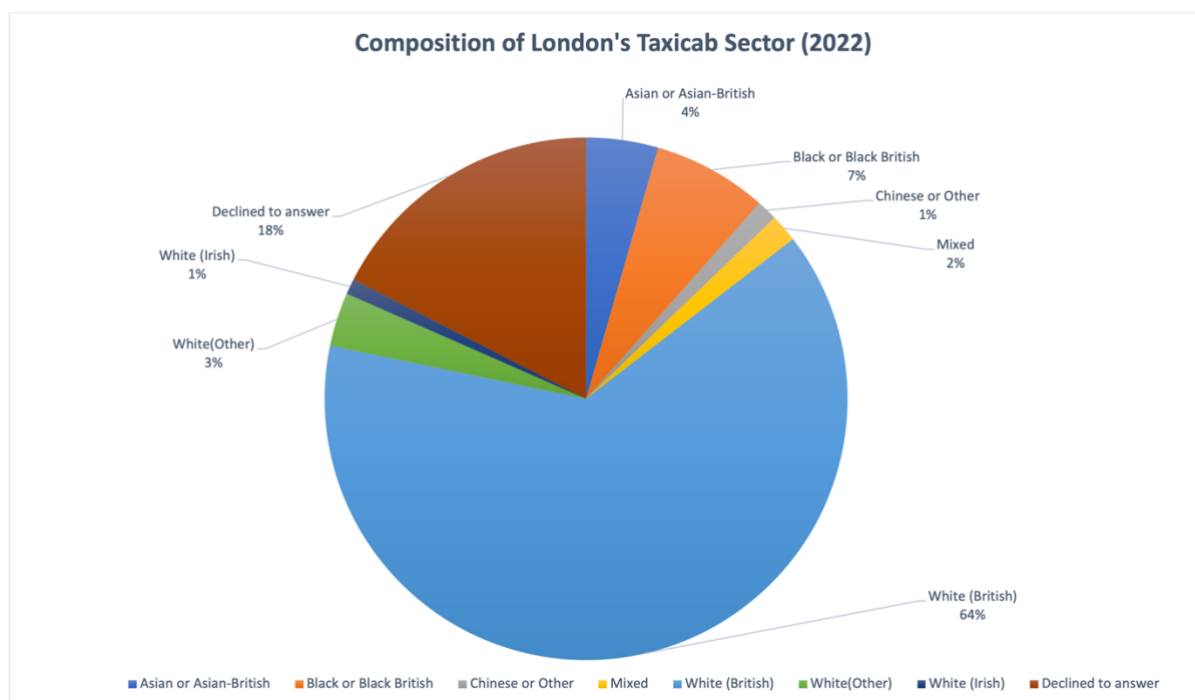


Fig4.2 Composition of London's taxicab drivers (TfL, 2022b)

From Textiles to Taxi Ranks

The specific representation of Asian and Asian-British men in the PHV sector is part of a broader story of the structural position of Pakistani and Bangladeshi men in the British economy; specifically, as racialised reserve armies of labour. It is important to note here that South-Asian is somewhat of a misnomer when it comes to describing a racialised class position in Britain (Ballard, 1983); there are key differences for example, in the entry and trajectory of East African Asians compared to those hailing from Pakistan and Bangladesh. Afro-Asians entered the British labour market from a position of relative privilege compared to other racialised migrants of the 20th century – whilst they started in low-wage work, this privilege created greater chances for mobility. As political refugees hailing from an English-speaking context, they migrated with some material and human capital from having worked as civil servants and traders for the colonial government in the East African protectorate. Meanwhile, the post-war migration wave (stretching from 1950 to the 1970s) tracked people from Pakistan and Bangladesh into the labour shortages of manual industries in areas like Lancashire, Yorkshire, Manchester, Bradford and Slough, and East London – regions that were especially impacted by the class-making catastrophe of deindustrialisation in ways that resonate today. Migration from India was deeply variegated along class lines – some migrated into professional roles in the NHS, others in manufacturing, textile and services sectors. As Virdee (2006) outlines, the trajectory of Indian and Afro-Asian migrants, compared to those hailing from Bangladesh and Pakistan have bifurcated – with

the former “consolidating their position as successful small property owners....[experiencing] genuine upward social mobility”, and the latter experiencing “little change in their material circumstances” (p.613). Virdee puts this down to anti-Muslim racism, racialised labour market exclusion and successful anti-racist organising in the Greater London Authority, which opened up opportunities for migrants that had disproportionately settled in London, rather than the Midlands and North. Whilst both turned to self-employment following deindustrialisation, *the terms* of this self-employment looked very different. Indeed, the class position of Bangladeshi and Pakistani communities - and their structural role as reserve armies of labour in the British economy - more closely aligns with those of Caribbean descent, than with other segments of Britain’s ‘South-Asian’ population (Modood, 1996).

Kalra’s seminal work *From Textile Mills to Taxi Ranks* (2000) captures the class trajectory of Bangladeshi and Pakistani men in Britain, and their shift of this population from employment in manufacturing to self-employment in the service economy, in line cycles of economic boom and bust. Kalra’s primary focus is on migration routes from the Mirpur region, where mass displacement from the building of the Mangla Dam led many to settle in Britain, primarily in the North of England and the Midlands. Here, post-war labour shortages in Britain’s textile industry were filled by workers recruited from the former colonies, specifically from Kashmir and Pakistan (although routes from South-Asia to mill towns also included some Indian migrants). These migrant populations largely settled in mill towns Lancashire, Oldham and Yorkshire, where many still reside - although post-deindustrialisation, South-Asians have been part of the broader labour migrations from the North-East to London. Whilst Britain was still a manufacturing powerhouse, by the time South-Asian men started to enter it, the textile industry was beginning to decline relative to its earlier status. Those who had made up the workforce previously - largely Irish and Eastern European men, as well as some British women - had begun to exit the industry in favour of better conditioned and better paid work in factories and light industrial and engineering sectors.

The textile industry survived as long as it did because South-Asian men were available to occupy jobs that had become unattractive to workers who were racially privileged in the labour market. South-Asian men were gendered and racialised into this labour - ideas of the effeminacy of their bodies was understood to make them more suited to this work: “you need nimble hands for spinning and weaving - women and Asians are good at it”, (Fevre cited in Kalra 2000, p.92). They were also willing to work the longer, unsocial hours incurred by the 1959 Cotton Reorganisation Act, which introduced a twenty-four hour workday as a temporal fix to declining productivity in the sector; as Kalra writes, “mill owners found it almost impossible to fulfil the demand for labour on the night-shift from white workers...many firms in the woollen industry in Yorkshire would never have considered operating a night-shift if it had not been for the availability of South-

Asian labour” (p.90). This restructuring of the textile industry, in which ‘family firms’ begun to be taken over by multinational corporations, meant jobs were less flexible and more demanding; shift work that, for example, had previously allowed women to work around school opening and closing times, or to take time off if their children were ill, was no longer available (Penn et al., 1990; Kalra, 2000). The prevalence of Bangladeshi and Pakistani men in night-time work continued throughout the 20th and 21st century, as did the struggle for welfare and social needs to be recognised at work. As later chapters will demonstrate, the racialisation of these issues remain salient for the rise of platforms.

1970s deindustrialisation was the final nail in the coffin of the textile industry, the fallout from which was heavily racialised - it was the workers from ex-colonies that occupied the ranks of manual and semi-skilled work that became vulnerable to redundancy. The collapse in post-war manual and factory-based employment closed the few sectors of the economy that were open to employing Pakistani and Bangladeshi men. Older men of this generation, struggling to accommodate these new conditions, relied on social welfare and limited community resources to survive, and many others returned to their countries of origin. Meanwhile, their sons, racially excluded from what remained of the formal job market, turned to varying forms of non-regular employment. Using their better grasp of English, as well as access to some family savings their fathers had accrued in the mills, they came to “disproportionately occupy the ranks of the new service sector workforce, including as insecure, self-employed, sub-contracted workers” (Virdee, 2006, p.611); sectors that would eventually be subsumed into the platform economy. The rise of the minicab industry was central to this. Pakistani and Bangladeshi men slowly started to buy run-down taxi ranks from white owners who had previously refused to enlist them as drivers, and by the late 1980s/early 90s had become an established income source for these otherwise excluded workers. This is how South-Asian, largely Muslim, men came to dominate the PHV sector in London and across the country. Many drivers began by renting their car and radio from the rank, or sharing a rented car with a friend or family member, hoping to eventually earn enough to purchase their own car (which had to be registered with the local authority)

Many of the ambivalences and contradictions that surround the employment status of Uber drivers today find their roots in these labour histories. Whilst PHV drivers were always considered self-employed - and ‘ethnic entrepreneurs’ (Ward, 1983) - this was always somewhat a misnomer. Unlike taxicabs, PHVs were not completely independent; they had to rely on the taxi ranks and offices to mediate their work, and had generally lower, more insecure wages than their white-dominant counterparts in the taxicab trade. The need for upfront capital investment, and the cap on the number of taxicab licenses issued by local authorities closed this slightly more secure livelihood from racialised workers. In turn, given the broader context, the shift from employment to self-employment in this context did not imply economic independence, upward

social mobility and ownership. Rather, it constituted a creative but “desperate move” to “accommodate the ravages wrought by industrial re-structuring and continued racist exclusion from the wider labour market” (Virdee, 2006: 612). Workers in these communities have since found themselves working longer hours, with lower wages and in dangerous and physically exhausting conditions - all without the standard employment protections they may have previously had. It is also a survival *strategy*, seen as somewhat more dignified than other forms of sub-contracted work available to them, as it theoretically allowed for slightly more control over their time. Yet, long hours, fluctuating wages and the isolation of the work was felt starkly in comparison to work in the mills (Kalra, 2000).

Worker (mis)classification as racial practice

The shift from textile mills to taxi ranks was therefore a response to what Ruth Wilson Gilmore calls the “organised abandonment that accompanies globalisation’s large-scale movements of capital and labour” (2008, p.32). Such abandonment typically intensifies in the wake of crisis - in this case, deindustrialisation - and is a consequence of the collaboration of state and market forces to withdraw resources and infrastructures from populations that have been rendered surplus. Racialisation plays a key role here, as the varying ways in which racialisation renders communities undesirable, invisible or undeserving is a key process by which it becomes possible to abandon them. Considering this, the racialised working classes of Britain have therefore always turned to varying forms of self-employment and informal work during periods of crisis as an economic survival strategy (Ramdin, 1987; Jones et al., 2012). For Pakistani and Bangladeshi men, data from the Institute of Employment Relations shows their access to the formal economy to be not only consistently lower than other ethnic groups but marked by *fluctuation* (see Fig4.3). This oscillating in/exclusion from the labour market is a key marker of surplus population status. Throughout this period (specifically 1991 to 2001) self-employment amongst Bangladeshi and Pakistani men has remained constant, whilst the wage and employment discrimination they have in the formal labour market has remained some of the most acute across all demographics (Clark & Drinkwater, 2006).

Economic activity rates by ethnic group: Men only

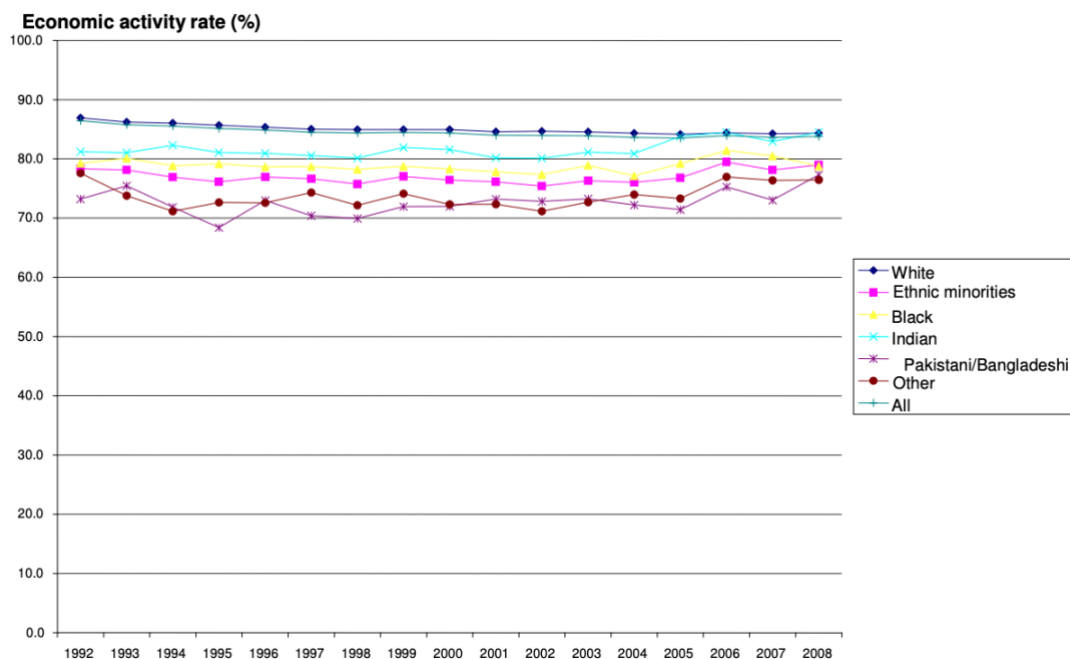


Fig4.3 IER analysis of Labour Force Survey data - 1992 to 2008 (Hogarth et al., 2009)

The 2008 financial crisis - and the period of austerity that followed it - represents a similarly catastrophic event of abandonment for these reserve armies of labour. Following the crisis, racialised minorities were the most likely to experience persistent poverty and be made unemployed, and less likely to have a financial safety net (Khan, 2008; Dorling, 2009). As has historically been true, the post-crisis shift to precarious work has been racialised: minority millennials in the UK are 47% more likely to be on a zero-hours contract (Bowyer & Henderson, 2017). For Pakistani and Bangladeshi men, this has again resulted in a turn to low-paid self-employment in sectors with low possibility for progression (Broughton, 2015). This time, in the form of worker (mis)classification in the platform sector:

Going back to when my father first came to this country - like fifty, sixty years ago. A lot of it was factory work. Like mills, steel. I live in Slough - that was like a furniture place. That's what my dad used to do - make furniture, also my cousins et cetera. They all moved to that area because it had the manual work. But it just changed so much - now we don't have any more furniture factories. And taxis are flexible, so people come into this trade and immediately get a job. Me? I couldn't get a job in the thing that I had experience in, so I did this. I tried to leave to get a job again, and I was underpaid for the job I was doing. I took it still because I was just like I gotta get myself back on the ladder again. But again, there's not much

out there. And even I'm lucky - I have a degree. Not everyone has that, and if you don't then the only job you can do is mini cabbage. But for those who don't - we can't just turn around and look at them as just unskilled people and so they can be exploited, but that's what's happening.

Azlaan

The familial labour history Azlaan outlines here is metonymic for the broader trajectory taken by certain racialised workers in Britain whose structural position is that of a reserve army of labour. Seen from this perspective, the deployment of independent contractor status in the platform economy is part of a legacy of racial carve outs of minoritised workers from the post-war social contract by policymakers - specifically, the normative model of the standard employment relationship (SER). Indeed, the SER itself is "premised on white male employment in the primary labour market" (Ashiagbor, 2021: 525). The platform labour literature is correct to point out that the independent contractor status is a *misclassification*, in the sense that platform workers do not have the autonomy, career progression and upward mobility typically associated with self-employment. However, when viewed through a racial historic lens, it is useful to understand this also as part of a longer legacy of *differential* classification of particular work and workers as existing in a limbo state between self-employment and the SER. The contradiction of 'ethnic entrepreneurship' in the case of reserve armies of labour - where self-employment is a survival strategy rather than an indication of ownership or petit bourgeois status - predates the rise of Uber and is deeply connected to the racialisation of this work and its workers as essential, yet unwanted - and therefore left hustling on the edges of the formal economy (Hodges, 2007; Sharma, 2010). The deployment of (mis)classification is therefore part of a longer history of co-constitution between racial difference and legal frameworks governing labour. Yet, the illegibility within the legal form of structural forces shaping actually-existing labour allows for the historic *racial practice of worker (mis)classification* to be invisibilised.

This builds on Dubal's (2021) work connecting the denial of employment rights to platform workers through legal (mis)classification with the historic exclusion of Black-American workers from labour protections of the First and Second New Deals. Such measures enabled early 20th century industrialists to retain the cheap, disposable Black labour upon which they relied, despite the formal end of slavery. The racialised effects of these measures were not always achieved through the explicit naming of race, but through sectoral and geographic proxies. Crucially, the concentration of Black workers in particular sectors and geographies - domestic and agricultural labour in Southern states - was deeply embedded in the history of US slavery. In London, a similarly iterative relationship between policy-based racial carve-outs from employment protections, and the contemporary (mis)classification of racialised platform workforce exists.

However, this relationship is not as driven by the settler-slavery dynamic of US racial capitalism is identified by Dubal. Rather it is inflected by Britain's colonial history and continues to be a key driver of racialised surplus populations from the colony to metropolitan centres. Indeed, London's status as a global city, primed for entry by platforms wishing to achieve 'global' status, is deeply connected to its history as a colonial core (King, 2015). In this vein, platform worker (mis)classification draws on a legacy of state and market collaboration to strategically include (and often actively recruit) racialised workers during economic boom - or to prevent the beginnings of decline - and abandon those same workers during economic crisis.

Of course, not all platform workers will have labour histories that - like Azlaan's - neatly represent the trajectory from textiles to taxis to technofixes. My interviews demonstrated a variety of journeys into Uber work. Many, like Azlaan, had previously driven minicabs, and therefore shifted to Uber as part of the platform's broader capture of the PHV market. However, many others joined Uber due to job losses or unsustainable conditions in other racialised working sectors. History in insecure work like retail, restaurant work, hospitality, logistics and manual labour were particularly over-represented in my interviewee sample. Others had some history in the public sector - working as, for example, healthcare administrators and bus drivers. In my research, this labour history was more typically found in workers of African descent, who would identify as 'Black or Black British' in TfL's data. This resonates somewhat with analysis by Virdee (2006) who situates the public sector as a relatively significant employer of African and Caribbean men and women. This is in part due to the legacies laid by the Windrush generation in building the public sector, and due to anti-racist organising in Greater London - where most Black workers were concentrated in the 1990s - which forced Labour-run councils to take on equal opportunities policies that opened up non-manual work in the local public sector to ethnic minority workers (Solomos, 1989; Virdee, 2006). However, common across the labour histories of those I spoke to, was unstable access to the SER, racial discrimination in the broader labour market and declining conditions in their previous work:

I got to an age where it became harder to find good work. You're up against young people who are prepared to be paid less, and what I was doing in IT - it's so automated now. I couldn't retrain at this age, so I thought I'd try this and now I do it full time...it's hard, but it's better than going into an office and dealing with office politics every day.

Anthony

Uber is the only place Muslims can get easy work. Anywhere else, you get judged for being Muslim.

Hakim

It's not sustainable to make a living in this work - but there's nothing else to do. I use Uber as a stop-gap basically between jobs that will pay me a fair wage.

Kai

I was a bus driver, but the conditions and pay were getting worse and worse, and the attitude towards the staff was changing...if you complained or had a grievance, they were uninterested. Nothing would change. Stress levels meant I just had to leave.

Mehmet

Another important dynamic here is the 2004 expansion of the European Union, and the granting of freedom of movement by the British state to newly integrated member-states. As outlined in earlier chapters, whilst this meant Eastern-European workers *technically* had full access to Britain's labour market, racialised exclusion limited their participation to low-wage, insecure work (Portas, 2018; Spigelman, 2013), including Uber driving. Whilst the labour histories of Eastern-European migrants in Britain are not as established as it is for those from the former colonies, the ways in which their racialisation has been articulated through both the "race-migration nexus" (Drnovšek Zorko & Debnár, 2021) *and* their association with low-wage labour, has situated them within the racialised surplus populations undergirding the (re)production of London. Eastern-Europeans have joined the ranks of Pakistani, Bangladeshi and Black workers who find themselves self-employed, overqualified and in insecure work in order to survive their uneven access to the regular labour market: a class position that is articulated through and alongside their racialisation (Fox et al., 2012; Khattab & Fox, 2015). Classified in the TfL data as 'White(Other)', this community represents a sizeable portion - 11 percent - of Uber drivers in London.

Eastern-European drivers I spoke to hailed largely from Romania, with some representation from Bulgaria, Lithuania and Albania. For all that I spoke to, Uber was their sole source of income. Many saw it as long-term work - Bogdan, for example, shifted from the intense manual labour of construction work to Uber. Drivers like Alexandru and Viktor began working for Uber several years ago (six and four years respectively) - they joined when Uber offered wages that could not be found in other forms of work available to them, and have struggled to manage the steep decline in pay and conditions since. For others, Uber is a stop-gap between redundancies. Gezim, for example, turned to Uber after being made redundant from his

job as a chauffeur during the COVID-19 lockdown. When I met him at Heathrow car park, he had a book in his hand - he was studying to acquire a heavy goods vehicle (HGV) license, so he could leave Uber. At the time, Britain was experiencing a highly-publicised shortage of lorry drivers due to Brexit-induced labour shortages and the pandemic, and a range of incentives had been introduced to make HGV driving more attractive to those like Gezim ("HGV Driver Shortage", n.d.). Legible in these stories, is the status of Eastern-European workers as existing on the turbulent edges of the formal economy, in other words, as reserve armies of labour. Whilst their labour is somewhat formerly integrated into London's urban economy (in that they enter the labour market as documented migrants), they and their labour are differentially classified outside of the SER through and alongside their racialisation. This racialisation codes them as having "low-education, poor English-language skills, difficulty in assimilating and unsophisticated manners proving their low cultural capital" (Portas, 2018, p.114), whose acceptance of lower wages would undercut the wages and conditions of 'deserving' white British workers, folding them into the migrants-as-job-stealers trope (Spigelman, 2013). In this way, whilst their labour is on paper 'legitimate' (as in, legal), their presence in the labour market is racialised as illegitimate. Within this contradiction, emerges a racialised carve out from regularised labour - and Uber captures, expands and animates these racialised carve-outs, absorbing it into the worker (mis)classification model that has been so instrumental to their growth.⁵

Essential but unwanted: immigration regimes and the platform labour model

The interaction between platformisation and the historic carve-outs of racialised labour is further mediated by the changing politics of migration following the 2008 financial crisis, in which policymakers carved out racialised migrant populations from the welfare state. This means that the social welfare that had previously cushioned the blow of deindustrialisation (particularly for older workers) is scarcer, further bonding carved-out populations to exploitative platform labour models. This particularly came to light during the pandemic lockdowns, when drivers had to continue working for Uber as they initially could not access furlough schemes available for PAYE employees. When the equivalent of furlough for self-employed workers was introduced, platform workers like Uber drivers disproportionately fell through the cracks of the system and were unable to recover the promised 80% of their earnings during lockdown (Collard et al., 2021).

⁵ Freedom of movement for European workers ended on 31 December 2021, when Britain officially left the EU. After this, the ability of Eastern-Europeans to become Uber drivers has severely limited, as you must have Right to Work (i.e., settled status) to get a PHV license. Workers interviewed all arrived at Britain before Brexit came into effect, and so were unaffected by this change.

Unlike workers in other platform sectors like Bubble and Deliveroo, Uber drivers are not undocumented - they must have Right to Work to get a license from the regulator. However, the Hostile Environment means many are subject to immigration controls that deny them access to an already shrinking welfare state. These racialised bordering strategies have made migrant workers more reliant upon exploitative labour models like the platform and normalised the denial of collective responsibility for the embodied welfare needs of racialised workers. Lack of access to a welfare state and standard employment engenders systemic vulnerability to exploitative and harmful work conditions; many drivers I spoke reported pushing their physical and mental wellbeing to its limit to survive due to lack of support. This included regularly working 10-hour days, foregoing toilet breaks, and working with an impairing injury (including injuries sustained because of overwork, like knee pain and repetitive strain injury).

The racialised carving out of migrants from the UK welfare state has been underway for decades; immigration checks have been embedded in social service provision since the 1990s (Slaven et al., 2020). This has been driven by scarcity logics, propagated by politicians and the press, which frame migrants as undesirable, illegitimate exploiters of limited welfare state provision; as such, “those seeking to establish their family life in the UK must do so on a basis that prevents burdens on the State and UK taxpayer” (Home Office News Team, 2020). Consequently, migrant job seekers have had their access to universal credit and housing benefits restricted, and are, particularly if self-employed, must prove they are in “genuine and effective work” before accessing certain welfare provisions (Kennedy, 2015: 23).

This growing “welfare-immigration policy link” (Slaven et al., 2020) reached its apex in the 2012 Hostile Environment legislative framework, which expanded ‘no recourse to public funds’ (NRPF) to include anyone without indefinite leave to remain (Farmer, 2017). Here, those without settled status are cut from state services like healthcare, housing, and childcare, even if required to pay taxes (Goodfellow, 2019). Brexit then expanded the legal and conceptual boundaries of NRPF, as EU citizens became subject to the same visa process as non-EU citizens, making them more likely to be excluded from the welfare state based on immigration status. The ideological work of the ‘Leave EU’ campaign reinforced this “welfare chauvinism” (Donoghue & Kuisma, 2021), as it framed the continued free movement of EU migrants as a “threat to public services” (Gove, 2016)

NRPF involves the institutional unrecognition of migrants as populations with embodied, social reproductive needs – people who get sick or old, need housing, or have families with care needs. For migrants, these needs are considered negligible and/or the responsibility of individuals, not the state. Migrants are conceptualised as a strain on the UK economy, despite its historical and continuing reliance on

low-paid migrant workers for urban growth (Bryson & White, 2019). Indeed, whilst publicly advocating for anti-migrant policies like the Hostile Environment and Brexit, the state has been forced to consider temporary job mobility schemes to fill labour shortages in crucial logistical sectors (CBI, 2021). Here, the labour of migrant workers is understood as essential, but their existence as people is undesirable, unwanted and burdensome. The state therefore seeks out embodied migrant labour, whilst abdicating responsibility for the reproduction of that body, thereby carving them out from the post-war settlement.

This logic of being essential but unwanted is mirrored in the platform worker model, which also extracts value from their workers as employees, yet denies responsibility for subsidising the corporeal needs of those workers – through sick and holiday pay provision, and health and safety protection. Workers I interviewed saw this logic in the taskification of their work, which dictates that workers are paid only for time completing a ‘task’ instead of a wage. Drivers argued this relied on the erasure of their bodily needs, such as using the bathroom, eating or taking rest breaks – despite attendance to these needs being essential for them to work. This is compounded by urban planning decisions that hamper their ability to park and take breaks; for example, PHV drivers cannot use any of the city’s 600 taxi ranks, as they are reserved for the majority-White taxicab force to use as “rest and refreshment ranks” (TfL, 2022a). Uber drivers told me they resorted to paying parking fees to use the toilet or eat, buying items in cafes to use café bathrooms and urinating in cups in their car. Here exists a continual logic between the state and the platform of simultaneous extraction and abstraction of racialised workers, whereby particular bodies are required to perform particular labour, and yet embodied needs are abstracted from the bodies conducting that labour.

This is not to suggest conspiratorial collusion between platforms and the British state. Rather, it shows how the context producing one also produces the other; the broader context being the racialised making of surplus populations as essential but unwanted and dehumanised through material, legal and cultural processes. These populations are “unable to gain recognition or secure entry to the terms of capitalist citizenship” under neoliberal austerity (Bhattacharyya, 2018: 26). Furthermore, the denial of social protections ostensibly provided by the state and/or employer produces a highly exploitable workforce, as it creates conditions whereby expulsion from the platform can mean expulsion from the means of life not provided for elsewhere. This not only creates a workforce willing to work long, arduous hours under worsening conditions, but makes them less likely to be disruptive. Interviewees registered this; “I must provide [for my family]. I can’t be a troublemaker” (12). The platform model therefore relies on the material and cultural conditions produced by draconian immigration policy, which is in turn engendered by the racialised production of surplus populations.

From Taxi Ranks to Techno-fixes

Platform companies like Uber are therefore exploiting the racialised processes of inclusion and abandonment of workers that is endemic to the British economy - specifically, the use of contradictory self-employment to mask organised abandonment (Hall, 2021). This is further compounded by racialised in/exclusion from welfare state structures, mediated via bordering regimes. In this context, the 'taxi rank' can be understood both as the literal taxi ranks occupied by South-Asian men before the introduction of Uber, but also as an articulation of a broader historical story; a story of how Britain's varying racialised underclasses have been carved-out of the post-war employment contract, and have turned to self-employed, informal and partial work to survive periods of organised abandonment. Platforms capture and re-animate this process: through their ability to wield intermediary status, they can continue a legacy of differential classification of racialised workers - one in which surplus value is extracted from their labour, and in which they are subject to management, yet are denied the rights associated with the SER. However, the particularities of platforms, and the context in which they have emerged, (re)shapes how these contradictions are articulated and enacted. The technological capabilities of algorithmic management puts them under degrees of worker control and surveillance not possible in previous iterations of the same trend. Under the minicab system, drivers can (within boundaries set by the minicab office) set their own fares, and there are fewer restrictions on the type of car a driver can use. In this way, it is not only the case that platform drivers do not have the rights of the SER - but the intensity of management *exceeds* that of traditional employers, due to the possibilities of algorithmic management.

Yet, despite this closeness of management, Uber can deploy intermediary status in ways that create distance from the conditions they are creating. This not only exists as a legal classification, but as an *affective* condition. In removing direct contact with a human boss, Uber can make appealing claims to workforces they are trying to capture: you can be your own boss, set your own schedule, and you have nobody to answer to. Indeed, selling the *feeling* that one is in control has always been central to Uber's appeal as a post-crisis techno-fix. In midst of the post-2008 unemployment and underemployment crisis, Uber positioned itself as not only an accessible job/income-creator, but as an opportunity to 'be your own boss': an appealing sell to workers whose livelihoods had been spectacularly failed by traditional institutions. Uber's marketing strategy in its early years was pivotal in situating not only itself, but the platform economy more generally as a techno-fix to the employment crisis; it "reframed" its capturing of abandoned, carved-out workers as "an engine of economic populism" (Rosenblat, 2018, p.26). Here, the narrative of self-reliance and autonomy embedded in the worker-as-entrepreneur ideal is made more appealing by a broader context of public distrust in larger institutions. In its early years, Uber's insertion of itself within a discourse of entrepreneurship centred around the idea that driving for Uber can facilitate entrepreneurial

endeavours, as exemplified by Uber UK's first major UK advertising campaign *Get There with Uber*⁶ (Gwynn, 2016):



Fig4.4 Screenshot from 'Get There with Uber' Campaign (2016) Retrieved February 2019 from <https://www.uber.com/en-GB/blog/london/get-there-with-uber/>

As time has gone on, this has been replaced by a portrayal of Uber driving itself as an entrepreneurial endeavour. A 2023 recruitment campaign by Uber centred around the slogan 'Earn Like a Boss'. The campaign - a 30-second short video - featured 10 Uber drivers in their car, shot 'selfie style', saying things like "work when you want, take breaks when you want"; "I'm the boss"; "I will *not* work on my birthday"; "be there for your kids when they're sick"; "I can be my own boss" (Leonardo, 2023)⁷. The visual focus on individual drivers, recording themselves alone in their car conveys an independence from physical or human infrastructures of management and supervision; the driver alone oversees their fate. Accompanying social media campaigns included tweets with phrases like "Bosses set their own schedules

⁶ Sampling note: this was Uber's first an out-of-home campaign, launched in 2016 and operated across 5 UK cities including London (Gwynn, 2016)

⁷ Sampling note: this was a US and Canada-wide advertising campaign, launched in 2023 and set to last for one year. It was disseminated through social media, media partnerships, out-of-home advertising and via audio/radio (Leonardo, 2023).

and take breaks whenever they want” and “Bosses get paid when they want to get paid” (Uber 2023). Here, ‘entrepreneurship’ evokes notions of self-determination and self-reliance; a person who is unshackled by dependence on an employer or the welfare state. As Dubal (2017) - drawing on Marttila (2013) - argues, it is no coincidence that the cultural desirability of entrepreneurship is turbocharged in the wake of the 2008 financial crisis; with the collapse of the welfare state, shrunken access to regular employment and decline in employment standards, the abandoned worker becomes not only normalised, but idealised as the “quintessential actor of neoliberalism” (Dubal, 2017, p.95). Under this post-crisis entrepreneurial logic, security and employment protections are supposedly exchanged for independence, flexibility and the capacity to earn more if you work more. However, as one driver Kai put it: *“the idea of being flexible goes out the window when you have to work 10 hours a day - you can’t really do much else with your time, so what good is it being ‘flexible’?”*. There is an extensive literature which, like Kai, critically engages with Uber’s deployment of entrepreneurial discourses - exploring how the promise of entrepreneurial autonomy is, in reality, limited due to the control exerted by algorithmic management techniques and the demands created by the broader conditions of the work (Rosenblat, 2018; Wood et al., 2019; Barratt et al., 2020; Casagrande et al., 2021; Lata et al., 2023).



Fig4.5 Screenshot from 'Uber: Earn Like a Boss' Campaign (2023) Retrieved May 2023 from <https://www.lbbonline.com/news/uber-lets-you-earn-like-a-boss-in-latest-campaign>

Ironically, the very technological capacities of algorithmic management which undermine Uber's promise of entrepreneurialism, are also central to Uber *seeming* to fulfil its promise. The technological capacity of algorithmic management produces the *feeling* that one is in control - or 'the boss' - which allows Uber to position itself as a techno-fix to the crisis of unemployment *and* the crisis of trust in mainstream economic institutions. The deployment of addictive, 'gamifying' technologies nudge drivers into behaviours, whilst creating the feeling that one is making these decisions off their own accord, as physical management structures are removed. Through gamification, Uber "attempts to direct individual interactions in an indirect way, by influencing their choice architecture, inducing rather than prescribing behaviour" (Gritsenko & Wood, 2022). Vasudevan & Chan (2022, p. 868) summarise three key parts of this algorithmic technique: representation (the strategic withholding and visualisation of work-related information), direction (the normalisation and deployment of scores, rewards, competition) and intervention (nudging drivers to increase productivity). Examples include surge pricing, where drivers are shown 'heat maps' that designate areas where there is potential for higher earnings. Others include 'quests', where drivers can unlock 'rewards', such as lower fees, by completing a certain number of trips in a row. Vasudevan & Chan (2022) describe how Uber deploys visuals, metaphors and vernaculars associated with video games in order to create conceptual associations between 'fun'/'leisure' and Uber driving; the use of 'GO' buttons and flag emblems to denote completed 'missions', for example. Gamification mediates often mundane tasks as puzzles and challenges in ways that are deliberately addictive - scholars have even compared Uber's gamification of work to the design models of online and video gambling machines (Kim & Werbach, 2016). Pushing this further, Dubal (2023) argues that the "trickery and opacity" (p.39) of the algorithmic techniques deployed - particularly in the concealment of information and the uneven, unpredictable absorption of financial risk - makes 'gambification' rather than 'gamification' a more apt metaphor for the form of management taking place.

Either way, the capacity of algorithmic management to 'gam(bl)ify' work allows Uber to elicit consent from drivers to work long hours and take on uneconomical jobs (including jobs that may - after expenses - actually cost drivers money), without having to directly manage or order them, and without a physical management structure. This is central to the ability of Uber to evoke an entrepreneurial ideology; the managerial structure is not only hidden, but individualised and internalised - workers discipline themselves within a framework set by the platform (Manriquez, 2021). This produced contradictory responses in drivers I spoke to. On multiple occasions, a driver in the same conversation would refer to themselves as their own boss, yet laugh at the notion of being - in Uber's words - a 'driver-partner'. They were broadly aware of the management techniques they were subject to - particularly those that had been driving for a while:

They are using the workers. They design the app in a way that makes you chase it - so they make it sound like you're making the decision, but I don't have any choice. They will say there's a surge for example, so everyone goes to [the surge area], then you find there isn't [a surge]. You're driving for 10 hours a day to make up for the fact that the hourly rate has gone down. I deliberately don't bother trying to be a 'platinum' driver or whatever. I know that's how they reel you into doing loads of useless jobs - that's how they reel in the younger ones.

Amir

The new [drivers] try to hit those targets and work like a donkey, doing 100 jobs in 7 days for the 'Conquest' challenge. They are the ones who don't know their situation, because [experienced] drivers are refusing the little jobs.

Hakim

The app is designed to make me feel addicted. In the beginning, there was a real addiction for me. But at least the way they paid before was fair - in my eyes, where I was working before [as a hospital administrator], no matter how much work I did, I didn't get recognition. But here, the more I do, the more I get paid. If I'm at home, I'll see it's surging, put my clothes on and go to get those jobs. But then often by the time you get there, it's not surging anymore, and you just get all the jobs that have been declined. Then you see there's a surge in another area, and you go there - so now, I'm out and chasing the surge.

Iqbal

Iqbal's ambivalent relationship to his own agency neatly summarises how many drivers I spoke to feel. Despite a lack of physical management structures, drivers understood themselves to be subject to close management. Many felt tricked, angry and hopeless in the face of information asymmetry, lack of control over their wages and the unpredictability of 'deactivation'. Yet, there was a seeming preference for the removal of the overseeing eye of the Taylorist human manager - even if at times, they expressed deep frustration at being unable to hold visible individuals accountable for their conditions, particularly when things had gone wrong (for example, they had been deactivated following a passenger complaint, or they had issues with their account). This ambivalence to categories like 'entrepreneurship', 'being your own boss' and 'flexibility' was consistent throughout conversations with drivers:

The good side is that I don't have to talk to a boss. Nobody is pushing me. If you feel unsafe, you can just switch off the app and kick the customer out. If I see they are angry, I cancel because I don't want to have bad energy in my car. You have to make them feel this is my car, my rules.

Antonio

The app is boss [laughs]. It's good though, because he doesn't know who you are, what you look like or your religion. It's fair. When working for a cab firm, if [the manager] doesn't like you for whatever reason, [he] won't give you a job. In the cab firm, they always give the good jobs to their friends. You also must work when you are told.

Abdi

If you work in a local minicab office, you have a visible controller who always gives the best jobs to his mates. Whereas with Uber there isn't as much bias. The algorithm doesn't fairly distribute the work - but it's still better than a controller who gives jobs based on bribes or speaking the same language.

Kai

The way workers like Antonio, Abdi and Kai represent the contradictions between the affective conditions facilitated by the remote algorithmic organisation of their work, and the reality of power that their work is enmeshed within resonates with Purcell & Brook's analysis of hegemony, consent, coercion and resistance in platform work:

What is called self-exploitation, such as bogus self-employment, becomes the ultimate expression of freedom in the labour process, since it seemingly obviates the need for a manager or boss. Within the discursive armour of neoliberalism, *being your own boss* is raised to the highest pinnacle of labour market freedom, irrespective of whether workers' experience of the labour process is one of continued control and exploitation.

(2020, p.397)

The broader racialised context here is multi-layered. What is seen as a comparative 'fairness' of algorithmic management is felt to offer some respite from the everyday interpersonal challenges of discrimination at work. Like Kai, drivers broadly knew the algorithmic allocation of work was not transparent or fair - that work was assigned on a basis other than simply who is closest to the job. Yet, the removal of interpersonal negotiations with a human boss conferred dignity and *felt* fairer, even while being frustrating. This reflects popular concepts of data-driven technology as being more 'objective' than human judgement (Noble, 2018; Benjamin, 2019). Driver preference for non-human management must be understood in context of other forms of work available to the segment of the workforce Uber is capturing. For many drivers I spoke to, the physical exhaustion, long hours and low wages of Uber driving were expected in most lines of work available to them. Yet, the removal of immediately tangible physical/human management structures, even if this meant internalising management as self-discipline, was valued as a marker of dignity, and provided a working lifestyle unavailable to them elsewhere. They associated human supervisors with more tangible, intolerable racism, disrespect and discrimination; what Anthony calls 'office politics'. Hakim adds more detail as to the tone such 'office politics' take:

Uber is the only place Muslims can get easy work. Anywhere else, you get judged for being Muslim. In my other workplaces, my beard was much longer, and I trimmed it to fit in with people around me. But I feel less judged in Uber - you get judged, but not as much.

Hakim

Hakim's statement - "you get judged but not as much" - is a crucial insight. As chapter seven will demonstrate, Uber drivers are still subject to racist, in-person management from passengers in the form of ratings. Management is outsourced to passengers, whose ability to rate and report drivers underpins systems of probation, performance review and contract termination. These systems are opaque and abstracted, deeply discriminatory and lack of employment status means they are difficult to challenge. Drivers are aware that their livelihood being dependent on the judgement of passengers creates a racialised precarity - indeed, Hakim himself was one of many drivers I spoke to trying to exit the industry by gaining an HGV license due to stress. However, drivers are making informed calculations about what conditions they find more tolerable on a day-to-day basis - and partial relief from human bosses informs this calculation. The *feeling* of freedom from the human supervisor - an affect produced by the technological capacity of Uber to have someone work without physical management structures - is rooted in real experience and has meaning; even if it is a long shot from the story Uber tells about itself:

I was a bus driver for ten years, in the restaurant business and I worked in a warehouse. Those are also long hours; you are tired by the time you go home. It's a headache working with other people. This job is more relaxing - I can call my wife, if I need to go back home I can. I can take my wife, kids to school and incorporate it into the job.

Ibrahim

Ibrahim's labour history represents the kinds of sectors and work experiences historically undertaken by and available to London's racialised surplus populations (Will et al., 2009). In the context of a declining welfare state and care infrastructure, the ability to attend to his family's care needs is a meaningful, survival-based reclamation of time unavailable to him in other potential forms of work. Not having to "ask permission" or "answer to anyone" was routinely raised as a reason for staying on Uber - particularly for drivers with transnational lives, who make frequent visits to family in other countries. This reclamation of time dovetails with a sense of reclaimed space: "my car, my rules", as Antonio put it, was also a frequent refrain. The physical infrastructure of their workspace (in this case, their car), and how they are physically situated within it is meaningful. Consider Hakim's insight on the interpersonal challenges that come with being a visually stigmatised body (in his case, a brown Muslim man with a beard) in a more classically Taylorist workplace. Whilst the splintering of the workplace and the workforce has other costs - loneliness, isolation, difficulty organising - there is an attachment to the idea of 'my car, my rules'; a theoretical ability to assert boundaries within their space. Uber speaks to this in their 'Earn like a Boss' advert campaign: the driver is *alone* in their car, they are recording *themselves* - in the broader context of racialised work, such an image carries weight.

My Car My Rules

Gender also comes into play here - most of the drivers I spoke to who had families were sole breadwinners. With this gender role, comes financial and time demands. Not only is there, as Ibrahim outlines, a need to be present for familial needs, but the desire to feel in control of one's economic fate is tied up with the gendered role of sole breadwinner. The abiding fear is that one can lose their job and fail in the gendered role of provider - in this context, being in control of how much you work and when, *feels* less precarious than putting your economic fate in the hands of a human boss. This concern is socio-cultural as well as material; as Giazitzoglu & Cored (2023) demonstrate in their study of Black immigrant entrepreneurs in England, the attachment to entrepreneurship and 'being your own boss' is rooted in the fact the alternative is being at the bottom of a rigid workplace hierarchy with little chance for progression.

The draws on a legacy of co-constitution between masculinity and entrepreneurship (Mulholland, 2003; Bruni et al. 2004; Giazitzoglu & Down, 2017) - defined through associations with self-sufficiency, being a 'provider' (particularly in a transnational sense - for families at 'home' and in the host country) and refusing subordination. The analysis of McDowell (2020) and Batnitzky et al., (2009) the gender politics of migrant men-dominated service labour is particularly insightful here: if the service sectors that working-class migrant men come to dominate are associated with feminised work identities, the embodied masculinity of individuality, self-governance and ownership of space becomes a gendered appeal. Even though, as chapter six will demonstrate, Uber driving draws on a wealth of emotional labour - a feminised labour skill - this sits within a longer history of working-class, racialised migrant men employing "flexible and strategic masculinities" in their work, in order to fulfil a range of gendered roles transnationally and locally (Batnitzky et al., 2009, p. 1280).

'My car my rules' is, of course, complicated. Most Uber drivers do not actually *own* their car - they are rented or financed through loans. Their ability to set boundaries is compromised by a ratings-based management system. As chapter six will demonstrate, whilst Antonio talks about cancelling passengers who bring 'bad energy' into his car - and this is *theoretically* true - most drivers avoid cancelling or getting into conflict with passengers, fearing passengers will make retaliatory use of reporting/rating mechanisms. During the COVID-19 pandemic, drivers told me they stopped asking passengers to wear masks - even though this was Uber policy - because of the conflict it caused, and the fear of retribution-based ratings. Yet, in the broader context of racialised labour markets, the embodied, transient independence Uber's management 'techno-fix' has something to offer - even if that offer is contradictory and compromised. This resonates with Dubal's research of Uber drivers in San Francisco:

More than a mere "illusion," immigrant and racial-minority drivers' approval of their independent contractor status enabled them to exert control over their bodies, to manage their time and transnational lives, and to affirm their sense of dignity as working-class men.

(2017, p.112)

Crucially, these ambivalences are not new or unique to platform labour - but they are re-animated by platformisation. Read in the context of the literature on 'ethnic entrepreneurship' in Britain, the relationship between migrant masculinities, racialised state and market abandonment and the turn to 'self-employment' is a consequence of the structural role played by racialised surplus populations in the boom-bust cycle of a neoliberal economy. As Kalra's study of the shift from textile mills to taxi ranks demonstrated,

the decision of the younger generation of textile mill workers to move into the taxi and takeaway trades was a survival-based shift, and a way of making a place for themselves and their community in the face of state and market abandonment. In this context, categories like choice/coercion and agency/structure are not binaries - but spectrums; and where drivers' decisions fall is deeply shaped by a broader context of racialised class politics.

In conclusion, what the literature calls the (mis)classification of platform workers can in fact be understood as a continuation of the *differential* classification of racialised workers - a phenomenon that has existed throughout the 20th and early 21st centuries. In this way, the conventional historicization of platform labour as part of an overall decline of the post-war social contract - resulting from the shift from post-war capitalism to neoliberal capitalism - does not capture the full context in which platforms are emerging. There are in fact continuities between the racialised carve-outs from the post-war social contract governing labour, and the survival-based turns to self-employment, and the particular kind of contradictory self-employment the literature has identified platform labour to be. This unique kind of 'self-employment' or 'entrepreneurialism' does not connote social mobility, ownership or economic progression - but rather survival in the face of organised state abandonment. Platforms *do*, however, reconfigure what this looks like: the capacity of algorithmic technologies to both conceal and abstract management structures, whilst greatly increasing the intensity, granularity and opacity of management surveillance deepens the contradictions that had already existed for self-employed racialised surplus populations. This dynamic creates new attachments to entrepreneurial identities - attachments that are widespread, ambivalent and deeply shaped by the broader context of racialised in/exclusions - from the labour market and the welfare state.

-5-

Platformising Global Care Chains

Like the taxi industry, the platformisation of domestic work emerges from a history of racialised and gendered carve-outs - albeit on different grounds. Through gendered and racial formations, waged domestic work(ers) in Britain have historically undergone a double carve-out. Firstly, policy-based carve-outs from the SER, and secondly socio-cultural carve-outs from normative, racialised ideals of womanhood. This chapter explores how platforms interact with these legacies to reconfigure historic links between domestic work and racial categories - refracting historic global care chains through the platform fix. The first half focuses on the carve-out of waged domestic work from the SER. Drawing on workers' interviews, it maps three 'routes' into Bubble work, rendering legible the racialising and bordering processes within each route. It then unpacks the racialised carve-out of waged domestic work from normative womanhood. Using interviews and a discourse/visual analysis of Bubble's marketing material, it explores the racialised and gendered identities the platform care 'fix' is producing and being produced by. Given Bubble's functionality is less commonly known than Uber, it is important to first outline how Bubble works, and its location in the platform care context.

Situating Bubble

Bubble is an app-based care platform that organises au pairing, nannying (including night nannying) and babysitting work, founded in 2016 by 'entrepreneur dads' Ari Last and Adrian Murdock. Like most on-demand labour platforms - Bubble has relied on VC seed funding from its inception - its first seed round raised £500,000 from five angel investors (Perez, 2017), and its second (in 2020) raised £2 million through VC firm Ada Ventures (Warner, 2020). This on-demand app format separates Bubble from other online marketplace care platforms (like childcare.co.uk or care.com), which operate primarily as website-based forums, and are more oriented towards setting up long-term relationships. Being on-demand and app-only, means Bubble mimics the 'slick' feel of dating and taxi app more than other care platforms: in founder Ari Last's words, Bubble was intended to bring parents the "convenience-features we all associated now with on-demand apps" to childcare (Basul, 2019).

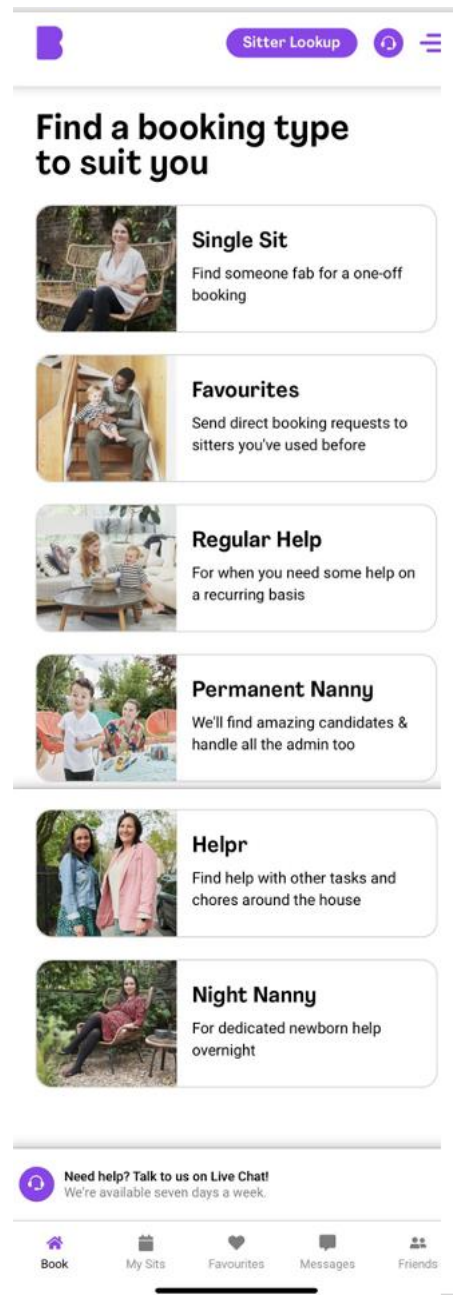


Fig5.1: Screenshot of Bubble's parent app homepage ("Book", 2022).

Initially, Bubble exclusively organised ad-hoc 'express' sits, bookable with just 30 minutes' notice. Enabling this patchwork childcare model, which does not require embedded relationships built over time, is a key intervention of Bubble in the sector. Bubble eventually expanded its offering to include general domestic work (a 'Help'). Bubble leaves the remit of this role undefined, but offers suggestions like dog walking, tutoring, house sitting, cleaning, elderly companionship and errand running when in-app booking (Fig5.2).

18:49

← Book a Helpr

Booking Type
Helpr

Pick a date

| Sat | Sun | Mon | Tue | Wed |
|-----|-----|-----|-----|-----|
| 30 | 1 | 2 | 3 | 4 |
| Sep | Oct | Oct | Oct | Oct |

Start Time
Select

End Time
Select

[Add Another Date](#)

Job Description (Required)
e.g. dog walking, tutoring, house sitting, cleaning, elderly companionship or running an errand...

Flexibility
Are these times flexible?

See who's free

Fig5.2 Screenshot of 'Helpr' booking form on Bubble's parent app ("Book", 2022). Retrieved 30 September 2023.

In 2019, Bubble added a permanent nanny service, which operates like a traditional nanny agency; parents pay a premium rate to be matched with a regular, long-term childcare worker by Bubble staff (i.e., without algorithmic matching). Yet, the bulk of Bubble's model is short-term, ad-hoc 'sits' - 35 percent of sits are booked within 48 hours' notice (Yedroudj, 2019).

Bubble also follows the 'dual value production' associated with on-demand platforms (van Doorn & Badger, 2021); Alongside VC funding, it relies on both speculative data asset valuation, and the extraction of rent from each service exchange. Bubble takes a percentage booking fee from the parent *and* deducts commission from the worker's wage; the exact percentage varies between 5 and 10 percent and declines with increased app use. Families can avoid booking fees by subscribing 'Bubble Plus' for a monthly fee, however commission is still deducted from the worker's wage (Jess, 2022). Consequently, Bubble is designed to capture all interactions between care providers and receivers. If users are algorithmically flagged as having taken - or attempting to take - their interactions off-app, they (typically workers) are

suspended (although my interviews indicate many Bubble users manage to move off-app without being caught). This contrasts to platforms like KoruKids, care.com and childcare.co.uk, which orient towards matching care receivers and workers, after which both parties negotiate their relationship off-app. Due to its on-demand valuation model, Bubble tries to establish a relationship of dependence between *Bubble* and the parent, rather than between *worker* and parent. This design choice reflects an assumption that even if the same worker is doing multiple sittings for the same user, these sittings are organised ad-hoc.

The Double Carve-Out

Before analysing how Bubble reconfigures global care chains, it is important to historicise these care chains - and the racial divisions of reproductive labour they engender. Who has historically done paid domestic work in Britain, and under what terms? Since industrialisation, domestic work has been undertaken by both unpaid and paid workers. Unpaid domestic work has been largely undertaken by women family members under the rubric of familial love, not work. Paid domestic work has sat ambivalently between work and love and located outside formal, regular employment. In Britain, it has historically been undertaken by racialised, migrant women - a configuration constituted via a 'double carve-out', whereby paid domestic work is carved-out *both* from classed and racialised ideals of womanhood, *and* the SER, as explored later in this chapter. This double carve-out contextualises and remains legible within care platforms like Bubble, where the gaps of unaffordable and unavailable childcare systems are plugged by a patchwork of algorithmically-managed and often criminalised migrant women.

Waged domestic childcare has historically been undertaken by different actors, whose roles have been defined through and alongside changing political-economic contexts. From Victorian-era servants to the au pairs, nannies and childminders popularised from the 1970s onwards (Delap, 2011)⁸. In Britain, the devaluation of this work has co-produced historically-contingent ideas of racial difference; racial Others have been consistently tracked into and constituted through their association with this labour. In the early 20th century, young Welsh and Irish women served English and Scottish upper classes; towards the mid-20th century, Jewish refugee women were accepted under domestic work visas (Delap, 2011). During the post-war era, the live-in servant was replaced by the informally recruited cleaner, au pair and nanny - many of whom were European refugee women from Spain, Portugal and Italy. This continued throughout the mid-late 20th century, when South-East Asian women also began working in households across Europe, including Britain (Sayres, 2007). This trend increased exponentially with neoliberalisation, with workers largely hailing from Latin America and South-East Asia: particularly the Philippines, Thailand, Argentina, Colombia, Brazil,

⁸ For a breakdown of these roles by tasks and legal status, see Appendix 4

and Peru (Ehrenreich & Hochschild, 2002). Eastern-European women also joined the domestic workforce in Western Europe, first as undocumented workers in the 2000s, then as documented workers using such jobs as 'toehold' occupations following EU expansion (Delap, 2012).

Today, Bubble primarily brokers nannies, au pairs and babysitters (although, as Chapter Seven explores, Bubble previously-held distinctions between these classifications). These workers do not have to register with Ofsted, the UK government department responsible for inspecting childcare (Ofsted, 2018) - and many do not, because they have irregular migrant status, and because of the time and expense of applying. Babysitters and au pairs have always been excluded from employment frameworks - with the former classified as 'self-employed' and the latter explicitly classified as *not* workers, but people on 'cultural exchange'. Whilst nannies should, for tax purposes, be employed by the family they work for, on a PAYE contract, most are not. Indeed, there are hierarchies within nannying, between professionalised, often upwardly racialised, citizen workers, who are classified as employees and brokered via agencies, and irregular migrant nannies who work informally. Bubble primarily captures the latter, as a Nanny Solidarity Network (NSN) organiser put it:

Apps are for migrant workers - mainly undocumented. There aren't really migrants in agencies. Agencies don't help migrant nannies, and that's where the good jobs are.

Before platforms, nannies, babysitters and au pairs were sourced via word-of-mouth or specialised nannying/au pair agencies. The rise of childcare platforms (and general marketplace platforms, like Facebook and Gumtree, that are used to recruit childcare) has made hired domestic childcare more accessible, as families no longer rely on being in the right social networks and can avoid expensive agency fees.

Crucially, Bubble captures segments of paid domestic work that are carved-out by policymakers of regulatory and employment frameworks. Bubble circumvents the legal requirement that nannies be employed by families through several means: firstly, like most platforms, it classifies itself as a technology company, not an employer: as a "platform that connects Parent users with Sitter users" (Terms of Use, 2019). It also classifies the work it organises as "babysitting appointments" (Terms of Use, 2019). Finally, it exploits a legislative loophole that exempts nannies from employment status if they work for three or more families (Mann, 2022), which most Bubble workers do due to its ad-hoc, patchwork childcare recruitment model.

The Double Carve-Out: The Standard Employment Relation

Neoliberal globalisation renders waged domestic work both essential yet carved-out from regulatory frameworks governing migration and employment. These carve-outs are historically constituted through legal, political and socio-cultural differentiation processes that together produce irregular migrant women workers who are informally recruited into reproductive labour gaps in global cities. Ehrenreich & Hochschild (2002) situate this as one manifestation of global care chain circuits, where displacement and bordering processes push women from Global South economies into the North and consign them into informal economies through systemic irregularisation. Its location in the shadows of the formal economy situates domestic work as a consistently reliable option for irregular migrant women workers: neoliberal austerity, increasingly mobile upper- and middle-classes, ageing populations and increased labour market participation by upper- and middle-class women produces a consistent, systemic demand for hired domestic work (Alcázar, 2019).

Domestic work has been carved-out of the SER by policymakers through gendered socio-cultural boundaries around the conception of work. The domestic worker's workplace - the home - is ideologically constituted as antithetical to the workplace conceived under patriarchal capitalism, situating it outside the remit of employment law. Indeed, Britain has not signed onto the ILO Convention 180 on Domestic Workers, on the basis that health and safety standards and working time limits are onerous and inappropriate to impose on private employers in their home (Mantouvalou & Albin, 2012). Even for the minority of domestic workers who are formally registered, regulation focuses on protecting care service receivers from abuse, rather than worker rights (Anderson, 2014a). Even where regulations apply, standards are poorly enforced because the home is considered private space.

Furthermore, continuities between unpaid and paid reproductive work complicates the contractualisation of domestic work (Barbagallo, 2016). As Anderson (2014a) argues, employed labour is legally coded *through its distinction* from family labour – yet, paid domestic work often *looks* like unpaid work done by family; an older child looking after their younger sibling, for example, “is not child labour, even if they are being paid” (p.33). Domestic work is therefore often ideologically constructed within the realm of ‘help’ or ‘chores’, rather than employment - as fictive kinship (Anderson, 2014a). Under this rubric, live-in domestic workers (‘family workers’) are a ‘part of the family’ and therefore exempted from fundamental labour norms. Here, domestic workers who are treated ‘as members of the family’ regarding accommodation, meals, tasks and leisure activities are exempted from National Minimum Wage (NMW) regulations (Sedacca, 2022). This fictive kinship relies upon and produces gendered labour exploitation. It

also resolves the contradiction of commodifying activities ideologically and spatially situated *outside* the market; activities *supposed* to be done for *love* but must be *purchased* because the nuclear family can no longer fulfil its reproductive needs (Ehrenreich & Hochschild, 2002).

This gendered erasure in employment law converges with migration policy to irregularise the domestic workforce. Poor conditions and lack of protection/social status means citizen women are reluctant to do this work, instead undertaking opportunities in the formal economy (including in institutionalised childcare, like nurseries and day-cares). Herein lies the racial and migrant division of childcare work, whereby those working in the domestic sphere are largely racialised, irregular migrants, and those in institutionalised, non-domestic childcare are predominantly white British (DES, 2021). Yet, waged domestic work is not legible in the UK's 'skills-based' migration system. There is no skill 'tier' recognising *long-term* domestic employment, and therefore no regularised route for long-term domestic labour migration. Women migrate to fulfil systemic demand for domestic workers yet are themselves irregularised by a migration system that does not recognise their work.

Even prior to Hostile Environment, the few legislative frameworks governing migrant domestic workers - the Au Pair Visa and the Overseas Domestic Work (ODW) Visa - did not fully situate this as *labour* migration. The Au Pair visa, abolished in 2008, explicitly stated au pairs were *not* workers; their arrangement a 'cultural exchange' (hence why au pairs had to be foreign). Au Pairs were therefore exempt from labour rights - they were not waged, they received 'pocket money'. Following Britain's withdrawal from the EU, which curtailed freedom of movement for 'low-skilled' workers, the au pair category had to be expanded to include UK and Irish citizens. Otherwise, au pairs can only be (legally) hired if eligible for settled/pre-settled status under the EU Settlement Scheme or have a Youth Mobility Scheme visa⁹. Despite plugging essential reproductive labour gaps, au pairing remains legally codified as 'cultural exchange' (Cox & Busch, 2018).

The ODW visa, introduced in 1998, was only available to workers accompanying their employer to Britain - however workers could change employer. This was amended in 2012 under the Hostile Environment; domestic workers now can accompany their employer to Britain, but can only stay for a non-renewable six-month period, and cannot change employer without losing their status (Gower, 2016). Both frameworks never *fully* recognised migrant domestic work as labour migration - and this has been further concretised by the Hostile Environment and Brexit. Domestic workers' experience of an overall tightening

⁹ Visa for 18–30-year-olds from Australia, Canada, Monaco, New Zealand, San Marino. Those from Hong Kong, Japan, South Korea and Taiwan can apply, but only if selected via ballot

of border controls is compounded by their gendered exclusion from the category of worker - let alone 'skilled' worker.

Frameworks like the ODW/Au Pair Visa and 'family worker' exemptions do not broadly apply to Bubble workers, who are generally not live-in workers, or people migrating with an employer. Yet, these codifications illustrate a general conceptualisation of domestic work in Britain's legal and regulatory infrastructure. It shows how the carving-out of domestic work from employment law dovetails with systemic production of irregular migrant women workers through immigration law. Through shared illegibility within both labour and migration frameworks, domestic work and undocumented migrant women are systematically brought together.

These strategic gendering, racialisation and bordering processes contextualise the rise of platforms like Bubble. The historic carving-out of domestic workers from worker status, articulated through gendered notions of work/non-work, and the racialised and bordered making of informal work(ers) flows into the core techniques of platform capitalism. Historically ambiguous boundaries around *what* counts as 'work' and *who* counts as a 'worker', dovetails with the (mis)classification and taskification underpinning platform work. This model works by retaining the racialised, gendered and bordered carve-outs from the SER that produce the hired domestic workforce, whilst mediating them through the logics of platform technology.

Push and Pull: Mapping the Bubble workforce.

So how are these labour and migration carve-outs legible in make-up of Bubble's workforce? It is impossible to encompass the full breadth of Bubble workers in one study; a diverse range of social, political and personal factors bring people to on-demand care work. However, through interviews and participant-observation of NSN gatherings, I identified three 'pathways' into Bubble work. The most common route was of undocumented workers from Latin America, specifically Brazil. The second was documented, but racialised migrants from Brazil, and Central, Eastern and South-eastern Europe (CESEE). The third, was white *and* racialised British women. Legible within these three pathways are the carve-outs and labour market exclusions that have historically captured and tracked surplus populations into waged domestic work.

It is worth noting the conspicuous absence on Bubble of South-East Asian women, who comprise the majority of ODW visa recipients (Leghtas, 2014) - and for whom there is a longer legacy of state-sponsored domestic labour migration (Syres, 2007). Explanations of their absence were not immediately

obvious from conversations with organisations supporting these workers - like Voices of Domestic Workers, Kanlungun and Kalayaan. One interviewee, an organiser for NSN assumed the following:

Brazilians and South Americans aren't in proper domestic work because we don't have agreements in place like the Philippines. For the domestic visa you must come through an agency, and it's a crazy amount of money for people from South America. So, they just say they're au pairs. But I don't see it as that - they say it's au pairing, so people get paid less, but they're still doing the same as a domestic worker.

However, the reasons behind ODW visa overstayers from the Global South beyond Latin America not taking up platform care work should be explored in further research.

Pathway One: Undocumented migration from Brazil

The most common worker profile was a young woman who had moved from Latin America - most commonly Brazil - within the past five years, the majority of whom were undocumented. As Silvia said when introducing herself: *"I'm from Brazil - I don't even have to say that"*. Many were in their early 20s and had either recently graduated from or were currently students at universities back home. Their routes to London varied. Those who can prove European ancestry and therefore access a Spanish, Portuguese or Italian passport had the freedom to move and work in the UK as European citizens, prior to Brexit. Unlike Uber workers, the pathway for regularised Latinx Bubble workers came not through a history of colonisation by Britain, but by Portugal and Spain - which becomes connected to the UK via the EU. Most, however, were undocumented/irregular, often overstaying tourist and student visas. Since 2000, tightening border controls for non-EU migrants has restricted regularised migration pathways from South America to the UK; outside of accessing ancestral European citizenship, the only pathways are an asylum petition (during which one cannot legally work), or an employment contract in a 'high-skill' sector (Gutiérrez-Rodríguez, 2010) – both of which are highly inaccessible. Many therefore have to work irregularly to survive; this could look like entering 'legally', but overstaying 'illegally', or entering 'legally', but working 'illegally'.

Sizeable Latinx migration to the UK is relatively recent. Whilst Latinx labour migration into the US care sector is well-established, for the UK this is a largely post-2000 phenomenon. As Martins Junior (2022) argues, migration from Brazil to London is deeply variegated by race, gender, class and region. Those with ancestral European citizenship who can 'legally' live and work in the UK are typically racialised as white in Brazil and from the upper and upper-middle classes. Those without are more likely to be racialised outside

of whiteness - an expansive, fluid category that, according to Brazilian census, encompasses Black (preto), brown (mestiço/pardo), Asian (amarelo) and indigenous (indio) Brazilians (Martins Junior, 2022). Quantitative research in 2016 found most Latin American migrants in London came via an EU passport, and half identified as 'White Other' (McIlwaine & Bunge, 2016, p.14). The Brazilian women I spoke to generally came from large cities, and whilst they were not all white, most were middle-class and without a history of doing paid domestic work in Brazil.

In Brazil, I was working as an office assistant. I've been working since I was 15 in that company, and I needed something new. Brazil wasn't good at that moment, and it's still not great. My mum was a teacher, so I started volunteering in a school, and then decided I wanted to move from Brazil and become an au pair.

Silvia

Silvia is Afro-Brazilian, from a lower middle-class background without university education. Silvia's route was somewhat archetypal for irregular workers I spoke to - originally working as an au pair, usually for a family found online via platforms like aupairworld.com or Facebook. Once they saved enough of their wages ('pocket money'), they moved out of their host home and began working 'under the radar' on childcare platforms.

Migration to London was firstly driven by lack of opportunity at home, and secondly, desire to experience life in a European city. Discussing increasing migration of young women from Latin America, Maria – an undocumented, 22-year-old woman - pinpointed overlapping systemic factors:

I have five friends in Brazil moving to the UK now. The crisis we are living [in Brazil] - the prices are so high, inflation is insane. It's hard to buy even food. We have a terrible president - Bolsonaro - and the pandemic hit us hard. Many other Latin American countries are going through similar things too - we are seeing many people moving to the US and Europe, and it will go up.

The context Maria outlines mirrors what Ehrenreich & Hochschild (2002) call the 'push-pull' dynamic producing global care chains. Here, women from the Global South are 'pushed' from local economies, and 'pulled' into low-wage care workforces produced by care deficits in the Global North. Sassen (2002) situates this within the global city, whose "strong demand for low wage workers" converges with the dynamics that "mobilise women into survival circuits", creating an "expanding supply of migrants who can be pushed into

such jobs” (p.255). The demand is engendered by ageing populations, the consumption and lifestyle patterns of highly-paid professionals, the hegemony of dual-income professional households, and lack of state-subsidised childcare. In turn, the mobilisation of women into these sectors is driven by dispossessing macroeconomic processes implemented in the Global South to accommodate the conditions of globalisation - from forced adoption of structural adjustment programmes to financial crisis resulting from IMF-imposed debt-financing regimes (Sassen, 2008). These push and pull processes are therefore separate, but related and interdependent.

These processes have been felt sharply in Brazil since the 1980s debt crisis and have not eased. Public debt increased by over ten percentage points during 2015 (Cadena et al., 2017, p.20), compounding the ongoing inflation crisis Maria refers to. This triggered IMF-backed austerity policies that have shrunk state investment in education, infrastructure and social assistance (David & Rossi, 2019). Such measures have resulted in a stagnant economy, few opportunities for young people, an inadequate social safety net and unaffordable living costs, driving labour migration from Brazil to Northern cities – further exacerbated by the COVID-19 pandemic (ECLAC, 2021). The gendering and racialisation of Brazilian women as ‘natural’ caregivers (Ehrenreich & Hochschild, 2002; Briones-Vozmediano et al., 2020), the carving-out of domestic work from regulatory frameworks, and the criminalisation of movement from the Global South by immigration regimes, tracks women displaced by these processes into the reproductive gaps of the North.

Through this ‘push-pull’ trajectory, Latin Americans have become the second fastest growing non-EU population in London – primarily comprised of Brazilians (Gutiérrez-Rodríguez, 2010). They are often well-educated, with half having a university education, yet are over-represented in low-wage service, caring and processing jobs (McIlwaine & Bunge, 2016, p.25); sectors whose histories of informality lend themselves to platformisation. In 2016, when platform work was less ubiquitous, the overwhelming majority of Latin Americans in London were classified as employees - yet, within this, Brazilians had the highest proportion (21 percent) of self-employed or freelance workers (McIlwaine & Bunge, 2016). This tendency to be self-employed or freelance finds legacy in the over-representation of undocumented Brazilian people in app-based work; with Brazilian men disproportionately working in app-based food delivery, and Brazilian women in app-based care.

Throughout my research, there were notably more irregular migrants within the Bubble workforce than Uber. This is likely due to differing barriers of entry – drivers onboarding on Uber must have a PHV license, which has its own right-to-work checks carried out by TfL. Whilst Bubble has recently introduced right-to-work checks in their onboarding process, many women I spoke to onboarded in 2016-2019, before

the checks came into effect. These women can continue working on the platform but have been told via emails from Bubble that random documentation spot-checks may occur in future.

Pathway Two: Regularised but Racialised Migration from Brazil and CESEE

Another prominent route to app-based care work was by those working legally on EU passports, but from downwardly racialised positions in the labour market. Observation and interview data indicates these primarily comprise two groups: Brazilians with ancestral EU passports, and women from CESEE (particularly Italy, Czech Republic and Romania). These women were, prior to Brexit, not subject to border controls in the UK, yet their entry into app-based childcare work is both racialised and racialising. They turn to low-wage domestic work due to racialised exclusions from the regular labour market, and in turn their association with domestic work compounds their racialisation (Glenn, 1992; Taylor Phillips, 2013; Yam, 2023).

Take the story of Ana, a 35-year-old woman who migrated from Brazil to Europe via a Portuguese passport:

Before nannying, I did my master's in biotechnology in 2011. Then I did an internship in Spain working for a research institute - but it was only for six months and poorly funded. I was then employed there for a year, then unemployed for almost a year and going crazy. That's when I decided to pack my bags and come [to London] and see. But it's been much harder than I thought.

Ana's migration path is different to Silvia and Maria's. She has settled status, a postgraduate education and is racialised as white in Brazil. Yet, despite differential race, class and migration status, they are all doing low-wage, app-based childcare work. Unlike Silvia and Maria, Ana did not need to work under the radar, but she lacked economic opportunities commensurate with her qualifications. What started as a stopgap became a longer-term arrangement – she has nannied for the past eight years in the UK, alongside other part-time administrative jobs. Yet there are differences between Ana's experience and Silvia and Maria's – Ana was doing Bubble work *alongside* being an agency-recruited, live-in nanny Ana. For Carmen (who is Argentinian with ancestral Italian citizenship), Bubble is a safety net to fall back on when unable to find work elsewhere: *"once I graduate, if I can't find any jobs, I will still be a nanny. But once I find my job and I have a permanent contract, I will say: bye Bubble!"*. Both prospects - an agency nannying role and long-term employment - are not open to Silvia and Maria as undocumented migrants, creating different relationships to Bubble work. Ana and Carmen perceived Bubble as a toehold occupation (even if they did

it for longer than anticipated) - whereas Silvia and Maria struggled to imagine life in London without Bubble. For workers like Ana, who distanced herself from irregular Brazilian migrants like Silvia, this was a stark difference:

Unfortunately, and this is real, but women from Asia - not all of them, some are also from South America. They are not legal in this country. They take jobs with very low rates [on Bubble] and work extremely long hours. That devalues our work because so many are working for so little.

Yet, all these women occupy historically racialised locations in the labour market. For white Brazilians like Ana, the association with precarious, migrant service work in London reanimates their relationship to racialisation and class. Martins Junior describes this process in his work on Brazilian migration to London:

“Social class, gender, ‘racial’ and regional differences, rooted in the colonial and postcolonial history of Brazil [are] reconstituted in new processes of social differentiation and racialisation within the racialised political environment of London that degrades and stigmatises ‘migrants’ and ‘migrant communities’”.

(2022, p.4)

Indeed, most interviewees would not have considered doing paid domestic work back home. Domestic work in Brazil is deeply stratified along race and class and entrenched in the country’s history of racial slavery – most are Brazilian-born, Black working-class women, and many directly descended from slaves (Acciari, 2018). Those who can migrate to become domestic workers in London therefore experience considerable shifts in their race and class position compared to their location in Brazil *through* the process of labour and migration (McIlwaine & Bunge, 2016; Martins Junior, 2022). Francisca was four years into an undergraduate degree when she moved to the UK and has been working for 4 years in childcare - firstly as an au pair, and then on Bubble.

European and British people - they prefer to do ‘big’ jobs. My mum too - she said she did not raise her daughter to be a babysitter. That’s the bias.

Francisca

Similar dynamics are identifiable in the labour migration stories of CESEE women, who disproportionately represent the 'sending' countries in intra-European care chains - although many are *also* migrant care-receiving countries (Lutz, 2008; Williams, 2012). Karolina was 18 when she arrived in London from the Czech Republic in 2018. Like Brazilian interviewees, she began as an au pair. However, unlike the Brazilian women, she did not use a platform to find her first childcare position. Her initial host family was found via a Czech-based au pair agency, which specifically organises the movement of young Czech women to the UK as care workers. Whilst this indicates an institutional migration route, the work women take up through these agencies is not formalised, as au pairing is *explicitly* carved-out of employment frameworks. Yet, Karolina still had a contract via the agency:

I had no extra hours or requirements outside what was agreed. I think because I had a contract. But the second family I found through Facebook was more difficult. I left after 24 hours and stayed with a friend, because they wanted me to look after two kids full-time and do a deep clean every day.

After au pairing for a third family, Karolina moved into her own place in 2019 and started working on Bubble whilst waitressing. When furloughed from her waitress job during COVID-19, she relied wholly on Bubble for income. Whilst many participants reported struggling to find app work during the pandemic, Karolina found enough Bubble work during the summer holidays to keep her afloat. Like Ana and Carmen, Karolina saw Bubble as a toehold occupation in a longer-term migration plan:

I think I will continue working on Bubble, at least for the next two or three years as needed. I'm trying to get into [social work], so I'll start volunteering in that and keep Bubble as my main income. Then I'll probably try reducing [Bubble work] but keep it going on the side.

For Karolina, Bubble work - with its low barrier to entry - helped improve her English and provide a 'soft landing' into life outside her home country; it was primarily a route *out* of the Czech Republic ("*I just didn't like life in the Czech Republic*"). This was also true for Ariana, who moved from Italy where she was a primary school teacher, to work as a live-in au pair in London when she was 31 years old. Like Karolina, Ariana was in higher education - undertaking a second university degree. She had been working in London for six years, and felt financially and socially stable enough to transition out of childcare work due to working conditions:

I didn't see this job in my future - I needed to move on with my life and my mental health was really affected by it. I like kids a lot...but I wanted to work in a team, to grow in a company, have a career

and have more rights. In this job, most families don't pay [National Insurance] for you or give you proper contracts. And having to constantly change families is mentally stressful. I was just done.

There is a growing scholarship analysing the participation of CESEE migrants in the UK social and childcare sector as hired *household* help, which echoes the 'push-pull' dynamic of Latin Americans (Williams & Gavanas, 2008; Cox & Busch, 2018; Turnpenny & Hussein, 2022). Indeed, the two regions have often been compared within development studies - scholars like Love (1996) and Vesalon (2021) argue post-Soviet Eastern-Europe and Latin America occupy similar positions in the global (semi-)periphery. Drawing on Szlaifer's argument that Latin America and Eastern-Europe are "two laboratories of underdevelopment" underpinning the modern European world economy (2021, p.31), Vesalon argues *both* regions are integrated into the global economy based on financial dependence and "indefinite postponement of the last dreams of convergence" (2021, p.106).

These parallels have intensified post-2008, as IMF- and EU-driven austerity measures compounded the impacts of financial crisis on the population, 'pushing' young, educated people out of CESEE, and into racialised locations in the low-wage UK labour markets - particularly (but not exclusively) in London (Finnsdottir, 2019). Like Latinx workers with EU passports, CESEE migrants have settled status in the UK, but experience racialised labour market exclusions that push them into low-wage, self-employed and irregular work. Indeed, the labour market location occupied by migrants from Romania and Bulgaria is most aligned with that of Pakistani and Bangladeshi workers - they are most likely to be in non-permanent, fractional work, and most likely to be overqualified for the work they do in the UK (Fernández-Reino & Rienzo, 2022). To an extent, this pre-dates the 2004 EU expansion. Since the early 1990s, Poles have disproportionately populated the ranks of the UK's domestic workforce. However, since their status was regularised, domestic work has become more of a 'stepping stone' in their labour migration story (Delap, 2012) - which is legible in Karolina's understanding of the role Bubble plays in her future.

As outlined in earlier chapters, EU expansion was a racialising moment for Eastern-Europeans in Britain (Fox et al., 2012; Drnovšek Zorko & Debnár, 2021). Their entry into the UK labour market was accompanied by press-driven moral panics, which marked them as innately and 'culturally' different, inferior and unsophisticated (Portas, 2018) - whose inherent 'cheapness' threatened the economic prospects of 'deserving' white British workers. Despite (prior to Brexit) having legal access to regular employment in the UK, Eastern-Europeans have experienced racialised exclusion from the SER. Indeed, Karolina and Ariana both turned to Bubble after failing to access formal, permanent childcare opportunities via agencies, even though they are eligible for agency recruitment:

I never been lucky enough to have an agency nanny job. Agencies can be good but can be a waste of time because you go through all the paperwork and interview and then the agency is not serious about the job.

Ariana

The relationship between labour market location and racial difference is co-constitutive; racialised labour market exclusion leads to reliance on racialised 'serving' work - which includes domestic work. As Nicky Busch writes:

Regardless of social class in the country of origin, levels of formal education reached or qualifications, migrant women employed in the in-home commoditised childcare sector in the UK are commonly perceived, treated and paid as something akin to a domestic servant....in the eyes of employers, social class origins, formal education and hard and soft skill sets of migrant workers are understood within a context of employment in the downgraded, racialised, classed and gender sector in which migrants are performing

(2013, p.544)

Despite differing local contexts, Francisca, Ana, Karolina and Carmen are all racialised through and alongside their labour migration into domestic work. This continues a legacy of racial politics within white-skinned migrants in the UK workforce which, for example, marked Irish and European Jewish workers as racially inferior in the 19th century (Virdee, 2014, 2017). What Fox et al. (2012) call "degrees of whiteness" (p.680) are articulated through linguistic, religious, class and nationality, rather than skin colour - indeed, white Brazilians and CESEE migrants are likely to identify as (and be identified as) 'white (other)' (McIlwaine & Bunge, 2016; Blachnicka-Ciacek & Machine, 2022). The racial politics of CESEE and EU-passport holding Brazilian workers becomes legible when compared with the experiences and trajectory of white Bubble workers from Australia and New Zealand on Youth Mobility Visas (of which I encountered very few). Whilst both groups have right to work, their differential relationships to whiteness change their relationship to Bubble. For Frankie, travelling to the UK from Australia was about seeking adventure. Whilst she also used Bubble to top up au pair work, her experience of both was different from that of Latin American and CESEE women I interviewed:

I've been a live-in au pair for three families, and I always had the daytime free, so I just [used Bubble] to find casual daytime work to keep me busy. Coming from a small town back home to London was a big change - moving into nannying after au pairing was to challenge myself and do something with my time. [Moving here], I've swapped my comfort, home and friends to travel, explore and grow.

Frankie's experience sits within the conceptualisation of au pairing in policy discourse; as a 'cultural exchange' between shared, white 'middle-classness' (Anderson, 2014a). The difference between Frankie and Karolina or Francisca is consistent with Cox & Busch's (2018) research, which found au pairs from Eastern-Europe more likely to work longer hours and have less opportunity for 'cultural exchange' and study than those from Australia, New Zealand and Western Europe. Bubble was not a toehold occupation for Frankie, or part of a longer-term migration project - she frequently referenced moving back to Australia. Frankie also worked on Bubble because she plans to build a career in institutional childcare (like schooling or nursery) - she recently qualified in early childhood education. Bubble therefore allowed her to bring together a desire for adventure and her broader career aims. This was not wholly dissimilar from other migrant women I spoke to - many also relayed a desire to challenge themselves with a new experience. Yet, undertaking app-based childcare work was driven by lack of alternative ways of living in London; this did not come across as strongly in conversations with Frankie. Here, the issue is not purely migration status, but racial hierarchy within the domestic childcare labour market; and Bubble primarily relies on those at the bottom.

Pathway Three: White British and British Women of Colour

Whilst Bubble's workforce is migrant-driven, there is some presence of British workers on the platform. I spoke to six British workers - three identified as white (Daisy, Claire and Katie), and three as women of colour (two, Martha and Annie, identified as Black, and one, Tina, as Chinese/North African-British). Unlike migrant interviewees, all but two British participants were using Bubble to supplement PAYE contracted nannying. The two who were not - Tina and Annie - were university students using Bubble to supplement stipends.

The consensus among participants doing agency and platform childcare was that agency work was preferable in terms of wages, security and protection – PAYE contracts granted holiday and sick pay, and employer-covered national insurance and tax contributions. Agency work is more reliable, as workers have a clearer idea of how long a placement will last – if it ends prematurely, they have a period of paid notice, allowing them to plan their next steps logistically and financially. The more reputable (and therefore

'selective') agencies advocated for worker protections - although in reality standards are hard to enforce. Within domestic childcare, agency-contracted work most closely resembles the SER:

Say something goes wrong [in Bubble] and the parent is blaming you. There's no middle-man to sort out the situation. It's just you and the parent, and that can be difficult. It can get personal...with an agency, there's going to be that middle-man, that professionalism, that there isn't in Bubble.

Katie

My interview data suggests agency work is not equally available to all British nannies. Martha, a Black British nanny with over twenty years' experience, expressed ambivalence about getting agency work. For Martha, what Katie described as being "just you and the parent" – directly communicating with families - was actually a benefit of Bubble:

Sometimes, it feels like agencies are blocks when I just want to progress in my career - they'd tell me my rate was too high, even though it was in the middle of the range they'd advertised. One time I'm still bitter about, was this job with five-month-old twins. [The agency] said I didn't have enough new-born experience - but they're five months old, and I had already worked with many new-borns, including new-born twins! I wouldn't necessarily have gotten the job, but the parents would have wanted to meet me. Had that been on Bubble, I would have had that opportunity straight away. It's one of those things – you don't know why it happens. You could go down all kinds of 'isms' cards.

Martha's reference to 'isms' implies that even amongst domestic childcare workers with the right documentation and experience, there is variegated access to secure, long-term agency work along the lines of race. Consequently, whilst most of her work - whether done via word-of-mouth or an agency - is contracted, she uses Bubble and platforms like Facebook more frequently and substantively than her white counterparts to top up her regular work. A portion of Bubble's workforce is therefore drawn from citizens who are nonetheless on the wrong side of racialised exclusions from formal childcare labour markets.

Similarly, my data indicates a migrant division in how workers *used* Bubble. Undocumented nannies relied on Bubble for their entire livelihood. So did documented migrant nannies, although they occasionally supplemented this with income from other precarious sectors like hospitality. The white British women I spoke to, however, used Bubble sporadically. Claire, for example, worked as a professional nanny for over twenty years, and started on Bubble "to fill little gaps and get back some baby experience" when the twins

she had been nannying for started nursery. Claire also did voluntary nannying for an NHS worker via Bubble's 'Free Childcare for the NHS' programme (Bubble Life, n.d) - a controversial programme amongst migrant nannies I spoke to, who felt it devalued their labour. This indicates that British nannies had a more casual relationship to app-based care work - seeing it as a 'bonus', rather than central to their working life. Similarly, for Katie and Lydia, also white British, Bubble was for odd jobs on days off from their agency job. For Daisy, Bubble was a stop gap between her previous career as an agency nanny and her new career in social work. The overarching impression was that whilst there is a presence of white British women on Bubble, the platform's most consistent labourers are migrants who rely on Bubble as their main income source.

Legible within these labour migration stories are global and local processes of bordering, gendering and racialisation that produce Bubble's workforce. Undergirding the platform are the gendered carve-outs of domestic work from employment regimes, which dovetail with racialised bordering process and labour market exclusions that push certain women into domestic care. Bubble captures these workers, as it offers one of few survival paths in the face of organised abandonment (Wilson Gilmore, 2007). Bubble can capture these workers partly because it self-classifies outside the employment relationship, and therefore could evade implementing right-to-work checks during the initial phase of the platform's deployment. In context of this overwhelmingly undocumented workforce, the practice that makes this work exploitative - worker (mis)classification - is paradoxically what makes it available to workers rendered illegible within labour and migration regimes.

Yet, Bubble is at a strange juncture. As Brexit removes the right of EU citizens to live and work in the UK, and Bubble introduces right-to-work checks in its onboarding process, it is unclear where Bubble will draw its future workforce from. Some, like Francisca, believe people will bypass Bubble's checks using documents borrowed from friends - depending on how stringent these checks are and whether they are cross-checked with state agencies (like for Uber drivers). However, most respondents saw this as a looming crisis, having noticed - for the first time since joining Bubble - that worker supply is not meeting parents' demands on the platform.

The Double Carve-Out: Racialised Access to Womanhood

Historically, care chains have created the material basis for the production of differentially racialised and classed womanhoods. Domestic work is feminised labour, but what *kinds* of women do what *kinds* of domestic work - and for *whom* - has produced and been produced by racial categories. What these

differentiated womanhoods look like is shaped by political-economic context and accompanying historically and geographically specific cultural norms. In late-Victorian Britain, consumption patterns and lifestyles of bourgeois and upper-class families required domestic workers to maintain the labour-intensive cult of domesticity (Glenn, 1992; McClintock, 1995). Throughout the late 19th and early 20th centuries, Scottish and English middle and upper-class women fulfilled their gendered role of virtuous lady through reliance on Irish and Welsh migrant women, whose racial inferiority both justified and was justified by their association with servility; Irish and Welsh migrants were preferred to local servant labour. They were seen as more tractable, docile and willing to undertake additional tasks (Delap, 2011); such tractability was a consequence of *material* vulnerabilities of migration and poverty but was *racialised* as evidence of inherent suitability to servile labour.

Such women were also considered 'naturally' suited to the dirty work of household drudgery. The labour of maintaining expectations of upper-class homes was impossible for one woman - the wife/mother - so, excess burden was pushed onto (largely) migrant women hired as domestic workers. Yet this division of labour was particular; domestic workers did "heavier and dirtier domestic chores" (Glenn, 1992, p.7) - laundering clothes, scrubbing floors, changing diapers. This freed up middle- and upper-class women for activities associated with their racialised, gendered and classed position as ideal wife and mother: supervisory tasks, leisure, volunteering and being the nurturing, spiritual figure within the home - a "haven in a heartless world" (Latsch, 1977). The production of this womanhood was contingent upon their exercise of power over the downwardly racialised women they employed. Alongside providing the material foundation for middle- and upper-class womanhoods, domestic workers provided a *cultural* status, constituting part of the "paraphernalia of gentility" (Higgs, 1983, p.201). These identities were relationally produced; the racialised and classed identity of the ideal woman (i.e., ideal wives and mothers) was gained *through* the casting of racial-ethnic women as their opposites (Palmer, 1991; Anderson, 2000). This varied depending on the household's class location - for the wealthiest, domestic responsibilities were covered by full-time, live-in staff. For the burgeoning middle-classes, one or two servants were common.

Racialised women were therefore carved-out from the ideal woman/wife/mother ideal; they "devoted long hours helping [other women] succeed as wives, without, however, commensurate privileges and status" (Glenn, 1992, p.16). The tasks delegated to domestic workers were antithetical to ideologies of womanhood - they involved manual labour and proximity to dirt. Indeed, their participation in waged labour market was itself masculinised. They also were unable to fulfil these gendered ideals in their own families, as they spent their days 'on hand' to facilitate this possibility for upwardly racialised and classed women. Throughout this era, the children of servants, cleaners and nannies were looked after by unwaged family

and community members (Thane, 2011). In the first half of the 20th century, as middle-class women began entering the waged workplace, they continued to rely on hired workers and unwaged familial/community support to supplement their unpaid reproductive work. Still, the labour-intensive and 'dirty' tasks were reserved for domestic workers. Domestic work remained the largest single employer of women until the Second World War (Delap, 2012).

The post-WWII period was somewhat unique in the history of domestic work in Britain. The era of 'servant-less' middle-class homes saw a decline of hired domestic childcare in most households except the wealthiest. A new gendered ideal emerged: that children should be exclusively looked after by their mothers (Barbagallo, 2016). The more than 2000 state-run nurseries built during the war to look after the children of women recruited into the war effort were closed (Riley, 1979). The domestic sphere was excluded from the welfare state's provisions, even at its height. The post-war social contract rested on the family wage system, which assumed a nuclear family where the male worker was paid a wage that covered the cost of reproducing a 'typical' family – including subsidising the wife/mother to provide free, full-time reproductive labour. The welfare state stepped in to provide the family wage only during periods of male unemployment or sickness.

This dynamic again produced differentially racialised and classed womanhoods - the depressed wages of working-class men, disproportionately comprised of those recruited in the Windrush generation could not cover a family wage. For these families, women's wages, subsidised by unwaged care support from their communities, was crucial – almost 75 percent of Windrush women filled roles in the welfare state's public health and care, and service sector (Bryan et al., 2018). This waged work was central to post-war economic growth yet contradicted prevailing ideological models of full-time motherhood (Barbagallo, 2016). Racialised and working-class women were once again carved-out of gendered ideals - however, this was mediated less through their role as domestic workers.

Yet, the domestic worker did not completely disappear. The au pair industry began to increase in the 1960s, partially replacing live-in domestic workers in the minority of households where middle-class women were entering the professional workforce (Lundberg, 2000). Yet, this was defined against the *image* of live-in servants, no longer a desired cultural marker; middle-class women were still expected to do all their family's domestic labour. Classifying the relationship as 'cultural exchange' helped assuage guilt, discomfort or social embarrassment associated outsourcing domestic work (Cox & Busch, 2018). Whether this relationship *actually* resembled a cultural exchange depended on the au pair's class and national origins

- although one of the few surveys of au pairs at the time found most au pairs and host families were *both* upper middle-class (PEP, 1962, qtd. in Lundberg, 200).

By the 1970s and 80s neoliberal turn, hired domestic work made a comeback (Gregson & Lowe, 2005). A convergence of gendered ideals emerging from particular feminist movements and a changing political economy produced a social reproduction crisis in upper- and middle-class household, where women seeking economic independence entered waged work at unprecedented levels, and the 'professional woman' emerged as a marker of successful womanhood. Yet, this was not subsidised by state-funded childcare, as demanded by more radical iterations of women's liberation movements (Barbagallo, 2016). In lieu of institutionalised childcare services, the needs of middle- and upper-class families were 'fixed' by nannies, au pairs, mother's helpers and unpaid relatives. Delivering the Pankhurst Lecture to the 300 Group - a group campaigning for more women in Parliament - Margaret Thatcher (1990) summarised the informal networks of privately-arranged labour that sustained the classed, racialised and gendered ideal of the professional, neoliberal woman:

You have to organise your life and your family's life with great care....you have see [it is] put into effect with the minimum of fuss. Yet, no matter how hard you work or how capable you are, you can't do it all yourself. You have to seek reliable help - a relative or what my mother would have called 'a treasure'. Someone who brought not only her work, but her affections to the family. And as at other times, the existence of the wider family is so very important - the grandparents, the uncles and aunts and the friends who help us to cope.

Thatcher (1990)

What Thatcher euphemistically calls 'a treasure' refers to informally recruited migrant women, whose legal status resembles domestic servants of the past, and who subsidised the gains of a neoliberal economy and its metabolisation of feminist demands for women's financial independence (Fraser, 2017). These women were drawn first from Europe (largely Spain, Portugal and Italy) and then from outside Europe (particularly South-East Asia); the percentage of non-EU domestic workers working in the EU increased from 6 percent in 1984 to 52 percent in 1987 (Ehrenreich & Hochschild, 2002, p.27). As Delap (2011) argues, this connects to rising global inequality; wealthy women could afford to outsource domestic labour to the poorest, whose lack of economic alternatives pulled them into devalued domestic work. Within this, emerges a new ideal of upwardly racialised and classed womanhood, whose status is gained not through leisure or full-time motherhood, but through:

doing it all - producing a full-time career, thriving children, a contented spouse and well-managed home. In order to preserve this illusion, domestic workers and nannies make the house hotel-room perfect, feed and bathe the children, cook and clean up - and then magically fade from sight.

(Ehrenreich & Hochschild, 2002, p.17)

Once again, the racialised, working-class women facilitating this gendered ideal are carved-out of its possibility. They do not have 'careers' - they have jobs; jobs that do not provide the disposable income to outsource the production of ideals of 'thriving children' or 'well-managed homes' (Collins, 1994). In the US, the perceived failure of working-class Black women to achieve this generates the racialised/ing 'welfare queen' trope (Foster, 2008). Across the Anglophone world, the racial difference of working-class migrant women is articulated through perceived economic primitivism, or attachment to/entrapment within outdated patriarchal norms - a condition from which they can be 'rescued' by those who have achieved successful womanhood (Crawley, 2022). Indeed, Anderson (2000) identifies what Rollins (1985) calls "maternalism" in her ethnography of domestic workers in Britain - where hiring domestic workers is conceptualised as a feminist, or charitable, act. By offering economic opportunity in a developed country, racialised migrant women can be lifted out of a state of wretchedness, confirming "the employer's kindness and the worker's childlike inferiority" (Anderson, 2001, p.30).

This continued with intensifying polarisation in the global economy. Demand in Britain for domestic childcare dipped briefly during 2000-2010, as New Labour's National Childcare Strategy expanded the welfare state to include childcare services - public, private and voluntary sectors collaborated, via local authorities, to provide free or affordable non-domestic childcare places (Osgood & Sharpe, 2000; Huws, 2019). However, post-2008 austerity gutted this burgeoning childcare infrastructure, leading middle-class families to again purchase domestic childcare, to fulfil the reproductive demands of double-income, professional households (Hall et al., forthcoming). This is the context within which platforms like Bubble have risen; the demand for cheap household domestic work, mediated by networked technologies and changing contours of bordering and racialisation.

"Helping you be all you need to be": Bubble and Racial Divisions of Reproductive Labour

The ideological framework Bubble operates within continues this legacy of racialised carve-outs from womanhood, and its intersection with carve-outs from employment frameworks. As chapters eight and nine demonstrate, Bubble's primary promise is providing *cheap, flexible* childcare; allowing middle-class

families to find childcare at any cost, any time, without contractual obligations. Bubble situates its production of a cheap, flexible childcare workforce as undergirding the production of the modern professional woman; a techno-fix to the “lack of childcare support holding brilliant women back” (Bubble for Employers, 2021). This is encapsulated by the platform’s slogan: “*helping you be all you need to be*”. Indeed, whilst Uber’s situates its *own* workers as entrepreneurs, Bubble situates its workers as *facilitating* the entrepreneurial/professional identities of others. The below Bubble advert on a London Underground train (Fig5.3)¹⁰ exemplifies this logic: the woman pictured, Fabianna, is a Bubble parent-user, and flexible childcare facilitates her identity as a ‘mum/investor/partner/film fanatic’ – i.e., the social, emotional and professional life of ‘successful’ motherhood:



Fig5.3 Photograph of Bubble advertisement. (Gebrial, 2021)

Legible within this campaign is Bubble’s projected user, which shapes the design and logic of the platform; it is the professional woman “doing it all” outlined by Ehrenreich & Hochschild (2002). This continues the legacy of what Glenn calls the “racial division of labour [that] reinforced the gendered division of labour (Glenn, 1992, p.35); i.e., (typically) white, upper- and middle-class women being produced through the invisibilised, unregulated labour of racialised and/or migrant working-class women. Bubble mediates this in a neoliberal context, as ‘*flexibility*’ becomes an increasingly common demand of *all* workers. This is increasingly compounded by social media-driven pressures of elite motherhood identity performance,

¹⁰ Sampling note: this was part of a city-wide London Underground campaign launched in 2021 (Hesz, 2021).

namely the projection of aspirational ‘work-life’, marked by visible success in both ‘work’ and ‘life’ that is physically impossible to achieve alone (Heizmann & Liu, 2022). It is not enough for middle-class women to hire regular childcare during working hours; workers must now be on-demand, ready to take over at short notice. To compete with men in a working culture of technologically facilitated presence bleed¹¹, professional women need flexible childcare, so they too fulfil expectations of constant availability for work - whilst *also* taking breaks, resting, socialising, developing hobbies and maintaining domestic expectations.

Furthermore, the hyper-mobility of professional workers cuts them off from previous informal care networks. As one article covering Bubble said: “gone are the days when everyone ends up living two streets away from their parents and lifelong BFFs - so what are parents meant to do if they fancy leaving their house without their child in tow?” (Rampton, 2019). This is a key difference between the current moment, and the era of Thatcher’s 1990 speech; greater geographic mobility amongst managerial and professional employees (Hecht & McArthur, 2023), means middle and upper-class people are less likely to live near “the wider family...who helps us to cope” (Thatcher, 1990). This is particularly true in cities like London with highly transnational middle- and upper-classes (Sassen, 2008). The demand of professional women to be hypermobile, flexible *and* maintain particular domestic standards, creates downward pressure on the working conditions of the racialised women they hire.

When describing the usual circumstances in which they are recruited for last-minute sitting, Bubble workers frequently mentioned parents attending last-minute meetings, or overwhelmed mothers needing time to sleep or exercise. Nannies juxtaposed this against their own working conditions - the piece-meal way Bubble organises care work, means workers feel unable to take breaks. Either they cram in as many jobs as possible into one day to compensate for time and money spent travelling between gigs, or they feel compelled to do other domestic tasks when a child is sleeping to get good reviews. Bubble mediates these racialised and classed gender politics, whereby the personhood and lifestyle of one working woman is engendered by denying the personhood of other kinds of working women:

The way [Bubble] markets itself is crazy. They’re saying we empower women so they can work, by giving them quality, cheap childcare: they literally call it cheap childcare. Like, they don’t recognise there is a person there doing this work - hard work.

¹¹ ‘Presence bleed’, defined by Gregg (2013) refers to the temporal and spatial expansion of ‘professional’ workload into the private sphere by digital technologies – the presence of public ‘work’ bleeds, via technology, into private time and space.

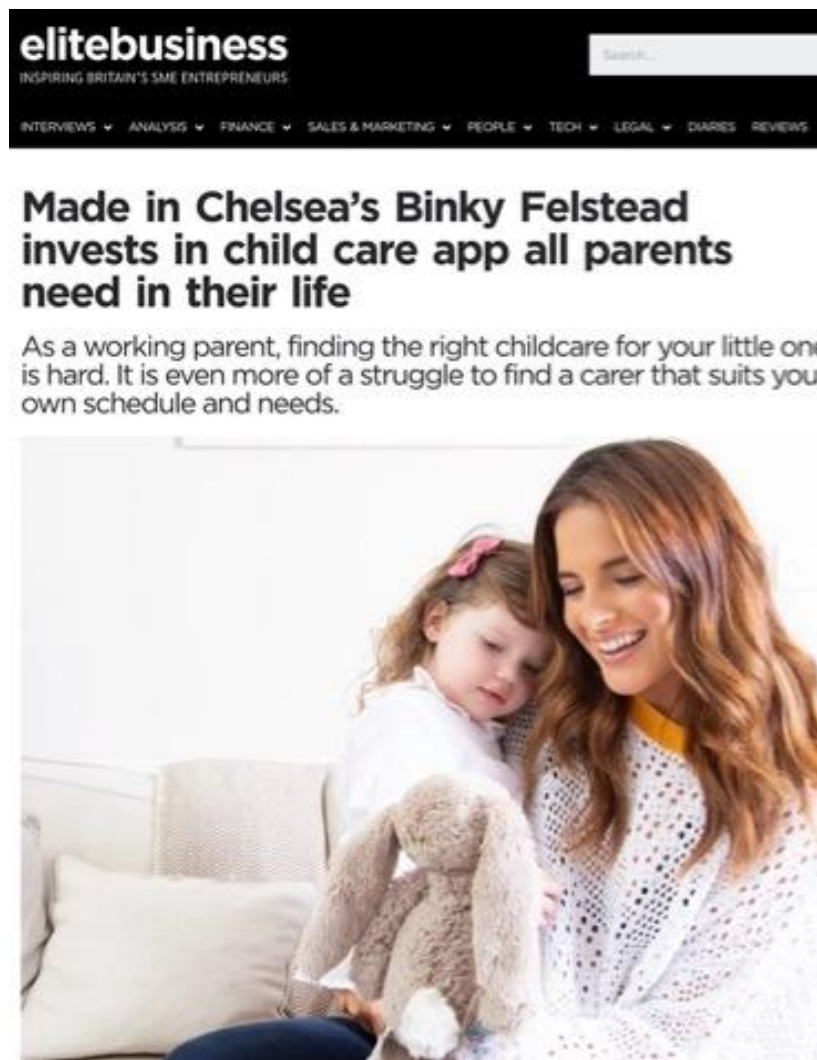


Fig 5.4 Screenshot of Bubble promotional article (Yedroudj, 2019)

The image Bubble projects of its typical parent-user draws on these historic racial divisions of reproductive labour; the making of one type of woman through the exploitation of. A recurring figure in Bubble's promotional material is Binky Felstead, a reality TV star known for appearing on 'Made in Chelsea', a "series that follows the lives and loves of the socially elite 20-somethings who live in some of London's most exclusive postcodes" ("Made in Chelsea", n.d.). After being an early 'ambassador' for Bubble, Felstead invested in the company in 2019 - her widely-publicised "first investment in tech" (Yedroudj, 2019). Felstead's cultural location is as a symbol of upper-class, white womanhood – she is marked as elite, yet her participation in reality TV creates *aspirational* relatability, despite her wealth and social status being

unattainable for most. This dynamic underpins her shift from reality star to 'momfluencer', where her career as a social media 'influencer' is predicated around her identity as a mother 'doing it all' - as Bubble describes, she is "a busy woman - a TV star, influencer, entrepreneur and mum to her gorgeous daughter" ('Why Binky loves Bubble', 2020). The 'momfluencer' is a paradigmatic model of 21st century womanhood - a key site where cultural ideals of hegemonic femininity, womanhood and domesticity are (re)produced (Presswood, 2019). Bubble uses Felstead's classed and raced 'momfluencer' location in their advertising to project an aspirational image of who uses the platform, why and how - and helps constitute the use of flexible migrant labour as a facilitator of well-rounded, ideal womanhood:

Bubble has helped me realise I could still be me at the same time as being a parent to my daughter. It has helped me claim some time back for myself, as well as crack on with work, go to the gym, tidy up my home - whatever I need to do....The app gives you complete control over who you want to book

Binky Felstead, qtd. in (Yedroudj, 2019)

Legible in Bubble's feminist spin ("girlboss vibes" as described by one interviewee) - demonstrates how gender is (re)made, along race and class lines, through the political economy of technological developments. The organisation of reproductive labour under capitalism has always involved women being differentially defined, in part according to their relationship to reproductive labour. By stretching the scale at which reproductive activities can be commodified, from the granular categories of minutes spent working, to the multiplication of care interactions, platform technologies are not only reanimating racialised and classed inequalities between women, but reshaping the political economy of reproduction. As wealthier, disproportionately white women enter 'real' employment that enriches their social status, yet is itself becoming increasingly atypical, what is demanded of working-class, disproportionately migrant women to sustain this normative womanhood is changing. The demand for greater flexibility, and the platform's promise of endless 'choice', requires a worker that must be both specialised, trusted and tailor-made to 'parent-consumers', yet willingly interchangeable, disposable and precarious.

The data on 'typical' Bubble parent-users is unavailable - when asked, interviewees described their clientele as largely white, upper-middle class women living in wealthier London boroughs. However, given the transnational nature of London's upper-middle classes, it is entirely possible that many parent-users are wealthy immigrant/racialised women. Yet, this does not change how gender, race and class intersect to produce the structural position of the Bubble worker; whilst it may produce an altered *interpersonal care*

relationship, the racialisation of Bubble workers still operates as a means through which they have been carved-out of rights-conferring frameworks, which their employer does not experience.

Between the story Bubble projects of parent-user, and the stories emerging from Bubble worker interviews, what Sassen calls the 'two stops' in the new economy becomes legible. These two 'sites' are global cities filled with "professional households without a wife" (2008, p.488), and a "set of Global South countries...subject to the international debt financing regime that puts governments, firms and households under enormous constraints to survive" (p.458). Strategic gendering and racialisation in both sites create labour supply and demand, which Bubble - through platform technology - valorises via data capture and rent extraction (van Doors & Badger, 2020). Crucially, the North-South care circuit is not the only one being platformised - these circuits also exist within nations, and within the Global South, where they are articulated through migration (intra-state and cross-border), gender, class and race/caste (Tandon & Rathi, 2021). Different global platform care chains should be read in tandem – together, they create the broader picture of the platform care economy as a phenomenon that relies upon and produces locally-articulated social differentiation.

In conclusion, the emergence of on-demand childcare platform Bubble relies on and reconfigures the historic double carve-out of domestic childcare workers from socio-legal frameworks governing labour, and socio-cultural, normative ideals of womanhood. Within these carve-outs, the platform logic of worker (mis)classification thrives - allowing the essential labour of racialised workforces to be extracted, without institutionally recognising their existence as workers. This chapter argues that worker (mis)classification is not an innovation of platform capitalism, but a reconstitution of historic, differential classifications of workers *and women* underpinning the organisation of reproductive care in Britain. Where platforms innovate, is in refracting this history through the ideals of neoliberal womanhood, and the spatio-temporal possibilities of platform technologies. How this model impacts care workers and the relationships underpinning care infrastructures will be explored in the following chapters.

PART THREE

Working On-Demand: The Return of the Serving Classes

INTRODUCTION

Part Two explored how historic carve-outs of particular populations from post-war labour gains are reproduced and re-animated by the rise of platform capitalism. Part Three explores how these carve-outs inform the operation of on-demand platforms. It argues that, by mediating historic carve-outs through the particularities of algorithmic management and taskification, platforms intensify labour demand without increasing status or pay. In turn, platforms engender worker servility through the expectations they set, their management logics and the exploitation of ambivalence surrounding the status of the workers and work they organise. This produces a workforce that is *'on-demand'* in two senses: available at any place and time, and available to service any 'demand' a client expresses. Whilst this always been a marker of racialised labour, the particularities of how platforms (re-)organise this labour have reconstituted what servility looks like and how it is extracted.

This builds on what Sassen calls the "return of the so-called serving classes" in major cities (2008, p.465). As cities like London further polarise socially and economically - particularly since the 2008 GFC - there has been an expansion of high-income populations with lifestyles and consumption patterns that rely on surplus populations being incorporated into these sites as hired help. Platforms have been integral to mediating this; through the platform fix, you can have your own driver, care worker or grocery deliverer, on-demand. As previous chapters show, these workforces are comprised of low-wage, racialised populations, many of whom are being subject to increasingly restrictive, irregularising immigration regimes.

'Servility' broadly refers to the expectation that workers will be subservient, docile and available to accept whatever is asked of them; the needs and rights of one person as a worker are subordinated in 'service' of another's needs and desires. This "[contrasts] the ideal of contractual relations in which rights and duties are delimited by contractual provisions and public regulation" (Glenn, 2010, p.129). The co-

constitution of racialised social relations and material conditions creates the contexts through which servility emerges. The materiality of organised abandonment - through labour market exclusion, displacement by economic restructuring etc - tracks certain populations into servile labour, whose 'suitability' to servility is naturalised through racial ideology. In turn, servile hierarchy is deployed to resolve contradictions inherent to infrastructural labour being racialised. Those doing this work are socially coded - through racialisation - as inherently different, even 'threatening' - yet the work they do is often intimate and essential. The normalisation of servility resolves this contradiction, as it precludes worker indispensability from translating into articulable power.

The following chapters explore how servility is reshaped through the co-constitution of racial logics and the platform form - particularly algorithmic management. Beneath cultural associations between 'smart', data-driven technologies and depersonalised objectivity, algorithmic management techniques both inform and are informed by the racialisation of the platform workforce. The chapter 'Dangerous Brown Drivers: Algorithmic Management as Racial Discipline' explores how Uber's management algorithm has developed through site-specific, racialised moral panics, which situate brown men as sexual and terroristic threats. It argues that what the literature identifies as the algorithm's punitive quality is indeed a *carceral* quality - rooted in racialised assumptions around risk, criminality and containment - which workers overcompensate for through deferential performance. 'From Servitude to Service Work to Selling Yourself' explores how servility is engendered through strategic (in)formalisation, self-commodification and the rendering of hired childcare as 'consumer experience' by Bubble. By appearing to formalise parts of the labour process while strategically leaving others informal, and engendering hyper-visibility and hyper-competitiveness amongst workers, Bubble pushes workers to sell *themselves* as servile labour; to promise endlessly more, for less pay and fewer rights.

-6-

Dangerous Brown Drivers: Algorithmic Management as Racial Discipline

Next to Heathrow Airport, there is a car park. The Authorised Vehicle Area (AVA) was created in 2016 after media reports that Uber drivers waiting near the airport for jobs were causing distress to residents: “there are a lot of elderly neighbours”, one said, “who don’t want strange men sitting outside their house well into the night” (Al-Othman, 2016). The AVA is geo-fenced, meaning it is the only place workers can receive Heathrow jobs - Uber’s platform will not operate anywhere else in the vicinity of the airport. Drivers pay £1 per hour to work there.



Fig6.1 View from within AVA (Gebrial, 2021)



Fig6.2 Catering van and toilet in AVA (Gebrial, 2022)

When I arrived at the AVA for the first time, it was during a boiling London summer. The air, thick with pollution, rippled with heat. The runway was a stone's throw away - the sound of planes taking off and landing every 45 seconds made your brain rattle in your skull. After a while, the smell of fuel made your nose burn and the fumes left a peppery taste in your mouth. Whenever I showered after a day there, the trapped dust in my hair and skin made the water run grey.



Fig6.3 *View of airport runway from AVA.* (Gebrial, 2021)

This is one of just two designated PHV spaces in the entire city - the other is near Gatwick Airport. It houses a few portable toilets, and a flimsy kiosk serving water and a small snack selection. Every day, hundreds of drivers use the AVA to wait for work, but also to rest, pray and catch up with colleagues.



Fig6.4 *Uber driver praying in AVA* (Gebrial, 2022)

“So, have you done this - interviewing Uber drivers - before?” the AVA manager asked me over the phone.

“Yes - a few” I replied.

“Okay, so you know the type of people you’re dealing with - you know what I mean”.

I didn't know what he meant.

"Yes of course"

"Okay. When you get there, report to reception so they can sort out your security. We don't want anything crazy happening."

At reception, two security officers handed me a high-vis jacket - a researcher's worst nightmare. I asked if I could go without - blaming the heat for not wanting the extra layer. They insisted I wear it in case "anything happened to me": "you don't know what these guys get up to" they joked. I laughed, unsure what was being insinuated - and how a high-vis jacket would protect me from it. Both officers repeatedly interrupted my conversations with drivers to check if I was 'okay' - "if any of them give you grief, you come and get us."

It dawned on me that the euphemistic phone calls and emails about 'security' were not just standing for researching near an airport. Those conversations were not, as I initially thought, about the airport's security - but about *my* security. Nobody named what I should fear, but there was clearly something I should have instinctively *known* to be afraid of. Something about the space and the people in it was a threat to be contained, monitored and securitised. As my research progressed, I frequently thought about how this jarred with my own relationship to Uber drivers, and the context I usually used Uber in: as a safe ride home at night. Being driven home by one sober man is always preferable, after all, to dealing with multiple intoxicated ones on a night bus or tube.

This chapter unpacks how the racialisation of Uber drivers as 'public safety' threats shapes the logics of Uber's management processes. It begins by exploring the constitution of 'brown' masculinity through security and terror-related moral panics. Using driver interviews, discourse/visual analysis of secondary sources and union caseworker ethnography, it shows how Uber drivers are marked as brown men through produced associations with two moral panics: terrorism and sexual violence. It explores how the production of Uber drivers as 'dangerous brown drivers' surfaces as a carceral logic in how they are managed - both by Uber and the interaction between Uber and state institutions. Finally, it demonstrates how this engenders self-produced deferential performance, as drivers navigate the racialised, carceral management context they work in.

Producing Brown Men

The PHV sector in Britain is a historically Bangladeshi and Pakistani male-dominated workforce. As one of the country's largest migrant communities, the racialisation of this community in Britain has a long history. Whilst this has often entailed criminalisation (Archer, 2001), the post-9/11 War on Terror context reinvigorated the racial marking of (seemingly) Muslim men - a racial fix Bhattacharyya explores in her *Dangerous Brown Men* (2009). Bhattacharyya's use of 'brown' here refers to those *perceived* as Muslim - including, but not limited to, Pakistani and Bangladeshi men. Silva (2016) expands this, conceptualising 'brown' as a post-9/11 identification strategy that groups together those from South-Asian, Middle-Eastern and North-African backgrounds. However, for Silva and Bhattacharyya, 'brown' is not reducible to geographic or religious background - it denotes a form of racialisation against non-white Others *articulated through security and terror discourses*. Whilst these communities are religiously diverse, the racialisation of 'brown-ness' is mostly articulated as Islamophobia, due to their War on Terror context. The term's slipperiness is its power; "not knowing what brown is exactly becomes an important political weapon" (Sharma, 2010), as it can be loosely applied to several communities. This slipperiness, for example, saw Jean Charles de Menezes - a Brazilian Catholic man - shot and killed by Metropolitan Police two weeks after terrorist attacks in London; "de Menezes, although not Muslim, was a *Muslim-suspected*" (Breen-Smyth, 2013, p.232).

Drawing on Stuart Hall (2013), Bhattacharyya identifies two moral panics the bring 'brown-ness' into being are terrorism and sexual predation. Hall situates moral panics as a means through which racialised groups are socio-cultural constructed through their representation as threats to social norms and security. By centring a group within a moral panic, it comes into being *as racialised* through association with threatening behaviours - they become "folk-devils" (Cohen, 2002). These threatening behaviours are portrayed as exceptional to the racialised minority, generating racialised fear often disproportionate to the scale of crisis (Ben-Yehuda & Goode, 2009).

Given its fluid visual boundaries, it is through *cultural* repertoires that brownness becomes legible; assigning these moral panics to particular groups brings them into being as 'brown', rather than a strict set of visible characteristics. The "conduct of brown" is "more important than its signifying skin" (Sharma, 2010, p.187). The cultural practices of the post-9/11 era did not invent 'brownness' or the association of racialised masculinity with sexualised threats to 'national security'; rather, it drew on pre-existing legacies and "[repertoires] of representation and representational practices" (Hall, 1997, p.239), and gave them new power, motivation and legibility (Poynting & Mason, 2007; Kundnani, 2014).

Producing Dangerous Brown Drivers

Uber driving comes into being as 'brown' labour through their portrayal by media and even state institutions as sexualised and terroristic threats to 'public safety'. This section uses discourse/visual analysis of media coverage, literature from TfL and the Licensed Taxi driver Association (LTDA) and ethnographic and interview data, to demonstrate the racialisation of Uber drivers as 'dangerous brown men'.

Uber's introduction into London triggered the biggest regulatory overhaul of PHVs since 1998 (TfL, 2015a). The automatic display and availability of PHVs facilitated by the app disrupted the two-tier system previously maintained between PHVs and black-cabs, as it infringed on the territory of instant 'hailing' previously held by black-cabs. This meant more PHVs driving around the city for work (so they are visible on the app), rather than being based in minicab offices. These regulatory shifts have been framed through racialised 'public safety' discourses (TfL, 2018b), which frame Uber drivers as security concerns despite undergoing the same enhanced security checks as black-cab drivers (TfL, 2018a). There is no conclusive evidence that Uber drivers are more likely to participate in unsafe activity than black-cab drivers (Lee, 2017); yet, Uber's history in London has been defined by a fraught relationship with the regulator, centred around the 'public safety' threat of Uber drivers purportedly represent (TfL, 2018b). This has shaped Uber's emergence in London - company has implemented punitive measures to demonstrate they are protecting the public from this 'risk'. Whilst TfL and Uber are publicly in conflict with one another, the outcomes of this struggle have been consolidated in the working conditions of drivers, who experience extreme worker surveillance and ruthless, opaque management algorithms because of the moral panics that racially code them.

i. Uber Driver Folk Devil: Terrorist

The spatial disruption caused by the ability to "electronically hail" Ubers (Jones et al., 2014) has instigated moral panics surrounding increased PHV presence and mobility in public space. While black-cabs have designated taxi ranks, Uber drivers have been progressively restricted from populating high-demand areas. These restrictions are implemented to prevent Uber drivers "hanging around" in public space - which is situated as a terrorism threat - Green Party councillor and ex-mayoral candidate Sian Berry, for example, called for anti-terror legislation to be used to stop Uber drivers waiting outside King's Cross Station - a key pick-up hotspot (Berry, 2015). Berry proposed these restrictions "for the purpose of avoiding or reducing the likelihood of danger connected with terrorism" - highlighting Uber drivers as the target of her proposal (Berry, 2015, p.5). As highlighted by (Networked Rights & UPHD, 2017), Val Shawcross, then-Chair of London's Transport Committee, argued at a 2015 public meeting that the crowding of Ubers by nightclubs represented potential terror threat:

We all went to the 7/7 memorial service yesterday. We know nightclubs can be terrorist targets....It worries me seeing minicabs hanging around areas where there are potentially issues. It would look legal to the police officer walking down the street thinking, 'Well they are earning a living. We will leave them be'

(Transport Committee, 2015, p.15)

Shawcross comments that the guise of drivers "earning a living" could lead police to interpret their presence as "legal" rather than suspicious draws on "histories of association" (Ahmed, 2004, p.13) between brown men "hanging around" in public space and perceptions of criminality; a trope that has intensified in post-9/11 Britain (Alexander, 2004; Ahmed, 2007). Indeed, the role of cabs as "brown space" (Sharma, 2010) has featured heavily in scholarship on rights to the post-9/11 city (Mitchell, 2003); 'brown' space taxis are part of the "vision" of a thriving metropolis, yet "the driver as potential terrorist, becomes sub-human, a monster and a threat to be eradicated" (Sharma, 2010, p.189). Attaching the moral panic of terrorism to Uber drivers racialises them - and their labour - as brown by default; Shawcross does not need to *name* Uber drivers as brown because her comments *rely* on a pre-existing cultural repertoire of images (Hall, 1997) regarding the racialisation of Uber drivers, and how their presence in public space should therefore be interpreted.

This manifests on institutional, as well as individual, levels. The Licensed Private Hire Car Association (LPHCA) – a trade association representing PHV operators – formally requested having a UK-based bank account be a condition for PHV licenses, to "ensure traceability of transactions, thereby mitigating potential risks of funds supporting foreign terrorist organisations" (LPHCA, 2015, p.18). Once again, the invocation of terrorism (re)produces an implied connection between minicab drivers and racialised threat, creating two, interconnected effects: racialising workers and their labour, and laying groundwork for increased regulation and policing. This results in what can be seen by King's Cross stations or near Heathrow Airport, where Uber drivers are not integrated into public space like black-cabs are – they are excluded, contained and surveilled. This echoes what Sharma (2010) identifies as the fragmentation between the labour and labourer in the "brown space" of the taxi: whilst the "the productive force of brown labouring bodies" is a "necessity for a thriving metropolis", the "public presence of brown as it labours is subject to restriction" (p. 197). Indeed, the need for Ubers to be near train stations and airports indicates their infrastructural role in the city. Yet, whilst black-cab and Uber drivers perform the same infrastructural function, with the same security checks, their labour is represented and experienced very differently.

This resonated strongly with drivers I interviewed, who registered this representation unprompted:

The media make our job harder with the terrorism thing. There are 700million of us – Muslims. How many are terrorist? Not more than 1 percent. But the media have you think it's 100 percent. So, they think we all – all Muslim drivers – are bad too

Hashim

I went to one [TfL] consultation. They mentioned about us guys being terrorists. There's a lot of discrimination. Not every Muslim are terrorists but that's what media highlights most. It's hard to be represented when we are Pakistani-majority industry

Azlaan

Most drivers aren't criminal or terrorist. We get the same security check as black-cabs, but we get treated worse

Mahbeer

Here, drivers understood the perception of their representation as highly racialised, linking this to what they identify as poor treatment. Without provocation, they felt obliged to defend themselves against their portrayal as “criminals” and “terrorists” while discussing broader working conditions - appealing to my positionality as an academic with the power to represent them differently. For them, this was a compounding vulnerability, deeply connected to their experience of precarity.

ii. Uber Driver Folk Devil: Sex Predator

Another moral panic projected onto Uber drivers is the sexual predator. The risk of unlicensed drivers posing as licensed minicabs to sexually prey on women exists and is serious - UK government campaigns highlighting this threat long precede Uber (Stanko, 1996). The introduction of Uber enables passengers to track the PHV's route before and during their trip, and cross-check the driver's name, license plate and image with driver profile. Drivers also upload their license to the app, which automatically disables if it expires (UBER UK, 2016). This significantly reduces the possibility of passengers mistakenly getting into

an unlicensed minicab. Indeed, Uber provides the most thorough driver identification and traceability in London's cab economy.

There is no evidence that Uber is less safe than London's other cab sectors. TfL only provides data breakdown of journey-related sexual offences for black-cabs, Uber and other PHVs for the year 2016. Of twelve PHV drivers convicted of journey-related assaults in 2016, five were Uber drivers – amounting to 41 percent - which equates to the proportion of Uber drivers in the sector that year (Department for Transport, 2015; Bertram, 2016). It therefore cannot be conclusively argued that journey-related assaults committed by Uber drivers exceeds their proportion of the PHV industry (Lee, 2017). Whilst there were no assault-related convictions of black-cab drivers in 2016, black-cabs make up a significantly smaller proportion of licensed drivers and, as Lee (2017) argues, black-cab drivers are harder to arrest and charge, because they are less traceable than minicabs, which are always booked through a third party. This is not to conclusively argue Uber is more or less safe than black-cabs – or that sexual assault is not a problem in London's cab/taxi industry: rather, it is to argue the *trope* of Uber drivers as threats is not based in data, but in broader sexualised racial politics.

Nonetheless, this trope shapes the conditions created by regulators and Uber. This has partly been articulated through racialised culture wars between Uber drivers and the majority-white taxicab industry (Ghosh, 2017; Momin, 2017). This was heightened by the cultural politics of the EU referendum, which drew on a history of migrant and racialised workforces being held responsible for falling socio-economic conditions of white British workers (Share, 2018; Rzepnikowska, 2019). This is despite Uber more heavily impacting the minority-owned minicab industry than taxicab drivers. Yet, media narrativized Uber's introduction as “a war between white working-class cabbies and non-white immigrants” (Ghosh, 2017). Here, taxicab driving, and its long-standing iconographic association with “notions of ethnic nationalism”, is racialised as a ‘white working-class’ trade (Moncrieffe & Moncrieffe, 2019).

The LTDA – the union representing black-cabs – has relied on the Uber rapist trope in its literature. Responding to the threat Uber poses to black-cabs, the industry launched its ‘Why Take the Risk’ campaign¹² to present black-cabs as a safe alternative - and therefore Uber as *unsafe*:

¹² Sampling note: this was an out-of-home campaign disseminated exclusively via advans. At time of writing, there is no information on how many advans were created (‘London Cabbies’, 2015)



Fig6.5 LTDA 'Advan' (2017) Retrieved 20 Jan 2021
(<https://twitter.com/TheLTDA/status/929440832742096897>)



Fig6.6 LTDA 'Advan' (2017) Retrieved 20 Jan 2021
(<https://twitter.com/theltda/status/900828419742736386>)

The imagery mobilised in both LTDA-run ‘advans’ rely on an assumption that Uber drivers represent unique sexual threats. The vulnerable passenger is envisioned as a white woman (Fig6.5), and the sexually threatening Uber driver as a brown man (Fig6.6). This draws on a legacy of brown male sexuality being portrayed as excessive, dysfunctional and threatening to white womanhood (Bhattacharya, 2008). This builds on brown, Muslim men being racialised through their portrayal as *uniquely* patriarchal and coercive, including to women in their own communities – a patriarchy that is distinct from others in its extremity and violence (Spivak, 1988). Indeed, Tufail (2015) highlights the ‘Asian cab driver’ as central in contemporary manifestations of this historical, sexualised discourse. This racialised dynamic is underwritten by LTDA General Secretary Steve McNamara:

The places where [Uber drivers] come from, these third world countries....they’re all corrupt. You can’t rely on [them] to do the checks we do. Getting into [an Uber] is like getting in a sea of sharks – one day you’re going to get bitten.

(Gover, 2014)

This association between Uber drivers and sexual predation is reinforced in media landscape. When TfL announced asylum seekers could provide alternative documentation in PHV license applications, if supported by a letter from the Home Office,¹³ a moral panic emerged around the sexualised criminality of Uber drivers. Conservative MP Nick De Bois argued it could result in “vulnerable members of the public” being put “in the hands of thieves, murderers and rapists” (Shelter, 2015). This was bolstered by extensive newspaper coverage:

Transport bosses under fire for allowing foreign thieves, murderers and rapists to become cab drivers

Evening Standard (Marshall, 2015)

Uber allows convicted rapists to be drivers

Daily Mirror (Evans, 2015)

¹³ This policy has since been rescinded (‘Guidance’, 2022).

Rapists and paedophiles among 70,000 criminals who tried to become Uber drivers

The Sun (Wilkins, 2017)

The combined effect of these political and media discourses is a gap between *perceived* risk, and *actual* risk as indicated by data. This distorted risk perception, engendered by moral panics, is racialised and racialising and has historically been central to constructing racialised masculinities in the Global North (Davis, 1978; Wriggins, 1983; Day, 2006). Drivers I spoke to registered an imbalance in perceptions of risk faced by driver and passenger:

It's not a safe job. Black-cabs have a safety barrier in their car and panic button connected to police. Here, passengers can do whatever they want. They can cut my neck. It's all about passenger safety and nothing about me

Abdi

A lot of us have been assaulted. We push Uber to ban these customers – if a passenger reports me to Uber, I get deactivated. But passengers can do whatever they want. We tried to get a panic button for drivers too, which never happened

Azlaan

Here, interviewees pointed to a fixed, constructed dynamic that positions driver as threat and passenger as threatened. This is despite minicab drivers themselves being at high risk of passenger abuse (Menendez, 2017; Kloberdanz, 2018). A UPHD study found 51 percent of Uber drivers surveyed have been threatened or assaulted while working (Networked Rights & UPHD, 2017, p.8); an internal Uber report found 42% of sexual assaults during US Uber rides were committed against drivers (Uber, 2019). Therefore, representations of drivers as threat and passenger as threatened does not emerge from empirical data. Yet, this assumption remains legible in the app's functionality: for example, passengers have a panic button in the app, whereas drivers do not (Tidy, 2018).

Punishing Dangerous Brown Drivers

The racialisation of Uber drivers lays groundwork for a punitive management algorithm and Uber's policy of automatically deactivating drivers based on ratings and 'flagged' behavioural data. The binary of passengers being considered *at* risk and drivers being considered *risk(y)* is legible in Uber's 'deactivation' policy, which automatically disciplines and suspends drivers using informationally asymmetric algorithms, rather than typical employee disciplinary processes. Drivers can be temporarily or permanently cut from their income if their rating falls below an undisclosed threshold, a passenger makes a complaint, or their behavioural data is algorithmically flagged as problematic. The design of these processes is concealed (Chan & Humphreys, 2018); several drivers I interviewed were entirely unclear of Uber's rating and disciplinary policy, and online worker forums are rife with drivers pooling experiences of deactivation, attempting to reverse engineer the algorithm. This replaces typical employee disciplinary processes, where workers present their case, are told why they are being disciplined, have union representation, and be compensated throughout the disciplinary process (Rosenblat & Stark, 2016).

Whilst passengers are also rated and reported, this does not result in rapid deactivation (UBER UK, 2017b), despite elevated risk of passengers acting abusively (Networked Rights & UPHD, 2017; Uber, 2019). Uber's app design and platform policy instead mobilises fixed, racialised dynamics of Uber drivers as threat and passengers as threatened to justify the fungibility of its workforce. Drivers described difficulty getting an abusive passenger deactivated – despite reporting them on the app or directly contacting Uber. Uber simply refers them to the police, who operate under similar racialised frameworks of risk perception; as one driver, Mehmet, told me: *"if it's your word against the passenger, the police take the passenger more seriously"*. Yet, the power the rating system endows customer whims exemplifies the carceral logics drivers are racialised into: as disposable risks that must be proactively managed, with the passenger's word given automated credibility over theirs. Several drivers reported that passengers are always believed over drivers, drawing on a highly racialised politics of prefigured innocence, guilt, and credibility (Murakawa & Beckett, 2010; Wang, 2017).

Uber frames its deactivation policy in a 'public safety' context, and routinely evoked its punitive algorithmic management system in its dispute with TfL. The "swift" identification and deactivation of drivers, based on concealed algorithmic management techniques and passenger ratings, was used to counter TfL's claims that Uber does not take driver risk seriously (UBER UK, 2017a). The construction of drivers as public safety threats provides pre-conditions for Uber's heavy-handed deactivation policy; it is situated as a necessarily aggressive approach to manage and discipline a workforce inherently inclined to harm. The logic of the management algorithm's design is therefore inflected by the moral panic in which drivers, as brown men, are situated. Here, the racial making of surplus populations and political economy

of platform companies intersect; the driver is not fully a worker, because he is – returning to Sharma’s ‘brown space’ – “sub-human, a monster” and a “threat” to be surveilled and readily “eradicated” (2010: 189). Several drivers I spoke to registered this dynamic:

I was reading about this license issue – Sadiq Khan saying we need to ‘crackdown’ on drivers and deactivate them. Why this language? We are workers not criminals! We keep this city running and then he talks about a crackdown?

Louis

I guess Uber wants to seem like they’re taking action because everyone’s saying we’re unsafe. So, they deactivate us for the tiniest thing knowing there’ll be a queue of drivers waiting to replace us

Pervaiz

My friend was murdered while cabbing. But no one [cares] because people see us as animals

Bilal

The design and operation of ratings-based algorithmic management resolves a contradiction in the spatial quality of on-demand platforms. The kinds of work undergoing platformisation have a distinct spatial character; they “involve the crossing of spatial boundaries – particularly between public and private spaces, but also crossing spaces segregated by class, race and gender” (Anderson, 2017b: 59). Uber’s model requires and creates constant mobility of racialised populations throughout the city, and an expanded encountering of bodies in the somewhat intimate taxi space (Eytan, 2018). This intimate mobility contradicts the biopolitical construction of Uber drivers as bodies that arouse “fear, disgust, discomfort” – and therefore “must be removed from social space” (Wark, 2020: 89). The contradiction between brown mobility being stigmatised, yet *necessary*, is resolved by endowing passengers with the power to, as they see fit, remove drivers from social space.

The Carceral Bleed

The racialised processes that mark certain populations as guilty/innocent, inherently good/bad, risky/at-risk, surplus/non-surplus, disposable/non-disposable and tethers this to their material conditions exemplifies a carceral logic (Wilson Gilmore, 2007; Wang, 2017; Kaba, 2021). Even where drivers are not

directly engaged by police, they are shrouded in what Wilson Gilmore calls a “cloud of presumed guilt” (2007, p.170), which translates into surveillance, punishment, probation, containment - often eventually ending in dispossession and expulsion. Carceral logic extends beyond formal institutions of criminalisation; it is a logic that classifies some people (often through race/class/disability markers) as inherent risks to ‘public safety’ and situates “retribution and control” of those populations as “central components of a public safety system” (Lopez, 2022, p.386). However, there also *are* relationships between Uber and traditional policing institutions. The struggle between TfL and Uber has led to institutionalised data sharing between Uber and police; the court’s decision to grant Uber’s license was partly informed by Uber’s willingness to share data with the Metropolitan Police, including counterterrorism units (Elvidge, 2017; Hamilton, 2020); the National Police Chiefs Council described the “data and support” Uber offers as “being at the forefront” of urban policing (Hamilton, 2020).

My time as a union caseworker on deactivation cases demonstrated how data collection and sharing with regulators informs surveillance, probation and punishment processes - and how Uber’s practices dovetail with state institutions - the Home Office, the police, the regulator - to create the carceral environment drivers work in. When a driver is ‘deactivated,’ Uber informs TfL who then review the driver’s right to be PHV licensed under any operator. The driver typically receives a TfL letter informing them an investigation is underway, which lists every act flagged as a transgression during their time at Uber (Uber provides several to demonstrate a ‘pattern of behaviour’). Drivers then have 7-14 days to respond to allegations made.

These letters typically surprise drivers - they are often unaware of complaints against them, or that behavioural data had been algorithmically flagged as infractions. Yet they have to defend themselves against each historic complaint:

I had been working for Uber for four years. I got deactivated, they reviewed my account and brought up all this stuff - complaints I had discussed with them that they said were resolved, or even where they apologised to me for a bad experience I had with a customer. But they brought all those things back when they wanted to get rid of me. The last allegation was that I harassed someone - I don’t even know what they were referring to. I denied it, but they didn’t give me detail about what was alleged. They reported it to TfL and the police, both of whom investigated it with no further action. But with Uber, after that allegation, they put my account on review and went through every single report - things like when I’ve had passengers be rude to me and I’ve asked them to leave my car. They used that to say I was a safety concern.

Abdul

Sometimes, these reported transgressions related to the broader investigation - however, often they were not. One driver, Ahmed, had been reported by a passenger for having a phone playing explicit content whilst he was driving - a clearly serious allegation that requires investigation. However, the TfL letter he received required he answer for several minor alleged infractions, some of which took place several years before - like playing loud music or speaking on the phone via hands-free device. Other similar, retroactively raised complaints I saw as a caseworker included: 'behaving strangely', 'unprofessional comments', asking for cash tips and not looking like their account photo. Drivers struggled to defend themselves against such allegations - they were often vague, decontextualised or impossible to counter-evidence. For example, if a driver is told that two years prior, an unnamed, unidentified passenger reported him as not looking like his profile picture - what proof could he provide to counter this? Drivers mostly could not recall to me - as their caseworker - what these retroactive complaints referred to.

Information asymmetry is key here - as Uber does not operate within an employment framework, it does not have to provide a transparent disciplinary process. Instead, drivers are deactivated due to opaque, algorithmic 'flagging'. Two drivers I represented were deactivated because, according to their TfL letter:

Evidence was detected by [Uber's] systems to suggest this partner was performing fraudulent activity whilst using the Uber app. We run periodic checks to identify any malicious or fraudulent activity. When we find such activity we take necessary steps to disable a partner's access to the app.

(Fieldnote, August 2021)

Despite requests from the driver and myself, Uber did not clarify *what* fraudulent activity they were being accused of. In other cases, drivers were deactivated because the GPS connected to their account picked up unexplained stoppages (in one example, this was due to a flat tyre). Once deactivated, it was extremely difficult to engage Uber with the driver's case - consistent across all deactivation cases I worked on, was procedural opacity. Indeed, drivers typically were not warned before suspension - they simply opened their app to an error message telling them to contact customer support, or that someone will be in

touch (Fig6.7). They would then attempt to contact customer support repeatedly over several weeks, using both Uber's helpline and in-app messaging function, and would receive automated holding messages saying their case was under review, and they would be eventually contacted (Fig6.8).

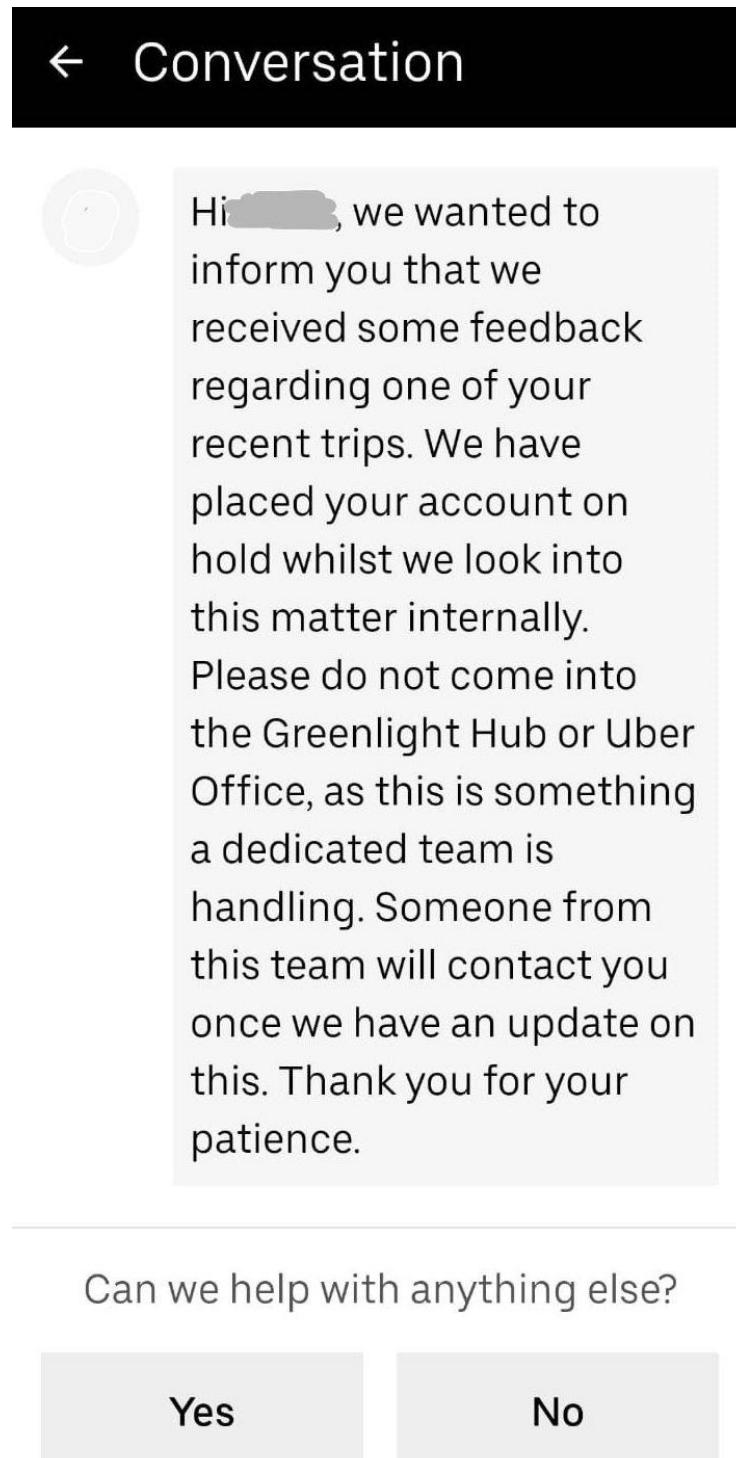


Fig6.7 Anonymised screenshot of message sent to Uber driver via in-app messaging (Gebrial, 2022).

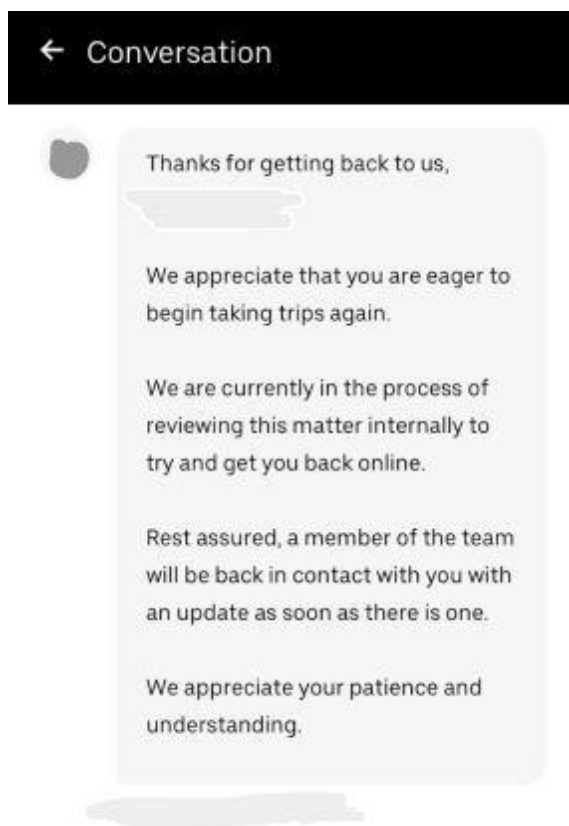


Fig6.8 Anonymised screenshot of holding message sent to deactivated driver via in-app messaging. (Gebrial, 2022).

After trying to resolve the situation, drivers would approach their union for support - normally by this point they had spoken to Uber, but not always. Following a call with the driver, their caseworker writes a formal letter to Uber asking to reinstate the driver. Typically, this would be ignored as Uber, until 2021 when it struck a deal with GMB union¹⁴, did not recognise any union representation, and as Uber is not an employer, it still does not have to recognise any union a worker chooses. The caseworker then escalates by contacting the driver's MP, asking them to contact Uber on their constituent's behalf. If a driver is reactivated, it is typically after the MP had made contact - according to internal union data, around 30 percent of deactivated drivers are reactivated after this process.

¹⁴ Uber does not recognise union representatives from any trade unions other than the GMB, which they recognised in May 2021. As GMB do not, at time of writing, publish membership numbers, it is unclear what proportion of the unionised Uber workforce they represent.

A rider reported I picked her up with the wrong vehicle. Uber deactivated me without notification - I kept calling every day for two weeks until someone responded. They told me the complaint. I said: the passenger has all the information about me - my registration, my car model, my number, picture. Knowing all that - why would I use a different vehicle, and why would she get in the car? She got in, said nothing, I drove her then she reported me. Uber didn't even contact me when it happened - they didn't call me straight away. If they did - I could have immediately responded and sent them pictures - there and then. But I was told after several weeks. They just took me offline and said the relevant department would contact me. I have bills I am behind on - credit card, overdraft. My family are here. Deactivating me was mental torture. It has created a hole in my heart I can't fill. It has given me depression and made me feel like it's not worth it.

Amazu

Two and a half months ago, a customer complained about me. Three weeks later, they deactivated me, and my account has been on hold for 1.5 months. This is my full-time job - I work 70 to 80 hours a week. I have bills to pay - including on my car. Customers are incentivised to make complaints because they get refunds. They also don't call you at the time of the complaint. They just put your account on hold and then nobody calls you for weeks to tell you what happened....I have a camera in my car - I can respond to any allegation there and then, but because of the delay, I can't keep all my records.

Andrei

The judgement and review process Uber employs is opaque. When drivers were reactivated, they were not told why; they received a message saying their account was active again. If they were not reactivated, they received a similarly vague message stating the deactivation decision was "made after careful consideration and is permanent" (Fig6.9).

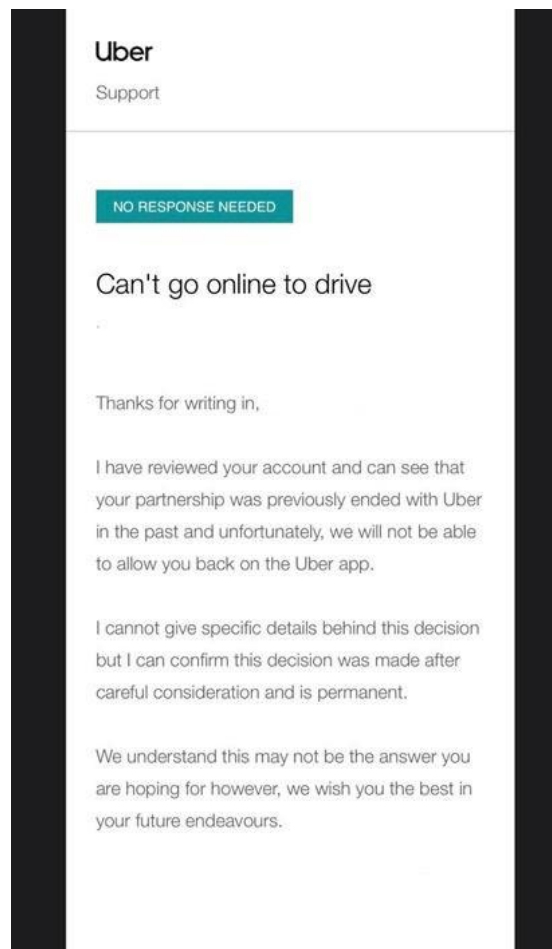


Fig6.9 Anonymised screenshot of message sent to driver via in-app messaging to indicate final stage of deactivation. (Gebrial, 2022).

Sometimes, drivers were asked to give their account of what happened over the phone - however they were not told how this information was used, what department was investigating them and the terms on which the decision was being made. Drivers generally felt they could not give their side of the story, and if they did - it was not considered credible. Many drew on carceral analogies to describe their conditions:

The rider has it all - they complain, you cannot talk. They mess up your car, you cannot talk. They report you and you don't get a chance to defend yourself. When a crime is committed, both parties must be heard before action is taken - even in murder cases, both parties are heard. Why is our industry different? If you are not satisfied with the driver, you can do away with them - but we have to give our side first....[Uber] don't consider my family or financial status. We are human beings; we are at work. We are human beings that deserve to be heard

Amazu

The conditions outlined exemplify a carceral logic Jackie Wang centre in her theory of data-driven carceral capitalism (2017), where technology extracts, monitors and uses data - based on anticipated or presumed guilt - and opaquely tethers it to a person's inclusion in essential systems (including their livelihood). This tethering situates these populations on the edge of life-giving systems, turning them into 'edge populations' (Bhattacharyya, 2018; Hall, 2021). Here, data extraction and surveillance via platforms is predicated on the logic that day-to-day driver behaviour must be quantified and made available for constant scrutiny; as inherent public safety threats, drivers' minute behavioural patterns are of public interest. This resonates with Wang's assertion that, as technologies of racialised control are developed and perfected, "carcerality will bleed into society" (2018: 40).

Indeed, there are parallels between the data-extractive algorithms used to police racialised urban populations and the algorithmic management of racialised urban workers. Wang's (2018) analysis of predictive policing software PredPol identifies how working-class racialised communities are coded as 'pre-criminal' (Mantello, 2016) – i.e., likely to commit future 'crime', and therefore as "calculable risks that must be pre-emptively managed" (Wang, 2017: 29). This involves collecting "mundane [behavioural] data details of an individual's daily life" to "facilitate easier identification of 'criminal signatures'" (Mantello, 2016: 7). It also involves concealing algorithmic design from those whose data is being collected, and whose livelihood relies on its outcomes. Here, the *terms* of algorithmic governance are embedded in a racialised politics of innocence, safety and risk - yet automation provides a veil of neutrality; as Wang argues, "these new forms of power create the illusion of freedom and flexibility, while actually being more totalizing in their diffuseness" (2020: 22).

The continued collection and processing of *mundane* behavioural data by opaque systems is key to carceral power, as it creates undisclosed, unprecedented thresholds of 'innocence' that one must reach to access life-giving systems - in this case, waged work. As Andrei and Amazu outline above, the stakes tied to innocence are considerable. Many are bonded to Uber work through the indebtedness they acquire to finance their cars, and the broader indebtedness they have as working-class people. As Uber monopolises their sector, they struggle to work in other ways; deactivated drivers I spoke to considered exclusion Uber as essentially exclusion from PHV work. Some drivers responded by embracing counter-surveillance - installing cameras in their car and finding relief in the platform tracking their movements:

If it's your word against the passenger, the police take the passenger more seriously. That's why I installed a camera in my car

Mehmet

This thing knows where you are, it knows the passenger, it tracks you continuously. So, it knows where you were if you get in trouble with a difficult passenger

Adroa

This constant remote/algorithmic monitoring dovetails with physical/in-person surveillance. The AVA car park, for example, is an intensely surveilled, racially-marked space, visited almost daily by TfL compliance officers. As a space where drivers gather and connect, it is laden with scrutiny and suspicion. In 2016 TfL quadrupled the number of PHV compliance officers as part of their public safety framework (TfL, 2016). Whilst TfL is unclear what the remit of officers are - again, contributing to the opacity of these monitoring systems - drivers experienced their interactions as disciplinary:

They ask for my badge, check tyres and body of the cars. They check every detail to make your life harder – like a professor at school trying to catch you out. We feel harassed by them

Antonio

I ask why they are always checking on us - they don't tell me. They think they are police – always telling me off or being rude

Mahbeer

It was clear compliance officers and drivers had an antagonistic relationship. I was unable to observe driver-officer interactions - however, drivers were often initially tense around me because they mistook me for a TfL compliance officer (due to my high-vis jacket). During interviews, drivers questioned why officers needed to check paperwork they had to upload to the app, which automatically disabled if their documents expired (Uber UK, 2016), and echoed Mahbeer's feeling of being policed. This was perceived as discriminatory, as black-cabs are not subject to similar checks. Many drivers also were unsure what officers were looking for - as with the rating system, drivers felt they could be penalised at any moment, without knowing why. This sense of criminalisation emerges from the racialised, public safety discourses framing Uber drivers; it is a manifestation of taxis as "brown space," that is "[marked out] from normalised public space" (Sharma, 2010, p.197).

Crucially, the claim here is not that drivers never make mistakes, or every allegation against them is false. Rather, it is that drivers - unlike other segments of the workforce - are enmeshed in systems that code their innocence and guilt in problematic ways. Behaviours that in other industries, including other taxi sectors, would have gone unnoticed - like talking on hands-free devices, having conflict with another driver, playing loud music - are concretised as flagged transgressions that later inform probationary and disciplinary process. In turn, Uber treats its reporting mechanisms as neutral, without considering broader, racialised context of presupposed guilt and stigma Uber drivers are subject to, or the possibility of passengers using the reporting system in retaliatory ways. Indeed, many drivers described having mundane conflict with a passenger - for example, over the route taken - and finding that, in anger, the passenger reported them for an unrelated issue. These incidents, which are part of taxi driving, become consequential in novel ways because of how racialised assumptions become coded, repeated and scaled in Uber's management algorithm and associated disciplinary practices.

Yet, this data collection and processing is shared with TfL who use it to review if the driver is a "fit and proper person to hold a license" (TfL 2021a). This framework has always been a conditional for a PHV license - however the 'fit and proper test' previously consisted of a criminal record check, it now includes data passed on by platforms like Uber. In 2020, further standards were introduced as part of the Policing and Crime Act 2017, which included new assessment categories for the 'fit and proper test' in driver licensing policy and decision-maker training materials. For example, licensing regulators are now asked to include this category in their decision-making:

Without any prejudice, and based on the information before you, would you allow a person for whom you care, regardless of their condition, to travel alone in a vehicle driven by this person at any time of day or night? If, on the balance of probabilities, the answer to the question is 'no', the individual should not hold a license

(TfL, 2021a, p.17)

Mirroring the firm-led rise of review-based algorithmic management, the state regulator's 'fit and proper test' has shifted from concrete, accountable assessment categories to vague, subjective ones. This indicates the increasing role of broader *character* assessment - i.e., is someone generally 'good' or 'bad' - in determining access to low-wage work. This came through strongly during casework. When a driver was deactivated, the letter caseworkers sent to - firstly Uber, then the driver's local MP - could not appeal to regulatory violations; even after being (re)classified as workers by the UKSC, Uber drivers still do not have

the right to a fair dismissal. In lieu of an employment framework, union caseworkers instead appeal to sympathy, mitigating circumstances and character witness statements when trying to reverse a deactivation. The following excerpts from caseworker letters demonstrate this:

“[NAME REDACTED] is a trade union member of good standing, a long-serving and hardworking minicab driver and respected community member....He is dependent on Uber as his main livelihood and only income source. He has a wife and [REDACTED] young children dependent on him, who have been devastated by this unfair dismissal”

“[NAME REDACTED] is a union member in good standing. He is an experienced professional private hire driver, who has worked for Uber for [REDACTED] years, during which time he completed [REDACTED] trips, maintaining average rating of [REDACTED] stars from riders. He received numerous complimentary reviews from riders, particular about his friendly conversation and the condition of his car”

Legible here is a labour system where judgements cannot be made through a rights framework, so have to be made through vague assessments on a person's worthiness as *inherently* 'good' or 'bad', 'guilty' or 'innocent', 'deserving' or 'underserving' people, and where innocence requires either demonstration of trauma or victimhood, or appropriating the very audit mechanisms drivers resent (evident in the above use of a driver's ratings to build a reactivation case). This indicates a bleeding of carceral logic into the labour management sphere via racialised, punitive algorithmic management and regulatory formations (i.e., the *strong* regulation of Uber drivers, and *weak* regulation of Uber). This turn to what Wilson Gilmore calls an "innocence defence narrative" results from a "desperate effort to replenish the void left by various assaults, calculated and cynical, on universalism on the one hand and rights on the other" (Wilson Gilmore, 2022, p.390). In lieu of accountability mechanisms workers have to make claims based in the legitimacy of their *personhood* - claims that are tethered to their means of survival. Yet, the *threshold* for innocence is unknown and always changing. So, this reliance on the "wages of relative innocence" (Wilson Gilmore, 2022, p.391) grants neither security, reliability nor fairness. The structures of feeling it relies on are deeply variegated by race and class, yet such feelings place entire populations on the *edge* of survival. The racialised boundaries around guilt and innocence situate the disposability of *inherently* dangerous brown drivers as *necessary*; this nexus of brownness-guilt-disposability underpins the management structure Uber has pioneered not only in the taxi sector, but in low-wage platform work more broadly. Whilst these connections are not new, they gain new significance in "the general landscape of exclude and define, capture and reward" (Wilson Gilmore, 2022, p.391).

Extracting Worker Servility

The tethering of platform precarity to carceral logic produces a racialised worker servility that has become part of Uber's 'customer experience'. As one driver, Ali, put it: *"they want to make us out to be criminals before we've done anything, so they can have their boot on our necks"*. The knowledge they are mistrusted and stereotyped – *"criminals before we've done anything"* – creates intense fear around the rating system, deepening an already pervasive sense of worker fungibility (Graham et al., 2017). Most drivers I spoke considered the rating system flawed, as it punished them for conditions outside their control. For example, passengers would rate drivers down if delayed by heavy traffic. This convergence of feeling precarious and stereotyped creates a particular kind of docility:

I could be a good driver – but maybe people don't like me because I'm Muslim. Or maybe we got hit by traffic - or maybe you got hit with surge pricing and you are angry it charged you more. There are many reasons for a low rating, and I can't appeal that rating. Uber keeps it there because it controls me – now I'm putting sweets in my car because I'm scared passengers will rate me down and I'll lose my livelihood. It's like a sword on top of my head

Azlaan

What Ali calls *"their boot on our necks"*, or Azlaan *"a sword on top of my head"* implies a self-directed *"deferential performance"* (McDowell, 2009, p.198), which McDowell identifies as a hallmark of racialised, migrant-driven service labour. Drivers overcompensate for their racialisation as disliked or suspicious with *"servile docility"* (2009, p.198) in order to keep what are precarious jobs. Azlaan's comments demonstrate how *"forms of social regulation,"* including *"self-discipline"* manifest in everyday social practices, in ways that *"produce and reproduce"* (McDowell, 2009, p.198) the docile, racialised migrant worker. Uber's promise to provide *"always the trip you want"* (*"Request trips 24/7"*, n.d.) is underpinned by the environmental and aesthetic practices coercively, yet indirectly extracted from drivers, who are overcompensating for their conditions by providing sweets, water and music choice. This is not contractualised but has become *expected* through a convergence of management and contextual conditions: including the *"cloud of presumed guilt"* (Wilson Gilmore, 2007, p.170) that surrounds racialised men.

Alongside aesthetic/environmental practices drivers deploy two related *emotional* strategies of servility to survive on the platform: emotional *suppression* and emotional *management*. Emotional suppression refers to suspension of one's emotional/personal boundaries (including to abusive behaviour)

to 'smooth' interactions. Emotional management refers to management of other people's emotional states through overcompensatory behaviours and excessive vigilance.

Emotional suppression is required to maintain good ratings or prevent reports - even when dealing with abuse. Whilst some argued they would cancel a trip if the passenger became abusive, the majority reserved this measure only for if their life was threatened:

Because of [ratings], if someone is being aggressive, I just put my head down, drive and watch the timer go down

Muhammad

Oh yes I've experienced harassment - it's part of the job. If people harass me, I just think - it's 20 or 30 minutes, I just have to endure them.

Antonio

You get some less than easy passengers, but you have to just behave because of the rating. To be honest with you, if it wasn't for the ratings, I'd just stop my car and ask [an abusive passenger] to get off. That's how much impact it has

Mahad

This was particularly true when drivers discussed dealing with racial abuse:

Passengers bring stereotypes of me into the car – but I'm quiet. I try to manage politely because if I'm angry, then it's a problem. I just try to finish the journey, so I can get rid of them

Mahbeer

Drivers described the changing expectations passengers have of them, because of how Uber ascribes meaning and value to the driver - including the power given to customer whims:

The ratings are such nonsense. The rider even negotiates using the rating - saying like, "I'll give you a good rating if you do this" or "I'll report you and you'll be sacked". This is a common thing to hear. The attitude is: I'm paying you, so you should do whatever I want. But I always try to stand my ground - this is my car, and I will chuck you out.

Adebayo

Now, everyone thinks when they book a cab, the driver is there to just do whatever they want. That's the idea they have - and if they complain, the driver will be seen as at fault, so they just do what they want. The whole approach by the media, law enforcement, TfL, the operator - this is why people feel they can do anything. Their approach to the driver is hostile and so we have very little say. Uber is the first time I've worked as a minicab driver - before I worked for chauffeur companies....those passengers respect you; they don't treat you like a piece of shit

Abdul

Abdul and Adebayo describe how a convergence of the driver's socio-cultural and material position with platform practices produces unarticulated, yet profoundly felt expectations of driver servility - that the driver should accept whatever is asked. For example, playing a passenger's music, which would not have previously been expected as part of minicab driving. Yet, the consequences of servility go deeper - the expectation that drivers subordinate their needs and desires to the passenger's drivers being unable to set boundaries to keep themselves safe. This particularly surfaced during COVID-19 when conflict over passenger mask-wearing frequently emerged:

Usually, it starts when someone is already angry. They come in the car with an attitude. Recently, a client came in - he and his friends weren't wearing masks. I asked them to put one on. That was offensive to him - he immediately said, "are you taking the piss, we aren't wearing a mask for a 15-minute ride". I said it's a rule I don't make - it's the operator's rule. He goes "you're fucking taking the piss". Obviously that leads to an argument - the whole journey he's swearing at me, saying F word and C word. I didn't want to demand he leave the car because previously when I've chucked people out, Uber deactivated me because they complained. I can't do what I need to keep myself safe - they might not do anything straight away, but if it gathers up over a few years, they'll use it to suddenly kick me out

Abdul

One time recently I took a passenger - we didn't have too much longer in our journey, but there was loads of traffic. They started asking me you "oh, why did you come this route". I'm following Uber's navigation but the passenger not happy with me - so he's talking harshly to me, swearing at me, saying bad things. I do nothing, I just keep quiet and drop him off. If I keep quiet, I feel like I can solve the problem because I don't want to have an argument. If he hits my car, breaks my car - if the passenger behaves badly, we must try and understand the passenger and to manage them, because of our ratings. Always we are thinking about our ratings - we try to manage the passenger. We talk very politely, help with the luggage, do everything. But sometimes the Uber passenger is hard

Hashim

Abdul's story was common - both during COVID-19 and generally - and is a consequence of the passenger's perception of him as someone without the social power to say no, and a carceral management algorithm that severely punishes workers for passenger dissatisfaction. These formations reshape the terms on which McDowell's understanding of docile, racialised labour takes place - algorithmic management allows this to be indirectly, yet coercively, induced without direct demand. Whilst drivers (as outlined in chapter four) had a strong sense of 'my car, my rules', which is technically true in that Uber does formally penalise drivers for cancelling rides if they feel unsafe - drivers ultimately found it necessary and strategic to acquiesce to passenger demand, due to their understanding of their material and socio-cultural situation. This facilitates the contradiction underpinning platformisation, whereby Uber is legally disentangled from its 'independent' workforce yet promises customers a uniform user experience. This contradiction is maintained by the over-compensatory, self-disciplinary labour of the workforce as algorithmically managed, racialised surplus populations. Uber does not demand this labour - which it relies upon yet does not compensate - nonetheless, it *is* demanded. The simultaneous distancing of responsibility, yet proximity of coercive control is facilitated through and alongside the dynamics of platform *and* racial capitalism.

The ability to set boundaries is variegated along migration status lines. Drivers that were more willing to end a trip were usually second or third generation immigrants. First generation immigrants were more reluctant to report passengers to law enforcement or Uber for three reasons: lack of trust in authorities, desire to not be seen as 'troublemakers' and normalisation of abuse at work:

A lot of the drivers – they're from Bangladesh, Pakistan, Romania. When they come here even if they get assaulted they think it's wrong to go the law. It's seen as bad in the community. Then TfL and Uber aren't doing enough to make these guys speak out. I would waste my time going to police, and Uber makes you feel you shouldn't complain. One Bengali guy I worked with got punched in the face by a passenger. Police came so he had a report, but Uber wouldn't ban the passenger – just told us to go back to police. But the guy didn't want to press charges. He just said in our job getting beaten up is normal and there isn't time to raise it every time. Uber knows that, and they exploit it

Azlaan

This was triangulated by other interviewees when discussing their response to abuse on the job:

My mum and dad are in Pakistan. I must send them money. I have a responsibility - I can't be a troublemaker here

Mahbeer

I feel like there'd be more publicity if I had a racist attack in the street than when I'm working. That's the abuse we put up with...But no one gives a shit because people see us as animals.

Bilal

Related to emotional/personal boundary suppression is emotional management, where drivers assess how a passenger *feels* and work to produce new emotional states in passengers:

When I pick up, I do a taste test - first, I politely ask how are you. If I get a short answer, I don't do any more. I might ask again later if it's a long journey. If they're completely rude then I rarely have someone in the car for longer than 50 minutes, so I just tolerate. I can tell in a couple of minutes - if you're clever enough, you can figure it out.

Antonio

[The rating] is about how the driver is - how you say 'hello', offer to help, ask if they want the radio on or off. Basic stuff depending on what the person wants. If the person wants to talk to me, I talk, if he doesn't, I don't.

Adomas

It depends how you are with the customers. Once you start talking, you can tell if they want to speak to you and if they don't, then you stop. Be nice, be polite, if they ask anything of you then answer them.

Dheeraj

I look after people a lot so I don't get bad reviews - if the customer is nervous, I can tell, and I just don't talk. If he is rude, I just ask him how he is...helping people with their luggage, asking them how they are feeling, talking about the weather.

Ibrahim

This immaterial, servile work of emotional management and suppression is not an Uber invention. It has always been part of racialised, low-wage service work (Hochschild, 1983; Tufts, 2006; McDowell, 2009). However, Uber's management algorithm intensifies these expectations and raises the stakes of them being met. Drivers who had previously been minicab drivers identified this as a central way Uber has transformed the sector on a day-to-day basis. Consequently, driver wages are lowering, but the skill *and* subservience demanded of them is increasing. If servility is understood as the expectation of the worker as subservient, docile and available to accept is asked of them (Glenn, 2010), drivers identify their lack of rights to fair dismissal and punitive management algorithms as engendering this dynamic in their work - through the expectations encouraged in passengers, the internalisation of their identity as being stigmatised and the empowerment of passenger whims. Docility and servility emerge as *strategies* to survive these social and labour conditions.

It is worth noting here that these conditions are structured into Uber's policy and app functionality - so do not only impact racialised drivers. Whilst the workforce is made fungible through its racialisation as brown, it conditions emerge through the racialisation of drivers as 'brown', this fungibility is experienced by drivers across my research sample, regardless of how they specifically identify. However, there is an

acuteness to the precarity experienced by downwardly racialised drivers - and the servility they employ in response. John, a white British driver saw the rating system as unfair, but did not feel a need to overcompensate stigmatisation:

People are generally understanding. I've got a rating of 4.99 out of 5 – and I've made numerous mistakes, like taking wrong turns and stuff. I just say: 'sorry I've done that' and it's fine – so it's about how the driver handles it . I just try to be myself.

John

This strongly contrasted how drivers racialised as Black or brown related to algorithmic management - Black and Asian drivers especially evoked their identity when explaining how the rating system creates precarity:

I get nervous about my rating when picking people up who aren't from London. They are scared of Black or Muslim people. They see us as not safe and so don't want to give us five stars

Abdi

You never know what thinking someone brings in your car. Maybe they have a bad day, or don't like your colour or religion and then rate you badly

Abbas

I feel sometimes passengers don't like me because I'm Muslim. I saw his face and understand he don't like me. I don't mind, but he can rate me low and what can I do? Nothing

Hashim

I can tell when someone gets in my car, looks at me and goes 'ew'

Anthony

It is impossible to – through driver interviews – ascertain whether the racist inclinations influence ratings. However, what is salient here is how drivers *feel*. Their understanding of themselves as stigmatised, both as racialised minorities and Uber drivers, leads to intensified feelings of precarity and, consequently, docility. Whilst most drivers I spoke to used strategies to gain higher ratings – like offering sweets – minority drivers expressed greater sense of powerlessness over ratings and therefore their livelihood. Where white drivers were reassured that politeness and authenticity – “being yourself” – would be positively rated, for racialised drivers “being yourself” was the very source of their anxiety. Whilst a quantitative analysis of the impact of driver identity on ratings is necessary to draw broader conclusions, these preliminary findings are consistent with what Safiya Noble calls “algorithms of oppression” (Noble, 2018); whereby algorithmic technologies reflect and aggregate existing social biases. For Uber, whilst the ‘neutrality’ of technofixes is posited as a remedy to ‘human’ bias, the app’s digital infrastructure and governance reproduces racialised distributions of precarity.

In conclusion, the conditions of Uber driving come into being in London through a deeply racialised context, where those doing this work are constituted via moral panics as public safety threats, yet *because* of the work they do, they must be mobile and present throughout the city. This contradiction is resolved through the platform circumvention of regular labour standards, which creates space for labour management models that are based in carceral categories like guilty/innocent, criminal/non-criminal, good/bad - rather than rights-based frameworks. Yet, whilst labour regulations are gutted, workers are subject to intensified monitoring and regulation by opaque systems. In response, workers overcompensate by strategically deploying servile behaviour - docility, emotional management and subservience. This often results in the driver’s safety and rights being subordinated to passenger desires and feelings - which the driver must be hyper vigilant of. Uber’s capturing of racialised surplus populations therefore produces and is produced by racial politics - where labour management and carceral management dovetail to produce the Uber driver as a disposable threat, despite their labour becoming necessary to the functioning of modern cities. However, strategic, individualised servility does not translate to workforce *passivity*. Indeed, much of my research involved observing self-organised Uber driver unions - first the UPHD, and later the ADCU, - that have won key labour victories; arguably some of the most significant in Britain’s recent labour movement history (Smith, 2018). Regardless, the racialised structure of Uber’s business model creates the conditions in which *day-to-day* docility is not only rewarded, but often *necessary* to earn a living.

-7-

From Servitude to Service Work to Selling Yourself

The association between paid domestic childcare and servility in Britain has historically been articulated through racial hierarchy. This is partly due to the carving-out of domestic childcare from regular, standard labour. This chapter explores how platformisation interacts with these histories of informality, and the racialised servility it engenders. It argues that new kinds of servility are being made from the ashes of old ones - articulated in new languages of profiles, ratings and childcare as consumer product. It begins by exploring how the contradictions of hired domestic childcare as essential, yet informal labour has historically been resolved through racialised servility. It will then analyse how Bubble strategically (in)formalises this work in ways that give rise to new kinds of racialised servility, articulated through the platform logic of self-commodification, hyper-visible competition and childcare as a 'consumer experience'. This chapter makes the case therefore that racialised and gendered histories of informality and servility should be considered among the structural factors making platformisation possible.

From Servitude to Service Work: A History of Contradictions

Childcare in Britain has historically been organised through a combination of paid, unpaid, public and private labour; the balance between which is governed by political economy, gender ideals and market-state collaborations (Gregson & Lowe, 2005; Huws, 2019). In the home, the main providers of paid childcare have gone from domestic servants/live-in nannies of the late 19th/early 20th centuries to the array of commodified service providers we see today, with demand briefly dipping during the mid-century era of 'servant-less homes' and early 21st century state-subsidised childcare provisions. This trajectory from 'servitude to service work' (Glenn 1992, 2010) did not come with integration into the SER or modern labour standards, partly due to two socio-economic contradictions enmeshing this work: between its status as 'work' versus 'love', and between the status of its workers as essential, yet unwanted. These contradictions have been resolved through the maintenance of racialised servility. Here, intense hierarchy between boss and worker, and the naturalised 'suitability' of workers to servility allows these contradictions to be resolved on the terms of the boss.

The ambivalent status of paid domestic work as both 'work' and 'love' is rooted in a central contradiction of major urban economies, between the ideology of care as done for love, not money, and

the material fact that the lifestyle and consumption patterns of highly mobile upper-/middle-class families means care must be purchased from the market. Particularly in long-term childcare relationships, what is being commodified is “something that can look very much like love” (Ehrenreich & Hochschild, 2002, p.17); something not easily broken down into tasks and valorised. his continuity between unpaid and paid reproductive work, and the naturalisation of reproductive work as a moral, rather than labour, category, complicates the contractual process, as it becomes difficult to define *what* is being purchased. If the worker is being paid to reproduce the child physically, socially and emotionally, who and what determines boundaries around tasks? As the responsibilities of mothers and wives who hire domestic workers are seen as limitless, so are the responsibilities of their domestic workers - indeed, women employers of domestic workers have historically opposed the legal enforcement of rigid work boundaries (Glenn, 1992). Drawing on US context, Angela Davis describes domestic workers as being “called upon to be surrogate wives and mothers in millions of white homes...[whereby] the housewife’s chores are unending and undefined” (p.128). It is in this historical trajectory that Bubble’s provision of ‘flexible’ childcare becomes not only appealing - but positioned as a *feminist* demand; yet this flexibility, as this thesis demonstrates, comes at the cost of the care-provider’s status as a worker, woman and person (Cheever, 2002; Gregson & Lowe, 2005). In turn, the social devaluation of this work - and those recruited to do it - contradicts its nature as intimate and essential labour. The women working are racialised as socially and culturally inferior yet recruited to socially and culturally reproduce middle- and upper-class children in the intimate home space, becoming privy to the personal lives of their employers. Paid domestic workers therefore traverse social and spatial boundaries - across race and class, between public and private (Anderson, 2017b).

Both contradictions are resolved through the asymmetries of power conferred by racial ideologies of servitude. At different historical moments, different groups of women have been racialised as inherently ‘suited’ to domestic service and drudgery, even if this makes them unavailable to care for their loved ones - as docile, servile, naturally caring, accustomed to lower living standards, unskilled and without emotional, physical and social needs (Duffy, 2007; Flores, 2021). These racial ideologies enable the recruitment of racialised women into central roles in the family, yet under employer-dictated terms of surveillance, control, distance and disposability - and without the (limited) social status conferred by the motherhood and wifehood they are acting as ‘surrogates’ for. The strategic absence of regulation leaves boundary-setting to a grey negotiation area between two necessarily unequal parties (Sedacca, 2022). The boss decides when and how the relationship is contractual or familial - for example, whether additional hours are paid overtime, or a ‘favour’/expression of love from carer to cared for; hence Thatcher’s euphemistic reference to childcare work as a ‘treasure’. Paid caring labour is therefore “doubly coercive”:

It is part of the household system that is hierarchically organised according to common-law principles, and it is part of a property relationship that denies the independent personhood of the worker and vests property rights in the employer

(Glenn, 2010, p.149)

Here, racial Otherness becomes an asset, as it helps manage the discomfort of contractualising care, and the expectation that unlike regular workers, domestic workers must have (or appear to have) *personal, intimate* connections at work. The naturalisation of worker servility through racial difference allows the parent to exercise control over how another adult - who is not family - looks after their child in their home. As these relations are not easily subordinated to the SER or the realm of contractual relations, it is instead regulated by individual disposition and relationships. Paid domestic work operates in a space of regulatory exception, and racial difference can provide a framework through which exception can be justified (Anderson, 2001).

Bubble and Strategic (In)Formalisation

Care platforms market themselves as “formalising the commodification of care as a service” (Ticona & Mateescu, 2018, p.4391). Unlike in sectors like housing where ‘platformisation’ has become synonymous with ‘informalisation’, the childcare sector has predominantly existed within the “largely unregulated, ‘grey’ economy...subject to contingent and informal employment relationships” (Mateescu et al., 2018, p.6). This informality is tied to the gendering and racialisation of this work; the constitution of the ‘home’ outside the realm of contractual relations and the systemic factors that lead racialised minorities into informal work. Platformisation strategically interact with these racialised and gendered histories of informality; indeed, questions that have always dogged hired domestic labour around task delineation and worker status are live questions for the platform economy.

Platforms like Bubble *do* formalise this sector in several ways; they systematise recruitment and provide a digital paper trail of work that has taken place. In its earlier years, Bubble heavily promoted itself as formalising ‘word-of-mouth’ recruitment through its ‘mutual friends’ feature, which whereby families could integrate their Facebook profile or phone contacts with their Bubble profile, and sitters that had been hired by a mutual contact were highlighted (Lomas, 2016). This signalled a more interventionist (albeit still automated) approach to matching worker and client compared to open forums like care.com. It also attempts to retain the intimacy of informal ‘local networks’, whilst contradictorily embedding childcare in scale-oriented, impersonal principles of a networked economy. Whilst this feature is no longer front-and-

centre of Bubble's promotional material, it remains one of the platform's twelve "trust pillars" ('Trust Pillars', n.d).

Attempts, therefore, to categorically state whether platforms like Bubble are 'formalising' or 'informalising' childcare work do not capture how platforms are interacting with sectoral histories of informality. Rather, what is taking place is *strategic (in)formalisation*, whereby particular parts of the labour process are formalised, and others left deliberately informal according to the political economic interests of digital platforms: maximising 'leanness' and network effects whilst maintaining the social reputation necessary to keep accruing speculative forms of value (e.g., VC buy-in). Strategic (in)formalisation builds on van Doorn's (2021) work on 'selective formalisation' in platform domestic work - to comprehensively flesh out what this means empirically and clarifying how (in)formalisation is strategically aligned.

It is worth briefly clarifying the use of 'formalisation' here. What formalisation means varies across sectors - however, it broadly refers to processes that "connect informal entities with state institutions or formally structured markets" (Gallien & van den Boogaard, 2021, p. 6). This includes processes like systematisation, licensing, centralised recording, contractualisation and standardisation, or granting of access to infrastructures, social protections and enforcement of regulatory standards (ILO, 2020). Informal, non-standard and atypical work typically carries negative connotations, like low wages, precarity, lack of protection and low occupational progression (OECD & ILO, 2019). Yet, formalisation can carry undesirable effects for workers, such as visibility to a hostile state (Gallien & van den Boogaard, 2021). Furthermore, whilst formalisation is used as an indicator of development, informal work is a systematic feature of the most 'developed' economic centres (Sassen, 2008). The notion therefore that capitalist globalisation involves universal formalisation does not necessarily materialise (Bhattacharyya, 2018). As demonstrated by Bubble, the bottom strata of major urban economies remain governed by a mixture of formal and informal processes, the boundaries between which strategically shift. Platforms - through their claim as legal, cultural and technological intermediaries *and* technofixes - are a key mediator of these shifting boundaries.

Promising “Total Control”: Strategic (in)formalisation and Childcare as Consumer Experience



Fig7.1: Landing page on Bubble website. Retrieved 13 September 2023

Bubble’s promise of ‘total control’ - delivered across its promotional material (Fig7.1) - is made possible by strategic (in)formalisation, *who* controls exchange on the platform is engendered by what it chooses to formalise and leave informal. Indeed, Bubble is vague about its offering; on one hand, it is an occasional ‘emergency’ babysitting app, yet families are incentivised to subscribe monthly, implying it provides regular, systemic childcare solutions. Bubble promotes itself to families as providing professional childcare - sitters are “verified” and “referenced” (‘Trust Pillars’, n.d). Yet, it self-portrays to workers as a “fun” way for anyone to earn extra cash (For Sitters, n.d) - one interviewee was recruited after Bubble was advertised as a ‘side-hustle’ at her university ‘fresher’s fair’. Boundaries between whether Bubble is recreating local word-of-mouth babysitting networks or a professional nannying agency are kept grey. Between the platform’s strategic ambiguity and historically unequal social relations in this sector, parents can decide how the platform is used - they have ‘total control’.

The kind of ‘total control’ Bubble promises creates expectations of childcare as a tailor-made, standardised and interchangeable product. Not only is the worker’s time bought and controlled, but so is their personality and the childcare ‘experience’ they provide. These expectations are cultivated through interface design that give the *appearance* of formalisation and standardisation. Yet in the absence of true formalisation, ‘control’ cleaves to where it has historically resided. This creates imposed and self-imposed worker servility, where the worker must be ‘on-demand’ in two senses: both available at any place and time, and available to service any ‘demand’ a parent may express. In doing so, Bubble can extract a servile, elevated service from workers without explicitly demanding it - instead, Bubble creates conditions, and relies on particular *histories*, through which these relations can appear to emerge organically.

i. Formalising expectations: Childcare as consumer experience

Bubble promises control by offering parents a standardised way of recruiting care workers, allowing them to refine their search according to granular categories - from worker personality traits to task lists. The different booking types include: 'post a job' (one-off sit), 'browse', 'regular help', 'help' and 'permanent nanny'. The job posting form for each booking type follow a similar format, apart from what is listed under "what the job involves" (Fig7.2): for 'regular help', tickable options include 'cooking', 'extra help' and 'homework'; for night nanny, 'feeding & bottle prep', 'weaning', 'establishing routine', 'changing', 'sleep training' and 'laundry & tidying'; for Helpr there is no task list - instead parents write the job description in a text box, which has the following sample text: 'dog walking, tutoring, house sitting, cleaning, elderly companionship or running an errand...'. For ad-hoc sits, the only mandatory information is date and time; parents have the option to select skill preferences and discredit tasks from a fixed list (Fig7.2). When posted, sitters whose criteria match the request are notified and invited to apply.

16:37 4G

← Book a sitter

[postcode]

Booking Type
Post A Job

Pick a date

| | | | | |
|-----|-----|-----|-----|-----|
| Fri | Sat | Sun | Mon | Tue |
| 12 | 13 | 14 | 15 | 16 |
| Aug | Aug | Aug | Aug | Aug |

Start Time Select **End Time** Select

[Add Another Date](#)

What makes a good sit note

Sit Note
More information about the sit. Read our tooltip for advice on what to write.

What the job involves

| | | | |
|-----------|----------------------------------|-----------|----------------------------------|
| Drop Off | <input checked="" type="radio"/> | Pick Up | <input checked="" type="radio"/> |
| Meal Prep | <input checked="" type="radio"/> | Bath Time | <input checked="" type="radio"/> |

Preferences

| | | | |
|-----------|----------|-----------|-----|
| Languages | Newborns | Transport | SEN |
|-----------|----------|-----------|-----|

Fig7.2 Job-posting form for a one-off sit. Bubble Parent app. Retrieved 15 Aug 2022

The 'sitter lookup' function allows parents to browse sitters within an undisclosed radius of their location (either GPS-enabled or inputted as a postcode). Here, parents input their time and date needs, and 'swipe' through sitter profiles, selecting who they want to forward their job posting to. This function can also be accessed by selecting 'Browse' in the 'Post a Job' drop down menu. However, the interface design nudges users towards posting a job over browsing; on the home UI, attention is drawn towards the purple 'Book a single sit' button in the centre of the interface, whereas the 'sitter look up' icon is smaller, located in the top right of the screen, and less contrasting in colour to the rest of the UI (Fig7.3).

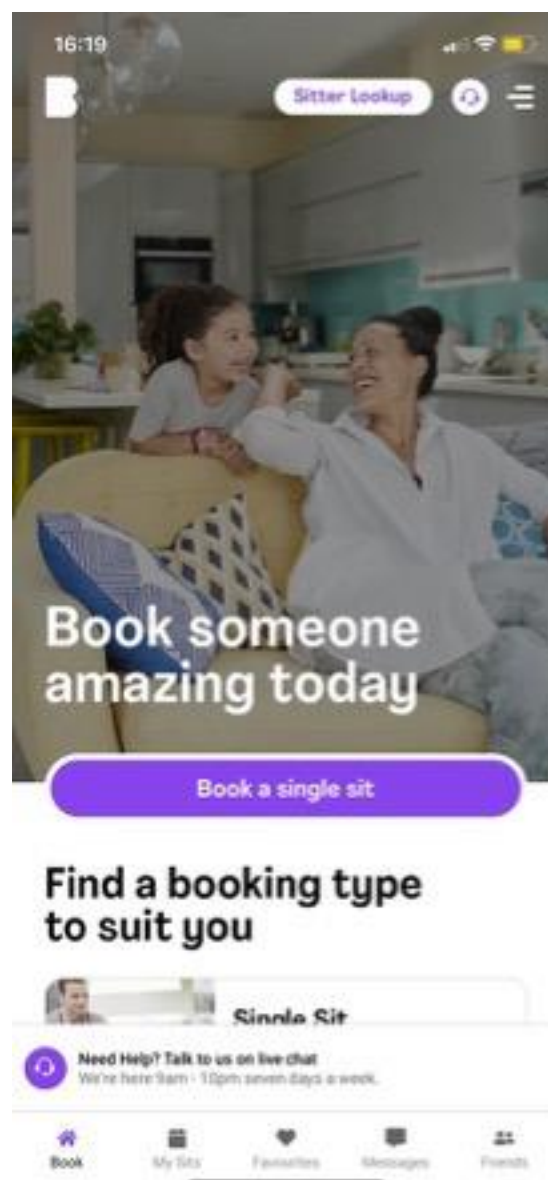


Fig7.3 Home screen interface. Bubble Parent app. Retrieved 17 Aug 2022.

Parents are also promised 'control' by no longer having to rely on a small circle of workers in their local community. This is an example of formalisation through classification and visibilisation; Bubble promises to replace the uncertainty and time investment of word-of-mouth childcare by classifying workers according to objective and subjective offerings and making them systematically visible to potential family-employers. The range of possibilities of what a childcare worker should be and do is defined, selected and ordered, and families are shown upfront information that would have taken several in-person interactions to ascertain. This pushes workers to promise certain kinds of childcare 'experiences'. To be competitive on the platform, workers participate in this classification and commodification of themselves - they must slot themselves into Bubble-defined categories to make the promise of control for parents *feel* real, and fulfil the expectations of them created by the platform. On their profiles, they are encouraged to 'tag' themselves to subjective, pre-determined qualities, like "masterchef", "study buddy", "bookworm", "entertainer", "animal lover", "outdoorsy" or "supernanny", which appear halfway down on a sitter's profile, as seen by the parent (Fig7.4).

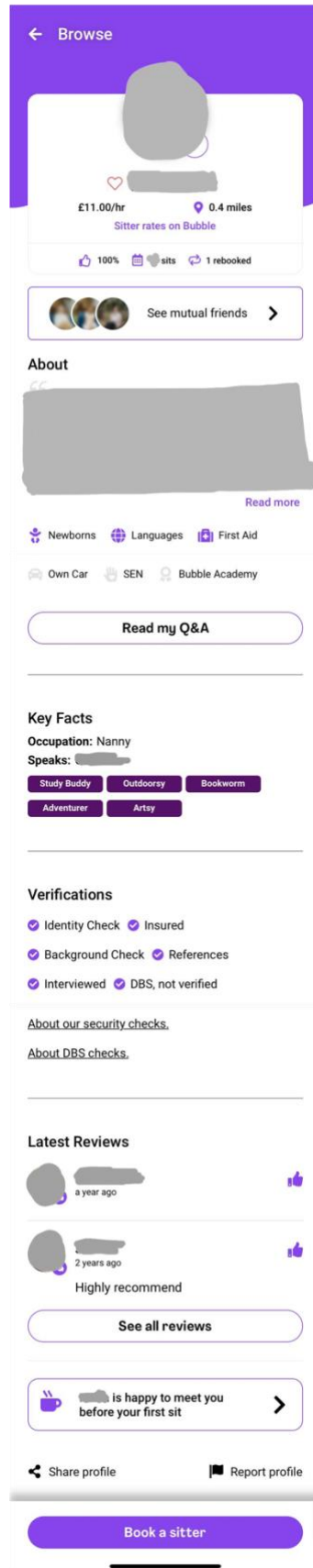


Fig7.4 Sample sitter profile. Bubble Parent app. Retrieved 15 Aug 2022.

Through its affordances, Bubble formalises not only the recruitment process but also expectations of how care is delivered, expanding *what* can be defined and purchased as part of childcare. Parents are encouraged to consider whether they want their childcare worker to be ‘outdoorsy’, or a ‘bookworm’, or both; the expectation therefore is that parents have control not just over the time, date and qualifications of their sitter, but their *personality*, which is classified, commodified and made legible through the design affordances of platform technology. This translates into more formalised, pre-determined expectations around childcare as a consumer experience.

Yet, this production of expectation is not underwritten by formal training or guidance on what this means for the worker - or protection if expectations are misinterpreted. Workers told me that ultimately, delivering on parent expectations was left to guesswork and negotiation - with the knowledge that, within this greyness, the parent holds the power. Tina for example, who tagged herself as a ‘musician’, brings her violin to do sensory exercises with the child: *“parents might choose you for music or dance, something to inspire their kid”*. Katie tagged herself as a Spanish speaker, *“because obviously parents want children to be bilingual - it’s basically free language lessons, included with the nanny”*. Frankie, summarised how systematised categories shape the delivery of care:

It’s like: what are you going to bring to our kids - it implies what kind of day they’re going to have. If you say I’m a bookworm, they’re going to expect you to have a nice calm day. Saying you’re into music and arts, implies crafts, singing and dancing.

This allows Bubble to extract an elevated, tailored ‘service’ from workers, without formally demanding it or offering commensurate training, support or compensation. Workers are not just providing childcare, they are providing language lessons, music lessons - an ‘experience’ - tailored to the values of the parent. Yet, this is done by *implication* through the app’s affordances, allowing Bubble to excuse itself from responsibility for producing this ‘experience’. Workers described expectations on Bubble as high in the context of the sector, despite wages being comparatively low:

I find it very overwhelming. I still don’t know what [parents] want. Sometimes they have expectations that are too high - they want a Supernanny but want to pay them £9 per hour.

Annie

ii. Keeping Boundaries Blurred

The process of defining, classifying and formalising childcare recruitment extends to what tasks are considered to constitute 'childcare'. Through the affordance of defining 'what the job involves', parents can clarify if they want the worker to cook, clean or help with homework by 'selecting' these tasks, producing a record of agreement. This is Bubble's attempt to formalise the 'greyness' that has always existed in paid domestic work - caring for a child often involves housework and education, even if this is not recognised or compensated. This 'greyness' is gendered; giving affection, cleaning up after a meal and teaching a child about the world around them, are not formally legible as work, but are naturalised into the care relation through gendering. Yet, by making these legible as 'tasks' or 'tags', Bubble attempts to integrate this 'greyness' into the taskification logic of platform labour - presenting it as a 'choice' for parents or workers to select. Yet, taskification does not come with transparency, accountability, compensation or social value associated with increased visibility or labour formalisation. Workers reported that listing these options as part of the 'experience', Bubble created work intensification without increasing wages or job security. This is connected to the gendered and racialised slipperiness of the position of domestic childcarers: are they workers, 'staff', 'the help' or 'part of the family'?

People don't see us as a worker - they see us as anything else, but not a worker. On Bubble, there are still parents that think we are maids - someone who is going to do everything in their houses. Last time I was on Bubble, I see people saying 'oh I want someone to look after my kids, to clean, to do this and that. And then they don't want to pay the rate we should receive...[Bubble] encourages that. When they allow people to look for a nanny, housekeeper and cleaner in one person with a low rate - they encourage it.

Silvia

Bubble encourages parents to ask the nannies to do house chores and a cleaning service. They have an area on the app where you can hire a 'helper', so then the parents are posting jobs asking you to look after two kids after school, cook dinner, clean the house. Instead of hiring a cleaner or a housekeeper, they can now hire a nanny to do both.

Yara

Now parents want five different types of job compacted into one, and they don't want to pay premium price for premium quality. There are so many unemployed nannies who are desperate, so they get away with it.

Ana

Silvia and Yara's comments reveal a contradiction; the classification and legibility of 'tasks' in the platform not only fail to clarify what has always been blurry - it in fact makes historically (albeit informally) held boundaries *blurrier* - i.e., previously held informal distinctions between 'nannying' and 'babysitting'. Historically, babysitters were understood to be non-professional, short-term caretakers, hired ad-hoc by multiple families, mainly in the evenings and paid by the hour. Unlike nannies or housekeepers, babysitters do not provide holistic care - like cooking, cleaning and educational development - but basic child-minding, normally while the child is sleeping. Nannying implies a longer-term relationship with one or two families at a time, brokered by an agency, with a monthly salary, higher wages and some responsibility for the child's educational, social and environmental development (Taylor, 2020). Bubble's business model implies the provision of babysitting - workers are hired ad-hoc, paid hourly and without job security. Yet, the app's affordances cleave towards the labour expectations of nannying. As Martha, a Black-British woman who has worked as a professional nanny for over two decades explained:

With Bubble, you're fighting a losing battle - especially because they don't say 'nanny'. They say 'sitter'. But you're not booking me to babysit if it's during the day, and you want me to do their meals and their bath. That's not babysitting - that's nannying. Babysitting at most is reading them a story, tucking them in at night and sitting in the house to make sure they're ok. There's a clear difference. Whereas Bubble has gone: literally everybody's a sitter.

Martha

The expense of employing a nanny, even part-time, means this has historically been a reserve of the wealthiest families; lower-middle and middle-class families relied on au pairs, childminders and babysitters. Yet, Bubble's ambiguity surrounding the care it organises means hiring a 'holistic' domestic worker has become more accessible and affordable - even more so than institutional childcare. Yet, workers hired with the expectations of a nanny are being arranged with the working conditions of a babysitter. Through the

platform's interface design and promotional material, parent-users are encouraged to think of workers they hire as 'on-demand' in several senses; a presence in the home who helps "[you] be all [you] need to be," to echo the findings of chapter five. Rather than formalising these conditions and creating boundaries around expectations, Bubble exploits the historically ambivalent status of domestic childcare workers, and the racialised servility this status has produced and been produced by - allowing more to be demanded of workers, without this being recognised as work, as one woman's boundaries are subordinated in the service of another's. Annie, also a Black-British woman, whose non-Bubble childcare experience includes informal au pairing and babysitting for friends and family, describes an increased sense of feeling like 'staff' during Bubble gigs:

I did a sit last Saturday, where I think they very much viewed me as staff. I turn up as this babysitter, and they also want me washing dishes and cleaning up. It's very Bubble specific. I never had to do any housework except on Bubble. With au pairing, there was pre-agreed stuff - like, with one family I asked about housework, and they just said I had to clean up after myself. Then another au pairing job I would unload the dishwasher in the morning - that was my housework. With Bubble, I always read reviews to see if the family are like that. Some babysitters write 'I had to remind her I was there to mind the children, not clean the house'. I haven't yet had the guts to say: no, I'm not doing that.

The blurring of previously held boundaries is not just discursive - it is contractual. Bubble does not require or encourage the use of contracts. Whilst babysitting has historically taken place without contracts, workers I spoke to who worked as nannies outside Bubble - with or without agencies - typically wrote their own contracts for long-term jobs. Yet, Bubble allows parents to book 'ad-hoc' childcare, without a contract, for regular jobs that last up to 12 weeks - again, bringing the (non-)contractual conditions of babysitting to nannying work. Claire, a white British worker with over two decades of professional nanny experience, saw this as Bubble incentivising and normalising hiring nannies without a contract, for roles that typically would have at least entailed a written agreement:

On Bubble, you can book a nanny for 12 weeks - that's not temporary, that's long term. In my mind, they're evading employing someone - parents don't have to do the things an employer must do, like taxes, national insurance, holiday pay. They're just getting temp nanny after temp nanny, then they don't ever have to employ anyone....If you're going to the same family at set times, for a long period - that's employment...They're trying to wriggle out of it, maybe to get more clients.

Here, Bubble is not *actually* formalising the labour process. Despite the possibilities afforded by a networked technology, which records and monitors employer/employee exchanges, such affordances are not mobilised towards bringing informal workers into a formal relationship with legally binding rights. The ambiguous boundaries surrounding care work and worker status are left deliberately intact - an ambiguity rooted in the naturalisation and devaluation of this work through gender and race. The contradictory status of care work and workers is not resolved, but exploited, providing essential backdrop to Bubble's model. Whilst appearing to stratify care work into 'tasks', there remains not only lack of accountability for maintaining such boundaries, but active encouragement to keep boundaries flexible - to give parents 'total control'. The negotiation of crucial boundaries remains informal, and between two, unequal parties.

Bubble not only fails to formalise work agreements - it normalises breaking agreements under the guise of 'flexibility'. It exploits the fact that, as a historically migrant workforce whose labour is not officially legible as 'work', employers have no legal obligations to domestic childcare workers - and there is no expectation that such obligations should exist. Workers consistently raised Bubble's unequal cancellation policy; whilst Bubble encourages parents to give a 'goodwill' contribution if they cancel a booking, it is not compulsory. Several workers described being cancelled whilst on their way to a sit and losing out on expected income:

I once went to a sit and they accidentally booked two nannies - I arrived and there was already a Bubble nanny there. We called them and they just cancelled the other nanny, even though she was already there! They refused to pay her - even £20 goodwill - and Bubble didn't make her when we told them. When a sitter cancels, they suspend you for days - you must email them to explain, and while you're suspended you can't look for jobs. But a family can do it and they will never suspend them. It's just designed for parents - they care about attracting as many families as possible, and babysitters are replaceable.

Carmen

Compare this to Antonía, who cancelled a sit due to sickness. Not only did she not have access to sick pay, but the algorithmic punishment her cancellation triggered lost her several days of work - and soured her relationship with families she already booked with:

I kept calling the parent to tell her I was sick, because her child was vulnerable so I thought they wouldn't want me to come. I was waiting and waiting, and she never replied. So, I had to just cancel the sit. One hour later, Bubble blocked my profile. They said when you cancel with less than 24-hour notice, you give parents a bad impression of Bubble. For days I couldn't apply to other jobs, and for upcoming jobs I already booked, I couldn't contact them to explain, because I was blocked.

Workers saw this as a way of systematising broken agreements, designing precarity into app-based childcare - they struggled to plan their schedules and personal finances, as they cannot be sure that income promised to them will fully materialise. This is a Bubble design choice: non-payment and broken agreements have always been an issue in informal domestic work. Using an app to recruit workers could have been a corrective to this; the app records bookings when they are made, and the in-built payment processor means the full fee could be automatically collected from the client. Indeed, platforms in other sectors, like ride-hailing, have automatic payment systems - Bubble is an outlier in that payment is not automatic, but must be manually done by the parent, which for many workers I spoke to resulted in late payments. Yet, Bubble strategically leaves parts of the payment process informal, and - in their own terms - at the employer's discretion.

Selling Yourself, Selling Servility

Through strategic (in)formalisation, Bubble retains and intensifies the blurred boundaries that have always dogged paid domestic work, whilst commodifying the illusion of professionalisation/formalisation. Despite appearing to offer something that *looks* like contractualisation, app-based domestic work remains governed by personal feelings and racialised and classed hierarchy. The discursive and contractual norms Bubble projects *encourages* parent-users to break agreements, exert 'total control' and expect an elevated childcare 'experience' with the working conditions of casual babysitting - drawing on legacies of racialised servility in the sector. Yet, the particularities of platform technology reconstitute how servility is articulated and extracted through three mechanisms: 1) the use of ratings-based management; 2) depersonalisation and 3) hypervisible and hyper-competitive profile-based recruitment. Together, these techniques exploit the historic greyness retained by strategic (in)formalisation, to engender new kinds of racialised servility, articulated through logics of self-commodification and self-management.

i. Ratings-based management

A hallmark of servility in paid domestic work emerges from the challenges of delineating boundaries - workers are expected to be docile, subservient and willingly accept whatever task is asked of them; an expectation that emerges from the contradictory, relational and affective nature of this work. This goes against the idea of a contract - which delineates boundaries beforehand and provides recourse for violation. Racialisation provides a justificatory mechanism for servile relations in domestic work; through racial difference, domestic workers are constituted as 'naturally' docile, caring and self-sacrificing. These classed and racialised dynamics are compounded by the rating and review systems found in platforms. In Bubble's case, the 'grey' negotiation between worker and employer is refracted through the fact both parties know it is mandatory for parents to rate workers after each sit with a thumbs up or thumbs down, and an optional comment review. Given the intimacy of care work, workers emphasised that having a clean rating record was essential for getting jobs; when searching for sitters using the 'sitter lookup' function, workers with 100% 'thumbs up' ratings are shown first. The rating system shapes and is shaped by racialised and classed power dynamics between domestic workers and employers - around the expectation that a domestic care worker's needs and rights are subordinated in service of their employer's needs and desires:

A family I was working for - they would make me do things I didn't agree to in the beginning - like cleaning whilst looking after the kids. I didn't want to tell them no, because they can give me a bad review....if a mum asks me to clean, I do it because I don't want to be the lazy one in the reviews, where they can say 'oh she didn't want to work properly'.

Yara

It's very hard when you're in someone's house and they will rate you. Even if you're in the right - they could give you a bad review. So, you just suck it up because it's not worth a bad review.

Annie

Bubble's review and rating system is two-way - before accepting or applying to a job, workers can see how the family is rated. If the family has a 'thumbs down', applicants can contact the worker who left a negative rating to discuss it. This is one of the few communication channels *between* workers that Bubble facilitates - and one they use extensively. The review system is therefore a double-edged sword - on one hand, it creates anxiety around asserting boundaries and saying 'no'. On the other, workers heavily rely on it to keep themselves safe - for many, it makes Bubble preferable to platforms like childcare.co.uk and care.com, where the ratings system are not consistently used. When I asked sitters to talk me through how

they assess whether to apply for or accept a job, reading reviews was often the second or third priority after logistical availability:

I completely rely [on reviews]. It's a nice community, but some families are completely horrible - and some babysitters, unfortunately, have experienced that. So, I always read reviews.

Carmen

Yet, whilst employers and workers review one another, the implication is uneven; whilst most workers I spoke to would work for a family with no reviews or even some negative reviews, there was consensus that this did not work the other way; for workers, a few negative reviews could see them removed from the platform or struggling to find work. Several told me they chose not to leave a 'thumbs down' following a problematic sit for fear it could be traced to them, and a parent would file a retaliatory complaint. This demonstrates a broader anxiety Bubble workers - like many platform workers - have around review systems. Whilst it reassures workers navigating the explosion of interactions platformisation brings, the fear of negative ratings leads to a reluctance to set personal and professional boundaries. This is a key way platforms transform the sector - the consequence of a negative interaction is intensified, as it becomes quantified and fossilised as a negative rating that remains on the sitter's profile and compromises future work prospects. The conditions of waged care work have always been governed by parent disposition, rather than contractualised standards - when it comes to something as *personal* as how a child is cared for, it is considered reasonable for the parent's judgement, comfort and feelings to supersede contractual obligations. Platform rating systems further empower this hierarchy, despite creating an air of objectivity by quantifying what are complicated feelings:

Everything is just [pause] heightened. It's already a stressful job, but now you're constantly like oh what am I doing that could be flagged? I've done a few and not had a bad rating yet, so I feel a bit more relaxed - but I can be very stressed about it. I'll sometimes turn up 20 minutes early because there's an immense pressure to be on time.

Annie

This whole review thing - it's huge. You need to literally be like a machine. And you're so anxious the whole time you are doing the childcare, thinking about the review you're going to get. You end up doing things that are not your job because you don't want to have a bad review. You don't want to ask for

an Uber home late at night, because you don't want a bad review - and if you get a bad one, it's going to be so difficult to get another job.

Between its interface design, rating system, contractual approach and *unequal* accountability mechanisms, Bubble creates conditions through which sitters cannot set personal, emotional or physical boundaries in their work, continuing a racialised servility that has existed throughout the history of paid domestic work. However, the remoteness of algorithmic management and affordance design means this servility is not extracted through direct discipline. Rather, it is self-generated as a rational response to platform-set conditions, and the broader context of financial and migration precarity in which many Bubble workers exist.

ii) Depersonalisation

Through strategic (in)formalisation, Bubble makes a design choice to retain the weakness of (typically verbal) agreements that have always defined domestic employment, whilst formalising consequences for workers if they do not meet employer expectations - explicit or implicit, reasonable or unreasonable. However, workers argued Bubble not only does not formalise accountability - it also weakens one of their few points of leverage. As explored in chapter eight, Bubble's 'on-demand' model cultivates workers as interchangeable, and depersonalises the interaction between worker and employer. Workers I spoke to felt the organising of relations via an app, rather than personal connection or an agency, made it easier for employers to violate agreements and harder for them to assert boundaries. Workers who had previously done non-platform nannying and babysitting were particularly quick to note this difference:

With Bubble, because you're not a regular nanny, they think - oh you are coming, we are paying you so you're going to feed the kids and do this and that...I think you wouldn't do that with a regular nanny who is working there every day. If it's a private arrangement, parents are more likely to be tactful.

Fernanda

With an agency or community job, you've got more of a connection, because you know people they know. So, they're connected to me...with the app it's not like that. You're not connected - they might ask you back, but they might not. It's all remote - you feel remote from the family.

Claire

With one-off sittings, they just take the mickey. They ask you to do things that aren't on the job description.

Katie

As Claire outlines, the 'remoteness' created by how it *feels* to use an app, compared to other recruitment methods, creates disconnection between the care service user and worker. Recruiting a nanny through an agency requires several interviews and sizeable upfront costs - parents are incentivised to remain on good terms with the agency to continue accessing their services. In turn, word-of-mouth recruitment often happens through other parents and community members, where families are incentivised to retain a good reputation amongst friends. Employers are also incentivised to maintaining good relationships with workers as there are fewer accessible to them; they do not have the sense, as Bubble projects, that dozens of workers are available 'on tap' if the one they recruited does not meet their expectations. In both cases, the sense that carers are a limited resource incentivises families to respect worker boundaries, despite lack of contract - although this of course does not always happen. However, Bubble encourages parents to feel 'total control' over what they demand of workers, due to fewer mechanisms of accountability that - although fragile - had once existed. Without formal protection systems, care workers historically relied on interpersonal relationships their employers have within their community. However, it is important to note that many participants felt this disconnection went both ways - whilst they may feel unable to set boundaries in the moment, they felt some 'control' through being able decline future jobs with a family without having to tell them in person. Whether they can *afford* to do so is of course dependent on their financial context.

The depersonalisation of this process is not an unintended consequence, but a concrete design choice Bubble promotes as a *part* of its service. Take the app's in-built timer function. Here, a timer automatically starts when the sit is scheduled to begin and is manually stopped when the parent returns home. According to Bubble's website, this is to ensure "you only pay the sitter for the exact time they actually sit", allowing parents to "use [their] discretion to edit the [timings] of the sit in the app when paying at the end" ("My sitter is late", n.d.). Bubble promotes this as a form of 'smoothing out' potential conflict or negotiation:

The beauty with Bubble is that the app tracks the sit to the minute allowing parents to pay their babysitter in a tap at the end. This removes the hassle and awkwardness of fumbling around for exact change (sometimes after a long-overdue night out!)

("Can I pay", n.d.)

From a worker perspective, this function makes it easier for employers to break agreements, despite being cloaked in formalising language of recording and monitoring - with many describing their frustration when parents cut a sit short (e.g., by coming home earlier than expected), and use the timer to pay less than the agreed amount. Here, the 'smoothing' of this interaction through the timer function symbolised a broader depersonalisation of the care worker/employer relationship. This instance of strategic (in)formalisation not only retains the weakness of the domestic work contract - it compounds it:

I think before, a parent would have to look you in the eye and say, oh I'm not going to pay you for the full time we agreed, or I'm not going to round up to the nearest pound. Whereas, when you have the app - they can just do it through that. It's harder to look someone in the eye and say you're going to [pay less than agreed] or pay them to the penny.

Julia

The importance Julia places on "looking you in the eye", implies something important has been lost in what the platform strategically (in)formalises. While the employer can now formally record timings and pay digitally, the interpersonal, *relational* texture that had existed between employer and worker has been removed. This texture - the 'awkwardness' or 'hassle' - was an informal lever workers could pull on to get paid what had been originally agreed, especially if they are one of few childcare workers available in a community. Of course, this did not always work - but sometimes, it did. Hired care work does not have an issue of workers being paid for time and work they have not done - rather, the opposite: historically, workers have taken on emotional and time burdens that exceed what can be formally recognised or contractualised (Anderson, 2014a). Yet, the *affordance* of taskification that a platform can deploy has been marshalled towards *further* restricting what a worker is paid for - you are "only paying for...the exact time" a worker is in physically in your home. Whilst either party can end the timer, if the sitter ends it first, the parent is prompted to confirm the worker's action; when the parent ends the timer first, the sitter is not prompted to confirm. It is unclear what happens if there is a dispute about timings - this had not happened to any workers I spoke to, but most assumed that if this did happen, they would have to contact Bubble via email to mediate.

The unequal design of the timer function represents a broader shift produced by strategic (in)formalisation: formalising the 'greyness' of domestic work by resolving it on employer terms, thereby concretising employer power. In this greyness, the app's design defaults towards concretising the judgement of the employer over the sitter:

This always happens - the parent comes home late, so I want to finish the timer say, with an extra five or ten minutes, because they were late. But then the parent goes in [to the app] and takes that five minutes away, because even though I can record the time for the sit, the parent can always override it.

Yara

Sometimes when I've stayed like, ten minutes extra, and I adjust the timer - then the parent will go back into the app and revert it to being on the hour. Before, I used to just stay quiet - but now I make myself heard when that happens.

Karolina

Here, the language and aesthetic of objectivity conceals an unequal design framework, whereby - in a sector based on verbal agreements - the word of the parent-employer is coded to always prevail over the word of the worker. This compounds norms - historically justified through ideologies of racialised servility - in which the terms of labour agreements are dictated not by the contractual rights of a worker, but by the feelings, needs and desires of the parent - a socially and culturally, as well as economically, more powerful party.

iii) The Politics of Profiles: Hypervisible and Hypercompetitive

Platforms significantly reshape the politics of visibility in domestic childcare. Waged domestic work has typically been 'invisibilised' - with poor working conditions often attributed to this produced invisibility (Cox, 1997; Gregson & Lowe, 2005; Hatton, 2017). Platforms arguably render domestic workers visible - indeed, rendering workers systematically visible to clientele is the central intervention of platformisation. As Ticona & Mateescu (2018) argue, this visibility has not necessarily improved conditions, as the visibility rendered is highly individualised - it "[displays] specific qualities of workers in standardised and comparable

ways” (p.4394). Whilst all childcare platforms mandate some form of worker profile, the level of detail required for a Bubble profile is high compared to the rest of the sector. Alongside basic information like a photograph, age, hourly rate and short biography, workers must ‘tick’ from a selection of personality traits Bubble predefines, a set of tasks they are willing to do, and indicate if they have First Aid training, new-born experience, special education needs experience, their own car, DBS, insurance, speak other languages and other optional features such as a Q+A (Fig7.4). Parent-users see profiles via two pathways: click-throughs (if a worker applies for a job they post, the parent-user can click on their profile to view it) and the sitter look-up function (where parent-users can swipe through profiles of workers that match their availability criteria).

In both cases, the hyper-visibility engendered by the platform not only requires workers commodify and market themselves - it also brings workers in to direct competition with one another. Workers I spoke to were acutely aware their profile is one of many made visible to potential employers, and that their position in the platform was interchangeable. This is a key shift from how nannies and babysitters have historically been made visible to families - via word-of-mouth, community noticeboards or agencies. Here, the impression of limited supply confers some (limited and informal) worker bargaining power. However, as chapter eight will explore further, the affordance of Bubble’s “swipe logic” (David & Cambre, 2016) creates the impression of an endless supply of easily accessible, replaceable workers, directly competing with one another to provide the highest-level service for the lowest price.

The awareness workers have of their mediated, competitive hyper-visibility is reflected in how self-represent on their profiles. To make their profile ‘stand out’ and remain competitive, workers must continually promise more labour, skill and docility. Annie, a Black-British nanny, describes how her profile highlights her status as a Cambridge University student:

My USP [unique selling point] is I go to Cambridge. It’s funny - six hours with me isn’t going to make your kid a genius or whatever. But I’ve been on sittings where I wasn’t asked about anything other than the fact I go to Cambridge...I’ve realised it’s something parents care about when booking me...the picture [for my profile] I chose was in Cambridge...I think in general it helps me, because honestly, even if I wouldn’t consider myself so, it marks me as part of the establishment, which probably helps when my other signifiers - like my skin colour - says something else, Cambridge helps balance that out

Annie’s use of terms like USP illustrates Bubble’s introduction of self-commodification logics into paid childcare; the affordance of profiles and the ‘swipe logic’ push workers to consider themselves providers of consumer *experiences*, which they need to market in ways that separate their ‘brand’ from

competitors. Her thought process for designing her profile considers how her race and class 'markers' will shape her brand on the platform. As she describes, she is not simply selling her availability or skills - but a childcare experience that entails transmission of class - even though, as she points out, this cannot meaningfully happen given the 'splintering' of childcare under Bubble. Other workers described using professional credentials in a similar way - particularly white British nannies like Kate and Daisy, who use Bubble to supplement professional agency work.

Those without valued professional or class signifiers must sell something else; their 'USP' becomes their self-marketisation as servile and 'naturally' suited to caring labour. This could look like ticking off several of the personality traits and tasks Bubble pre-defines, which creates elevated expectations during the sit, or indicating a willingness to do 'whatever is needed' by the parent:

You must be proactive - put cooking skills, crafting skills, being sporty. Cover all bases. Also, if you put that you do house cleaning it's a massive bonus. When I was very desperate to do night babysits, I always put I was happy to do housework.

Yara

You see a lot of sits now asking for or offering housekeeping or ironing shirts or something while the kids sleep at night. It did not used to be like that you know, no one asked you to do things during a night babysit but now that's so common - people expect you to offer to do this or that but without changing your rate.

Maria

This self-marketisation as willing to 'go above and beyond' is often articulated in racial terms - specifically as a naturalised trait of Brazilian femininity. Indeed, it is typically undocumented Brazilian women who do not have the professional or class signifiers legible as desirable in British contexts - many instead relied on racial tropes:

The parents like how [Brazilians] do stuff - so I always put that [on my profile]. We're very warm - if you go to the playground after school and the kids are being cuddled, you know the nanny is Brazilian. I don't think it's right to think that, but I think parents like it. I always have parents say to me: oh, you're Brazilian, oh you guys are so cuddly

Fernanda

We are like - very natural with kids...the most common thing I always hear from parents is that they like that we are very natural - it's less like we're workers...The family I'm working with now always say they only work with Brazilians because we are so natural.

Maria

Maria's insights neatly summarise the racial politics emerging through and alongside the increasing association between Brazilian migrant women and on-demand platform care work. Unlike in the US, this racialised gendering of South-American women as naturally suited to commodified domesticity is not well established in Britain. Sizeable South-American migration to Britain is relatively recent and has not been subject to the kinds of highly mediated moral panics that bring a community into existence as racialised subjects. To use Stuart Hall's terminology, there is not a strong "repertoire of representation and representational practices which have been used to mark [the] racial difference" of Brazilian-ness in Britain (Hall, 1997, p.239) - although there may be some transference of tropes from US popular culture (Alcázar, 2019; Flores, 2021). Yet, such racialised associations are being developed on a micro-level, as Brazilian women become tracked - via apps - into social reproductive gaps in London households. In this way, through and alongside their relationship with domestic platform work, a *racial fix* surrounding Brazilian women in Britain is emerging. Observing Bubble profiles over time corroborated Maria and Fernanda's insights – workers notably centred their Brazilian identity in their profile, which became shorthand for a type of childcare 'experience'. Brazilian women often highlight in their profile that, in lieu of professionalised credentials of their (disproportionately white) counterparts, their childcare experience comes from the gendered roles they held back home. The 'experience' they offer is a *transference* of the kind of care they once did for *love* (hence 'natural') to the care they do for *money*:

The women who arrive here usually do cleaning or looking after kids, because that's what we know how to do, right? I was raised to look after my younger cousins, to cook and to clean. Nannying is like what we do back home. It's something we grew up basically doing, although we don't call it nannying or sitting - we just call it: looking after your cousins.

Ana

This resonates with Ehrenreich & Hochschild's observations on the commodification of racial Otherness in domestic labour markets, which manifest through and alongside global care chains:

The way some employers describe it, a nanny's love of her employer's child is a natural product of her more loving Third World culture, with its warm family ties, strong community life, and long tradition of patient paternal love of children. In hiring a nanny, many such employers implicitly hope to import a poor country's 'native culture,' thereby replenishing their own rich country's depleted culture of care. They import the benefits of Third World 'family values.

(2002, p.23)

The perception of Brazilian women as being 'natural' at caring work obfuscates the labour relation, making it harder to expect and enforce contract-style delineation of boundaries and tasks. Returning to Davis' idea of domestic workers as "surrogate wives and mothers," the selling of Brazilian femininity as 'naturally' caregiving implies mimicking the devotion and self-sacrifice of maternal love but for a (measly) wage, and under intense inequality and hierarchy - which is compounded by platform management algorithms. These conditions converge to engender servility - it becomes acceptable to extract hard physical and emotional labour, to expect a service akin to the unboundariedness of 'love' for low wages, because for *these* women, it is not (hard) work - it is their 'nature'. The racialised desirability loaded into the "cuddliness" of Brazilian women is a poisoned chalice, even if many have to embrace it to self-commodify, as it is racially fixing them, as cheap, servile labour, into social reproductive gaps of wealthy London households. As Glenn argues: "whatever the specific content of racial characterisations, it [defines] the proper place of these groups as in service: they belonged there, just as it [is] the dominant group's place to be served" (1992, p.15).

Indeed, this downward pressure on wages is a consequence the competitive hyper-visibility Bubble engenders. As well as 'nudging' workers towards higher labour and skill demand, the hyper-competition and hyper-visibility of seemingly endless profiles leads to workers feeling pressure to lower their hourly wage, as they knew parents could *swipe* through dozens of other profiles to find a cheaper rate. Most workers I spoke to that had non-Bubble experience of waged childcare found they could not book jobs on Bubble with their 'off-Bubble' rate, particularly in their first few months on the platform:

I had to put my rate as lower than usual, because competition is really high - if you're a parent, and you see a nanny charging £15/hour with good feedback, but then you swipe and there's another one

charging £10/hour and she also has good feedback, you're going to with the cheaper one. On Bubble you can choose your hourly rate, but you're not going to get jobs if you put a high hourly rate.

Ariana

Bubble is changing the industry because now it's easy to find someone that charges £10/hour. But this is an important job, and £10/hour is nothing. You should be getting like, £16/hour - but it's very easy for [parents] to find someone cheaper on Bubble, because Bubble gives so much choice.

Fernanda

Unlike other care platforms like childcare.co.uk, Bubble sitters can set their hourly rate - and many reported this as a benefit of the Bubble platform. Yet, this does not translate to higher wages, or the autonomy around their rate that Bubble promises. Alongside contextual pressures, Bubble 'nudges' workers to reduce their rate to get more jobs. When workers sign up, the platform tells them an average rate in their local area. Workers I spoke to said they received more of these 'nudges' during lull periods, when they were not getting much work; *"they say you make your profile more attractive or increase your chance of getting a job if you should follow the average rates in your neighbourhood"* Yara told me, and several other nannies corroborated. Workers cannot access any other information about each other, which many found frustrating. Some got partners or friends to download the parent app so they could see what other sitters were charging and putting on their profile - information they felt they needed to make informed decisions about their own profile content and wages.

Information asymmetry is a key strategy of platformisation, as it allows platforms to shape worker behaviour whilst claiming distance from what workers and employers - another example of strategic (in)formalisation. By blocking connection and visibility channels between workers, Bubble can shape how workers conceptualise their sectoral context, and hence influence their behaviour. They can place downward pressure on worker wages - delivering on their promise of 'affordable' childcare - whilst technically allowing workers the 'flexibility' of setting their own rates. Worker fragmentation has long been part of hired domestic work - working in homes, workers are spatially splintered and have few established spaces to meet. Yet, the potential affordances offered by a networked childcare sector to connect workers with one another are strategically foreclosed by Bubble to achieve particular goals. Therefore, whilst Bubble *does* make visible historically invisible workers and care networks, this visibility is heavily mediated to

engender worker interchangeability and work devaluation, rather than worker community and increased status and pay of domestic work. One worker, Ana, neatly summarised this contradiction:

Well, the work should improve - right? Because we are visible, there's so much more access. It should be seen as valid work. But because of the apps, the rates that people must put is so low, and the work they must do is so high. Some are not even advertising minimum wage. It decreases the value of the nanny job....and makes it more difficult for nannies to find work.

In conclusion, strategic (in)formalisation relies upon and reanimates histories of racialised servility in the domestic work sector. Labour demands are intensified without commensurate protections, security or wage, as Bubble appears to formalise agreements, whilst leaving intact the expectation that the home (despite being a workplace) exists outside contractual labour norms. The gendered and racialised ideological construction of waged domestic work as neither employment nor family, allows Bubble to promise a service of 'total control' - a promise underwritten by precarity, overcompensatory servility and worker self-discipline. Platforms like Bubble do not formalise out racialised and gendered ambiguity that has historically underpinned the status of domestic work and workers - rather they *exploit* this blurriness as a *resource* that makes possible *on-demand* labour, where 'on-demandedness' refers not only to when and where workers can be, but *what* they do when they are there. Returning to Sassen's notion of 'the return of the serving classes' (2008) as a marker of post-2008 global cities, the cultural and social tenor of the relationship between platform domestic workers therefore takes on an anachronistic note, despite the appearance of modernisation; the relations through which domestic care work is distributed bear more resemblance to the Victorian model of widespread, hierarchical outsourcing, than to the family wage model of post-war Britain, or the combination of decommodified public service labour and unpaid wife/mother/grandparent that defined the Blair era.

PART FOUR

Labouring Platform Infrastructures

INTRODUCTION

Previous chapters explored how on-demand labour platforms operate through racialised and gendered 'carve-outs'. Through the 'platform fix', it argued platforms re-organise racialised surplus populations following the 2008 GFC, and explored how the racialisation and gendering of platform work and workers informs how platforms operate. Here, social differentiation processes are exploited to provide on-demand, cheap labour; in turn, platforms restructure these relations to produce new racialised serving class. Platforms therefore animate and are animated by a 'racial fix', which re-organise racial(ising) social relations through and alongside crisis. This part unpacks how co-constitutive processes of platformisation and racialisation (re)shape urban social relations by (re)shaping urban infrastructures. Indeed, platforms are an urban phenomenon that rely on dense populations, systems of racialised dispossession and demand for low-wage service workers. Platforms metabolise these conditions to create 'the return of the serving classes' (Sassen, 2008) - organising racialised surplus populations into on-demand, servile workforces.

The following chapters marry these insights with what Plantin et al. (2016) call the "'platformisation' of infrastructure and [the] 'infrastructuralisation' of platforms" (p.295). If 'infrastructure' is understood as a "complex social and technological process that enables - or disables - particular kinds of action in the city" (Graham & MacFarlane, 2015, p.1), then the platform-based (re)production of serving classes in global cities is an intervention in infrastructural labour organisation. Infrastructural labour maintains and actualises flows of people, goods and services throughout the city to generate urban growth, whilst blending into the urban background (Shaw, 2015). This framework conceptually expands infrastructure beyond built environment, to include "[conjunctions] of objects, spaces, persons and practices...providing for and reproducing life in the city" (Simone, 2004, p.406).

The Uber drivers driving elderly people to appointments and Bubble nannies collecting children from school are part of the networks providing for and reproducing urban life. The infrastructural quality of platform labour was particularly legible during COVID-19 lockdowns – much 'essential work' that continued

were platform-based - including Bubble and Uber. These infrastructural labours have racialised, gendered and classed histories shaping their working conditions - as work that often happens during unsocial hours, and can be dangerous, 'dirty' and physically punishing, it is disproportionately done by the socially and economically marginalised, deemed essential yet undesirable, fungible and unskilled (Gidwani, 2015). These dynamics are often articulated through racialised formations, which enable the *bodies* of platform workers to exist and move throughout the city, without being institutionally recognised as workers and embodied humans.

The question for this part therefore, is: how are social differentiating dynamics animating and animated by how platforms exercise infrastructural power? How is the computational organisation of surplus labour populations leading racialised and gendered workforces to exist in cities in novel ways? What kinds of infrastructures are platform infrastructures, and what does this mean for the workers labouring them? The first chapter 'Becoming Flexible Infrastructures' demonstrates how the promise of flexibility allows platforms to capture urban infrastructural functions, tracking racialised surplus populations into qualitative and quantitative infrastructural gaps. It unpacks how both Bubble and Uber produce their much-desired 'flexibility' through the racialised production of worker disposability and interchangeability.

The second unpacks the promise of 'frictionless infrastructures'. Borrowing concepts of 'frictionlessness' in UX design, this chapter unpacks the platform promise to provide smooth, ultra-convenient 'frictionless' infrastructures. Rather than abolishing 'friction', this chapter argues platforms *generate* friction and shift it onto the worker - turning racialised surplus populations into friction absorbers of 'glitchy' platform infrastructures. This devolution of friction is facilitated by broader racial politics, which creates blurred boundaries between platform worker and categories like 'human', 'citizen' and 'machine'.

-8-

Becoming Flexible Infrastructures

After a day spent last-minute packing and running between shops to buy plug converters and tiny shampoo bottles, I settled into the tube journey from Finsbury Park to Heathrow Terminal 5. I was travelling to New York for the first time.

Twenty minutes in, the adrenaline dissipated enough for me to absorb my surroundings. My gaze settled on a Bubble advert: “flexible childcare”, it said, “that lets you be all you need to be”. I took a picture of it, joked to my partner that my research was chasing me and returned to my podcast. Ten hours later I was walking out of JFK airport. The first thing I see is a screen, humming with orange brightness against the black of a winter night: “POSTMATES: WE GET IT”.

On-demand labour platforms are embedding themselves into the fabric of our cities. What it means for urban, professional middle-classes to ‘be all you need to be’ is increasingly defined by expectations that you can get what you want, where and when you want it, at the click of a button. As urban economies further polarise, low-wage, racialised and often migrant workers are recruited via platforms into fulfilling these expectations of on-demand services. Whilst, as Huws et al. (2019) argue, platform workers are often also platform service users, my interviews indicated workers do not use platforms they work on. Bubble workers used Uber, for example, to return home from a late-night job, but never used Bubble to procure childcare.

Increasingly, the services being platformised are infrastructural ones, concerning the provision of childcare, grocery delivery and transportation. The platform promise to provide these infrastructural services *flexibly* is the rubric under which they are being captured. This is tied to the original promise made by platforms post-2008 GFC: to provide lean, responsive and efficient services (and work opportunities), in contrast to the bureaucratic, outdated offerings of traditional state and finance institutions, which had spectacularly failed (Taylor-Buck & While, 2015; Sanyal & Ferreri, 2018). Yet, flexible infrastructures come at a cost; flexibility is engendered through worker disposability, cultivated by denying the full personhood of platform workers. This chapter unpacks this flexibility-disposability nexus and explores the racialised social relations that inform and are created by this dynamic. It begins by unpacking how platforms capture urban infrastructure through the flexibility promise. It then explores how platforms deliver on this flexibility

promise by engendering worker disposability through design practices and engagement with the broader racial politics of global cities post-2008.

Capturing Infrastructure

Platforms situate themselves as techno-fixes to inadequate urban infrastructures - they promise to, using real-time data, fill the temporal and spatial gaps unserved by traditional or pre-existing infrastructures. For Bubble, this is tied to post-2008 austerity urbanism (Peck, 2012); gaps created by insufficient state-subsidised and/or cheap childcare are being plugged by algorithmically managed, precarious and often undocumented (therefore criminalised) young migrant women. The crisis of public childcare provision, which does not meet the needs of urban professional classes, provides ideal context for Bubble to thrive.

The prevalence of hired domestic work in Britain has historically been shaped by availability and accessibility of institutionalised and/or formal childcare, racialised ideologies of womanhood and the availability of a primarily racialised and/or migrant workforce to undertake this undervalued, underpaid work. These women have functioned as a racialised surplus population, whose entrance into the domestic workforce has been mediated by changing political-economic conditions, and (related) changing gender ideals. During periods of increased state-subsidised childcare, or when a welfare settlement based on a family wage has been viable, waged domestic work declined. In turn, during periods of state absence from childcare provision, and when outsourcing 'dirty' reproductive work has been a socio-cultural marker of white womanhood, racialised women have been recruited into these reproductive gaps. At different historic moments, the domestic worker has provided not only the social infrastructure upon which the productive economy has relied, but also the infrastructure upon which hegemonic notions of upwardly racialised and classed womanhood has been practiced.

When Bubble emerged in the 2010s, a convergence of factors created the infrastructural gap into which platforms recruited migrant, racialised women. The nature of this infrastructural gap engenders a demand for 'flexible' childcare, which shapes the 'on-demand' model Bubble facilitates. This is where the racial fix and platform fix intersect. Gaps created by social reproduction crises in the Global North, triggered by welfare austerity and changing ideologies and political economies of gender are being 'fixed' by labour flows from the Global South, who are (through migration regimes) racialised *out* of formal labour and *into* informal care labour.

Part of this infrastructural gap is quantitative - there is not enough affordable childcare to meet demand. Austerity measures introduced by the 2010 Conservative-Liberal Democrat government and continued under successive Conservative governments has entailed real-term defunding of state-supported childcare provision. By 2018, a third of Sure Start centres¹⁵ closed due to budget cuts (The Sutton Trust, 2018), and most remaining centres no longer offer childcare. By 2022, nearly 40 percent of local authorities no longer had enough childcare places available for children under two (Sharman, 2022). The reduction of child tax credits left many families with annual losses of nearly £1560 in childcare benefits. For many parents, particularly those working outside school hours - it is impossible to provide their children with consistent childcare, especially as demands of their own working lives increases. Measures implemented over the past decade, like 15 hours free childcare for all three- and four-year-olds (increasing to 30 hours if both parents are employed), and tax-free childcare does not meet need (Hall et al., forthcoming).

The lack of sufficient public childcare infrastructure, and reframing of childcare as a matter of personal responsibility and choice, middle-class families have turned to the market once again - specifically financialised models of care provision. Nurseries and other childcare services are increasingly captured by the for-profit sector, which use private equity models “characterised by borrowings and debt, with a focus on short-term financial returns” (Simon et al., 2022, p.9). For example, large nursery chains indirectly subsidised (albeit insufficiently) through state-provided tax relief and cash transfers. The responsibility to provide nurseries and care homes is being shifted from the public sector, towards private equity companies, hedge funds and real estate investors using high-risk financial instruments unsuited for the long-term infrastructures required for affordable, reliable care services (Dowling, 2022). Nurseries and other childcare institutions are drawn into debt-fuelled investment strategies; debts that are paid off by staff redundancies, salary cuts, increased fees and reduced resourcing. This has cost families; childcare costs for the average family have increased by more than 44 percent since 2010 – a rate increase three times that of wages (TUC, 2022). In London, this is intensified, with parents paying up to 71 percent of take-home pay on childcare (Topping, 2022). Even if parents can afford such fees, the *availability* of childcare is insufficient - low wages, unpredictable funding and unsustainable conditions has led to a staff retention crisis (Social Mobility Commission, 2020); in 2020, 1 in 4 nurseries were at serious risk of permanent closure (Early Years Alliance, 2020). Subordinating care provisions to finance capital logics - an accumulation model based on speculation and experimentation - has created a volatile, unreliable and expensive childcare infrastructure.

¹⁵ Sure Start centres were a New Labour infrastructure launched in 1998 that provided local authority-run early learning and full day care services

Bubble is embedded in global finance circuits - from the VC investments it relies on, to the centrality of intangible data assets to their valuation. Bubble's six listed investors are prolific platform investors; their investment portfolios specialise in platforms across sectors including transport, financial technology, gambling, beauty services and cyber security (Crunchbase, n.d.). Platform care infrastructures are therefore not organised by nursery managers, childcare practitioners or parents, but by the same structural actors financing betting platforms and data-extractive surveillance technologies. Here, the unifying interest is the *platform* as a vehicle for rent and data extraction, rather than providing childcare services; venture capitalists, as "gatekeepers in investment chains" (Cooiman, 2022, p.8), have an overinflated role in the governance and management of companies they invest in – a process Cooiman (2022) calls the "imprinting" of VC logic on companies they finance. This logic emerges from a particular ideal trajectory: acquisition of asset or start up at low cost followed by hyper-growth/rapid scaling, and finally exit, where the start-up is sold at higher value, either via initial public offering or to a large corporation (Birch, 2017). Financial *value* here is not rooted in economic performance or durability of the asset (in this case, childcare provision infrastructure), but in the dynamic, unstable projections of venture capitalists.

This shapes the temporal and spatial dynamics of platform infrastructure design. Venture capitalism is a numbers game, concerned with breadth of coverage, rather than depth of understanding and resourcing. An investor's profile typically comprises many start-ups, with most expected to fail; the hope is that one will be the *right* start-up, at the right time, and become the coveted 'unicorn' venture. To manage this, a bare minimum of time and resources are invested, particularly in early stages. To deliver on the 'hyper growth' needed to secure further rounds of funding, the platform must 'conquer' the largest possible ground, as quickly as possible. This stage of the platform's development is driven by structural actors with no intention of remaining in the sector; rather, exit is the desired goal.

Bubble is therefore part of a broader story of austerity-induced financialisation of care. Parents turn to Bubble to top up where formal childcare - publicly or privately financed - cannot fulfil need; where the state withdraws from responsibility, financialised models like Bubble step in to capture these abandoned infrastructures. Furthermore, as Bubble mobilises a largely undocumented workforce, and a worker category historically carved-out of employment and migration protections, it can provide a cheap option to plug gaps left by the current patchwork, offering an even cheaper service than other parts of the financialised care system (like private nurseries). When asking interviewees why families are using platform childcare, the high cost of formally-available childcare was frequently cited:

Parents use Bubble to save on nurseries. I've never seen nursery as expensive as in London. With Bubble, you can have a nanny for the price of a nursery or less - you can have someone very cheaply taking care of your kids. Why send your kid to nursery if you can pay way less on a nanny?

Ana

Childcare is becoming so expensive, and [nursery] hours are being cut. So, we now have a broader clientele for nannying that these apps are serving - before, [nannying] was just for the very rich. The government is not giving any support - so childcare is being privatised.

Lucy

However, the infrastructural gap being captured is *qualitative*, not just quantitative. Bubble captures infrastructural demand not only for *more* childcare, but for a particular *way* of delivering childcare - 'on-demand' and flexibly. The work and lifestyle patterns of middle- and upper-class professionals in London increasingly produces and is produced by an expectation that services like childcare and transportation can be at a person's door at short notice. This comes through when Bubble workers describe the scenarios in which they are recruited last minute:

Sometimes it's because their original childcare fell through - maybe the person was sick. Or because their kid is sick and can't go to nursery. But also, for regular reasons - like having a work call or a meeting and they need someone for a few hours.

Lina

Mostly we are a quick fix. The most consistent job I got was for parents who worked really long hours - so I took the kids to school, picked them up and stayed with them until evening when their parents returned. That way, the parent doesn't have to pay a full-time nanny, just for the hours I'm physically there

Silvia

Here, the provision of not just infrastructure - but *flexible* infrastructure - drives the take up of Bubble. As workers in high-wage, professional industries increasingly experience presence bleed (Gregg, 2021) between work and home life (facilitated partly by online technologies), the availability of childcare

that can be ordered last-minute and paid by the hour becomes appealing. As working hours for everyone become longer and more unpredictable, the standard childcare hours provided, for example, by nurseries do not cover working parents' needs. This workforce is often mobile - many moved to London to work in high-income professional industries, and do not have the extended family or community that would have, in a different historical moment, provided this care for free. In this context, platforms like Bubble become an emerging infrastructural player in the patchwork of childcare providers the upper- and middle-classes rely on to maintain their professional and social lives. As a GPS-driven, platform technology Bubble can facilitate lean, responsive childcare, at a swiftness unmatched by pre-existing childcare services (like word-of-mouth recruitment, agencies and institutional childcare).

The salience of flexible infrastructure as an offering is legible in Bubble's promotional material, and the imagined user it projects. As COVID-19 triggered broader conversations around 'essential work', Bubble seized an opportunity to promote the particular infrastructural labour it organises: "we'd always known as parents that childcare was the invisible infrastructure holding up our society - allowing parents to work, children to develop and businesses to flourish", positing its platform as enabling a "sustainable shift towards flexible working" ('Our 2020 Round Up', 2020). An article on Bubble's 'HR Hub' blog defines what is meant by 'flexibility' - and why it "trumps all", including "the quality of caregivers, the cost [and] the types of childcare available" ('3 Reasons', 2021). Flexible childcare is proposed as a necessary solution to downward pressure caused by broader changes in working expectations. Indeed, the intended audience of Bubble's 'HR Hub' blog is not individual parent-users, but corporate partners looking to use Bubble's employee benefit programme. Employees of company partners get subsidised access to Bubble's services, and no membership fees. Bubble makes a *financial* promise to corporate partners: providing your workers with on-demand, flexible childcare heightens worker productivity, as employees can attend last-minute meetings and do not have to leave work if their child is sick (fig 8.1)

1. Kids don't run on schedules...

Kids don't understand when you have a killer pitch coming up or a delicate appraisal to prepare for. As anyone who has spent any time with a child will know, they are highly unpredictable and will change plans in an instant!

There's nothing as draining as dropping your happy healthy child at nursery or school and then getting a call an hour later saying you need to pick them up.

Parents need childcare that they can arrange at a moment's notice and childcare that will come to them.

2. ...and nor does work

We all know that work is unpredictable. You can think you've got your childcare nailed for the week ahead and suddenly a project deadline is moved forward or a client decides they want to come and visit.

Parents want to be able to give their all at work, but unless they can arrange childcare quickly on their terms, they are stuck having to fit to a schedule they don't control and which just can't flex.

Schools, nurseries, childminders and helpful grandparents simply can't deliver the level of flexibility working parents frequently require.

Fig8.1 *Bubble HR Hub blog, 'Why Flexibility Is The No.1 Factor' (2021). Retrieved 30 August 2022.*

Care platforms have garnered a strong media presence, in which they argue childcare is essential to economic growth, and the flexibility of digital platforms is a modern, efficient solution - 'techno-fix' - to the childcare crisis. Bubble founder Ari Last is routinely quoted in business and mainstream media coverage of childcare funding, situating their employee benefit programme as fixes for "businesses looking at how they can solve [childcare] for their parents", boosting "worker productivity"; they offer "flexible, on-demand access to childcare in the parent's own home, whenever they need it" (Sky News, 2020). During COVID-19, Bubble frequently used the hashtag #ChildcareIsEssential in their promotional material and social media: "we'd always known as parents that childcare was the invisible infrastructure holding up our society - allowing parents to work, children to. Develop and businesses to flourish" (Bubble Life, 2020). Rachel Carrell, founder of childcare platform KoruKids, received widespread media attention upon securing £10million VC funding for the platform, which "uses tech to fill the childcare gap" (Strick, 2019). In a mainstream newspaper article, KoruKids was prescribed as a solution for finding "adaptable" childcare for those "odd hours"; "her mission" is described as "building the childcare infrastructure that should exist: flexible childcare for flexible working parents" (Strick, 2019).

Uber's ability to capture parts of London's transportation infrastructure is also mediated through a flexibility promise. Despite transportation, unlike childcare, being more squarely within the state's remit of infrastructure, austerity urbanism has seen funding stagnation in this area. TfL's assessment of its own funding shortfall reveals an 18 percent reduction in bus services, and 9 percent reduction in underground services, leading to a more unreliable, less adaptable transport network, unable to keep up with the needs of a growing urban population (TfL, 2021b). As increasing rents and gentrification pushes people (including middle-class professionals) further into the city's outskirts, the transportation system has struggled to expand and serve people in historically overlooked neighbourhoods (Paccoud & Mace, 2018). This context of underfunded, outdated urban infrastructure has left space for the private sector to capture functions traditionally conceptualised as state infrastructure via the platform economy (Sadowski, 2020b). Once again, however, this is not just about quantitative gaps - the *qualitative* offering of on-demand, digitally accessible infrastructures has become a key to urban competitiveness (Taylor-Buck & While, 2015). This is particularly true for Uber; as a globally recognised platform, being able to 'get an Uber' has become an expected service in large cities.

Uber both generates and satisfies demand for what Hodson et al. (2020) call "flexible mobility"; capturing and exploiting "existing mobility gaps, both appropriating existing informal mobility practices and 'under-utilised' assets" (p.1252). These gaps are spatial, speaking to unserved/underserved routes and last-mile connections. This has especially emerged as gentrification expands the territory of the city inhabited by mobile, middle-class people likely to repeatedly use services like Uber, who either cannot afford to regularly hail a taxicab, or live outside the inner city where taxicabs largely operate. These gaps are also temporal - where existing public transportation routes are inefficiently planned and resourced. This is tied to London's status as a financial centre, where the ability to move around the city *quickly* is central to creating a globally competitive commercial and business sector (World Bank, 2019). As one driver observed, Uber captures a previously underserved, yet sizeable, segment of the population:

Here are so many people who need to move around all the time - black cab is not enough for the people here. The Uber passenger is invented by Uber - this passenger could never ride in a black cab, because it is so expensive. Before Uber, they just wouldn't ride. They just wouldn't move around as much.

Azlaan

However, drivers emphasised the infrastructural gaps being captured are also socially engendered. They described covering for incidents where existing transportation infrastructure is unsuitable - for

example, for people with mobility issues, who struggle to navigate a physically arduous, inaccessible transportation system. Upgrades to improve accessibility of London's underground transport system have been routinely delayed by budget cuts (Investment Programme Report, 2022); meaning once again, where austerity urbanism excludes or fails, Uber can claim a techno-fix solution of providing flexible infrastructures. Drivers also understood themselves to be providing infrastructure where existing transportation infrastructure feels risky, such as transporting intoxicated passengers late at night:

Lots of us don't drink alcohol, so we're willing to work Friday and Saturday night. It's common in Western culture to party on evenings and weekends. So, we're there providing a service to the public during that time. That's where we fit in - if we weren't there, who would pick you up drunk, late at night? We're the ones picking up people from clubs and nights out.

Azlaan

Drivers broadly understood their infrastructural function as, to quote one interviewee, "pushing the city", by flexibly fitting into spatial, temporal and social gaps unserved by a stagnant public transportation infrastructure. Drivers like Azlaan located themselves as crucial to London's entertainment and hospitality industries, and the commercial sector, smoothing the pathway for economic growth in London's urban economy. However, as Azlaan also argues, this is not just about capturing and appropriating existing infrastructural gaps – but also about *creating* and extracting rent from new norms, expectations and materialities.

For Uber and Bubble, the ability to move flexibly in and out of infrastructural gaps in real-time and on-demand is partly rooted in platforms' financialised logics. Platformisation is one of many processes through which urban infrastructures are being re-organised via speculative financial logics. The investor approach of low-cost acquisition, hyper-growth followed by exit requires an asset-light model - one that does not build infrastructure but uses existing informal mobility practices and assets (like cars that drivers take on debt to service). This allows platforms to nimbly organise movement in and out of infrastructural and mobility gaps, without needing to commit the investments of time and resources typically required of infrastructural actors; they avoid the "risk and slow pace" associated with building infrastructure, which is incompatible with financialised models of value (Hodson et al., p.1263). As 'exiting' is the eventual goal of investors, there is less concern with building and owning fixed capital assets that yield profit over time, and more with growing speculative forms of value that can be sold on. Yet, this approach is unsustainable - it comes with an absence of planning and sensitivity to local contexts; to building cohesive, resilient

infrastructures that respond to local needs. Unlike historic spatial fixes, the platform fix does not *also* involve building “durable infrastructures that guided development over the long term” (Hodson et al., 2020, p. 1263), like bridges and factories; it does not leave behind something that is usable in other ways. Instead, it creates only lean, ephemeral infrastructures that are reframed as ‘flexible’. The *design* of infrastructures financed in these ways is not conducive to intentional, embedded planning.

Flexible Expulsions

From a labour perspective, the platform flexibility promise is undergirded by the coded and contextual disposability of platform workers. This disposability is *coded* because it is embedded in labour platform design, and in their business model. This disposability is also *contextual*, as it is enmeshed within a broader political, social and economic configuration. This configuration refers to the processes of racialisation, gendering and bordering that mediate access to categories like worker, citizen and human - categories of identification increasingly tied to accessing the material means of life. This contextual disposability politics builds on Sassen’s identification of expulsion as the undergirding logic of contemporary global political economy (2014), which she ties to the growing reach of finance capitalism, which rapidly enters and exits markets according to speculative logics, and lobbies for neoliberal (de)regulation. Here, the “immiseration and exclusion of growing numbers of people who cease being of value as workers and consumers” (p.10) translates to disposability; a marker of surplus populations whose access to regular employment and welfare in the Global North is contingent and unstable (Farris, 2015).

At the scale of the platform, this inclusion/exclusion dynamic appears through algorithmically mediated access to the gig, which includes and excludes based on real-time data (Kitchin, 2014). Workers are easily onboarded to the platform where they can access the *potential* of a gig, and therefore a form of economic inclusion unavailable elsewhere in the job market as racialised (in some cases, undocumented) workers. Yet, the real-time monitoring capacity of platforms, afforded by their computational infrastructure, means workers can be ushered in and out of infrastructural gaps as and when they are needed. This *granularity* of monitoring and responsive recruitment lies at the heart of the platform’s promise of cheap, lean and flexible infrastructure. The computational architecture of platforms makes it possible for workers to be compensated only for the minutes they are actively engaged in tasks the platform defines as ‘work’. It also facilitates the suspension or deactivation of workers, if considered viable and desirable, as punishment and worker discipline, or as a broader worker management tool¹⁶. The value of a person “as a worker”, to

¹⁶ As Uber and Bubble do not make deactivation data public, it is impossible to categorically state how common deactivation is. My research sample of unionised and non-unionised platform workers suggested the vast majority of Bubble and Uber workers had either themselves experienced deactivation or suspension, or

use Sassen's terms - and therefore the terms on which they can access this predatory economic inclusion - is assessed and acted upon in *real time*.

This computational dynamic is undergirded by the platform worker's legal status as a non-classified worker. This legal form enables two expulsive dynamics that make flexible platform infrastructures possible. Firstly, it enables the swift, unaccountable expulsion of the worker, by denying legal rights to disciplinary procedures. Secondly, by expelling workers from standard employer responsibilities for reproducing the worker (e.g., pensions, parental leave, sick pay), the platform can maintain its model of having more workers than jobs plugged into the platform in any given territory, which is essential for just-in-time and just-in-place flexible infrastructure.

Crucially, being made expendable - situated on the edge of expulsion - is not just a technocratic or legal process. It is embedded in the cultural, social and economic processes of racialisation, which exists throughout capitalist history. As Mbembe argues, the emergence of computational capitalism - a shift from the era of the machine to the age of the algorithm - is the "becoming-Black-of-the-world"; the "[making] redundant a huge chunk of the muscular power capitalism relied upon for a long time" (2019b). Here, a growing mass of the population has been integrated into a "new fungibility, this solubility, institutionalised as a new norm of existence" (Mbembe, 2017, p.6), as participation in categories that conferred human status - worker, citizen etc - shrink. Those on the outskirts become marked through and alongside their racialisation; this "location as almost included and yet on the boundary" constitutes an "(often if not always) racialised economic position" (Bhattacharyya, 2018, p.27). For Bhattacharyya and Mbembe, proximity to expulsion is both a marker and consequence of racialisation outside of Whiteness; it is linked to and facilitated by the carving-out of populations from purportedly 'standard' or 'universal' norms and rights. This includes their differentiated status as workers, which is articulated through and alongside their differentiated status as humans. Furthermore, disposability is facilitated by one's pre-existing outsider status; the ease with which a worker can be disposed is made easier by the fact their right to be there, as racialised outsiders, was already contested.

The ability of platforms to engage and be engaged in this racialised politics of expulsion not only follows from the fact they capture those racially excluded from standard work. It also follows from the significant power platforms gain in the sectors they operate in, which enables them to gatekeep worker participation in these sectors. Here, platforms gain the power to expel by becoming *inflexible* infrastructures

knew someone first-hand who had. A study of Uber and Lyft drivers in Los Angeles found two-thirds of 810 surveyed drivers experienced deactivation (RDU & ALC, 2023).

in the working lives of low-wage racialised populations. This is particularly true for platforms with monopoly status, like Uber. Previously, if a relationship broke down between a driver and a minicab office, the driver could go to another office in the same or nearby area. However, during my casework research, it emerged that Uber had such centralised power in the sector, that expulsion from the platform was tantamount to expulsion from the work itself. In an era of racialised carve-outs from the welfare state, expulsion from the work leads to broader expulsion from the means of a dignified life, as workers have little outside support, and increasingly unmanageable debt:

Before, I could move. Say I was working across the road, and I had an issue or wasn't happy - I could move onto the next company. And there was work going around. The problem we've got now is Uber has become so big, that if I want to be a minicab driver, I can't get that job. When I was deactivated from Uber, I returned to the last minicab firm I worked at 4 years ago. I tried there for three months. I was waiting 2 or 3 hours for one job. Even Addison Lee and other apps struggle because Uber is the giant. If you want to work, you either work at Uber or you just leave.

Azlaan

. I'm not a young guy - I'm over 50. Where am I going to get a job quickly? This is the only way I can sustain myself and my family. If it's taken from me, you must understand the impact it is going to have on me and my family.

David

I'm a single breadwinner for my family. I have a wife, four kids - three are under 10. Uber is the only income source I can access. Being deactivated - I'm full of anxiety and stress. The minicab office is finished - I can't get anything outside of Uber.

Fadumo

Mentally, I'm in complete panic. I know there's other apps, but Uber's got all the customers. Once you log into Uber, you're getting jobs steadily the whole day. Other apps don't have that workflow.

Iqbal

Bubble's logistical power - the power to track, consolidate and shape the movement of people - within the childcare space is complicated by the fact that unlike delivery and taxi driving, monopolistic power is not held by one or two platforms; logistical power is more diffusely held by agencies, multiple platforms as well as informal networks. Yet, Bubble has become central to the economic life of, particularly Latinx, undocumented care workers I spoke to, as the Hostile Environment carves them out of accessing agency work. Even migrant workers I spoke to right to work (e.g., Eastern-European workers) could not get agency jobs and were unsure why - their applications were either ignored, or they were not offered work. Informal networks are also less accessible for undocumented workers - the Hostile Environment has made it difficult to secure stable housing, which is necessary for word-of-mouth workers to embed and build reputation within communities. Given these racialised and bordered exclusions, platforms have become integral to undocumented workers finding consistent care jobs, and within this, Bubble is a preferred platform - it is comparatively more secure (regarding personal safety and income) than alternatives like childcare.co.uk, care.com and Facebook. Prior to introducing right to work checks, Bubble struck a comparatively good balance for workers between low barrier of entry, whilst having review systems that reduce the occurrence of fake adverts:

I've done two jobs through Facebook. It was odd but okay - you can't really trust it. On Bubble they check the parents so it's safer than, like, care.com. You can find work on those platforms, but you must be careful - there are scammers there. So, I find Bubble more reliable...it's the only place that verifies parents and has reviews people use. On care.com they don't have verification. They have reviews, but nobody uses it.

Silvia

The first place I used was aupairworld. You make a profile, and you can apply for open positions - it's a very known website. But everyone says all the dangerous host families are there - the people that exploit you most are on that website. So, I moved onto Bubble. Gumtree, Facebook, Care.com all are more exploitative - Bubble is obviously also exploitative, but it is safer. They have a credit card system, the parent usually has pictures, and you're provided with details - when you match a job, they send you confirmation email with address and phone number - you have proof you are working for the person so it's harder for them to not pay you. There's a paper trail - which is scary for some undocumented girls, but ultimately it's scarier to not work than to work.

Yara

Since Bubble introduced right to work checks, undocumented workers have struggled to onboard - many have moved onto platforms perceived as less safe, and some who had been deactivated, like Francisca, returned to their home country after struggling to make ends meet:

New people now rely on word-of-mouth, Facebook and childcare.com. I see ladies really struggling because they can't find anything - they are going through interviews and will take any job they can get because they need money...[there are] issues with fake job adverts on Facebook, fake profiles asking nannies to come to their house for job interview. It's dodgy - not safe at all. [I've known of] people being fired without notice - just kicked out of the house. Once a girl had a passport stolen.

Yara

The ability of platforms to rapidly capture segments of the workforce (especially those excluded from standard employment), and just as rapidly change their conditions of participation gives them acute power not only in cities - but in the economic world of low-wage racialised communities. Even in sectors without monopolistic platforms, being shut out from powerful players that have achieved significant economies of scale relative to other sectoral actors, is acutely consequential. Crucially, these are the platforms with the most VC backing - as they can rapidly dominate user base through VC-subsidised voucher schemes and promotional offers. With Bubble, this rapid scaling relied on undocumented workers who formed most of the initial workforce, as they could not access more established routes to work. Yet, after a particular tipping point, these very workers were excluded from an increasingly prominent recruitment method in their sector, despite paradoxically being central to its growth. As such, those subject to racialised labour market exclusions become a central means through which platforms gain infrastructural power yet are made disposable and are dispossessed by the very infrastructures they created. This results in a deeper association between racialisation and proximity to expulsion - as racialised workers become increasingly tied to intermediary infrastructures, whose intermediary status not only renders them unaccountable, but also transient and unstable.

Producing Interchangeability

These computational and legal strategies of expulsion are undergirded by the production of platform workers as *interchangeable*, and therefore disposable, entities. Indeed, interchangeability is intimately linked to the historic concept of racialised fungibility as developed in Black studies (Wang, 2018; Taylor & Sisco King, 2021), and both have racialised political economic function: as Hartman writes, “the fungibility of the slave – that is, the joy made possibly by virtue of the replaceability and interchangeability endemic to the commodity” (1997:p.21). The human imagined and codified as a commodity is considered disposable through and alongside their coding as easily replaceable with one another. In platform work, interchangeability is facilitated through the legal (mis)classification of workers. Indeed, whilst the literature often focuses on how (mis)classification makes platform workers easily fire-able, workers also emphasised ease of *hire-ability*, and how this contributes to the cultivation of interchangeability. Their overarching sense of being immediately replaceable was borne of an understanding that there were always more workers than jobs on the platform, and the automated management system allowed these workers to be easily moved in and out of worker gaps. The image a *long line of workers waiting* to replace them recurred in conversations with workers across both platforms - although this was felt more intensely amongst Uber drivers due to the scale of workers engaged in the platform. Indeed, whilst the literature rightly focuses on the ease of firing workers as a platform management tool, the ease with which workers are hired is also a key organisational and disciplinary platform strategy. As easy as it is to expel a worker, it is as easy to recruit a new worker in their place by drawing on the pool of surplus workers ‘plugged into’ the platform, and by recruiting more workers into that surplus pool. The spectre of expulsion and replacement weighed heavily on workers’ imaginations, and their understanding of their bargaining power with their client and the platform:

Lots of us have been minicab drivers for years. When Uber started, we joined and there was a small sense that we could have dialogue with Uber - we could tell them what we wanted. But that dialogue finished really quickly - when Uber became so big, they didn't have to give a shit about us anymore. They don't worry about losing two or three drivers, or drivers going on strike, because they say: well, we've got thousands more of you. They're waiting in line to take your place.

Ibrahim

Alongside exploiting legal mechanisms, platforms deploy interface design strategies that cultivate the sense of there being a surplus pool of workers, in line to replace one another at a moment's notice. Uber's ‘phantom cabs’ exemplify this (Calo & Rosenblat, 2017). Upon opening the app and inputting your journey request, Uber's interface shows icons of cars in the area surrounding your location (Fig8.2), implying there are several cars waiting nearby to be electronically ‘hailed’. Yet these icons do not represent real cars

(Isaac, 2017) - it is an illusory image, designed to create the *impression* of several, immediately available workers who are indistinguishable from one another. An Uber staff member has described the interface as showing a “visual effect more than an accurate location of drivers in the area” and should be thought of “as a screensaver on a computer” (qtd. in Rosenblat, 2015). Here, Uber’s design choices communicate to drivers and users the logic Ibrahim describes as: “we’ve got thousands and thousands more of you; they’re waiting in line to take your place”, engendering the modes of discipline that come with understanding one’s self as an interchangeable entity. Yet, this shapes not only how workers conceptualise themselves, but how customers are encouraged to conceptualise workers:

Nowadays, everyone thinks when they book a cab, the driver is there do whatever they want. They know if they complain, the driver will be seen as at fault and removed. So, they just do what they want.

Abdul

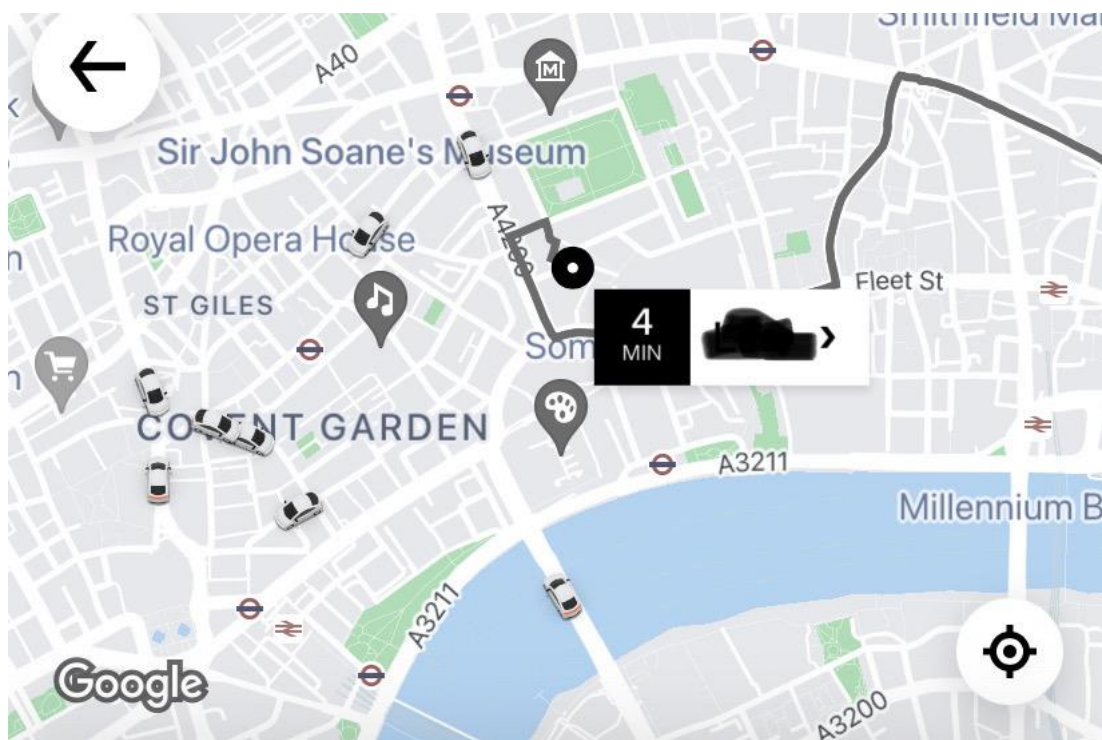


Fig8.2: Uber interface screenshot showing ‘phantom’ cars. Retrieved 6 March 2023.

This cultivation of interchangeability is characteristic of how platforms govern and manage infrastructural labour. This holds even when interchangeability is at odds with the work being delivered - namely, relational work like childcare. As care work relies on interpersonal relationships, it is not as easily absorbable into logic that one is purchasing interchangeable products from interchangeable workers. Consequently, as Farris outlines, low-wage domestic care work has a nuanced relationship to the category of disposability; where the reserve army of labour is typically characterised by cyclical inclusion/exclusion from employment, care and domestic work occupies a slightly different configuration:

The non-cyclical nature of the care and domestic sector, the fact that its highly affective component renders it difficult to automate, as well as the fact it belongs to the category of labour-intensive and non-relocatable human services which societies need to reproduce the daily lives of their members, configures it as a segment of the economy in which the workers are less classically 'disposable'.

(Farris, 2015:138).

For Farris, the spatial dynamics of care work, and its centrality to the reproduction of capitalism, means the low-wage, racialised women that do hired care work are more accurately described as a 'regular' rather than reserve, army of labour. This 'regularity' refers not to worker status, but to the consistent, rather than cyclical relationship between capitalism and care work. Furthermore, the desirability of long-term relationship building makes care workers less intuitively disposable or interchangeable. Yet, the distribution of care work as racialised and classed precarious labour is shaped by broader political economic configurations, including the economic boom/bust cycle. Therefore, whilst care work *itself* is less classically disposable, whether racialised migrants are integrated into the economy *as domestic workers* is shaped by broader cycles of economic growth and downturn, and availability of institutional care provisions. Hence, a certain dynamic of *worker* disposability remains - albeit articulated differently from other segments of the reserve army of labour.

The desire of Bubble, as founder Ari Last describes, to become the Uber of babysitting (Basul, 2019), indicates resolve to shape care work into a logic that more typically resembles the reserve, rather than regular, army of labour. For the 'Uberization' model to work, a form of interchangeability not typically associated with care work must be engendered. To do so, Bubble endeavours to normalise the subordination of long-term attachment otherwise desirable in childcare relationships, to the promise of convenience, flexibility and on-demandedness. Through its interface and promotional material, Bubble communicates to users there is a continuous stream of care workers available, the scale of which is made visible to parents

through the 'swipe' motion. If parents do not like something about their sitter, this need not be resolved or negotiated, because sitters can simply be replaced. As is true for Uber, this is made materially possible by taskification and worker (mis)classification; workers are not compensated for time spent 'plugged' in, even though this underpins the ability of platforms to maintain an on-demand workforce.

The *design* choices and capacities of platforms play a role here. The design choice of a swipe function to browse sitter profiles mimics the materiality associated with dating apps, situating Bubble within an ecosystem of dating platforms like Tinder, Grindr and Hinge, *and* on-demand labour platforms like Uber. David & Cambre (2016) have explored how "swipe logic" shapes the intimacies and connections that happen through a platform; "what [the] platform invites users to do constitutes the ground for understanding of what they actually do" (9). Whilst David & Cambre's analysis emerges from researching dating apps, their findings help illuminate how Bubble's design shapes the care relations it facilitates. Essentially, the swipe logic communicates replaceability, transience and depersonalisation; as a user interface, it encourages "speed, ethereality, fragmentation and volatility" of connection (2), which in the labour context, translates to precarity. Workers I interviewed found this reflected in their reduced bargaining power, as well as the tenor of the relationship organised through the app.

Being a Bubble nanny in London, people don't treat you as a person with needs. You are disposable - literally disposable. That's been the hardest part of my experience - I felt I was disposable. You use me, and then just: oh, I don't need you anymore. I found a better deal, or I'm going to cancel your sit with five minutes notice because you aren't needed now. Even if we have an agreement you will work for this amount of money and time, it's just like - we can get a different nanny in, so we don't need you now. You can't just throw me away like that - I'm a worker. I need to have notice, a warning. But people think it's okay, and with Bubble it's so easy to get another person - you just swipe and get someone new. I was once hired for an express sit in the middle of the day, because the parent didn't like the nanny she hired in the morning because she said her English wasn't good enough - so she let her go in the middle of the day, and ordered another one, which was me.

Maria

Neither Bubble nor the family really value me - if I leave, there's always someone else to fill the place.

Tina

The sense workers are easily replaceable, as Maria describes, partly results from Bubble's design strategies and its computational architecture, which creates a 'long line of workers waiting to replace' one another. The platform exploits legal mechanisms to 'line workers up' in a queue without compensation and uses interface design to communicate this to platform users. Like many workers I interviewed, Maria identified the fact that Bubble allows you to "just swipe and get someone new" as a specific intervention of platformisation. The promise of flexibility here is underwritten by the visual and computational production of childcare workers as - to use Maria's words - "disposable", creating a dehumanising effect where workers are not understood as "a person with needs". This feeds into broader ambivalence of platform visibility; Bubble makes visible a typically invisibilised workforce - workers that previously operated through informal, off-the-books networks and worked in concealed private domestic space and 'blended' into the infrastructural background of the city are now recorded, datafied and visually represented by their profiles. Yet, this visibility does not confer additional rights or social value; in fact, the mediation of this visibility through the swipe logic confers further interchangeability and work devaluation.

This marks a shift in the organisation of informal care networks, which typically have relied on longer-term, community-based relationships, where a few babysitters and nannies work a particular area, and are somewhat embedded in local parent networks. Whilst this did not mean secure employment, the relative complication of securing a new childcare worker if an existing relationship broke down incentivised a different kind of relationship - one where a lost worker was not easily replaceable. This distinction in the social relations of care being produced by platforms came through during conversations that emerged during a 'stay and play' attended by app-based and non-app-based childcare workers. Yara, a Brazilian Bubble worker was temporarily caring for the child she brought to the stay and play. The two non-app-based workers, Andrea (white British), and Lucy (white Australian with settled migration status) met several years ago whilst nannying for children attending the same school. Both lived in the area they worked in, and largely got work through word-of-mouth recruitment amongst parents at schools local to them.

It was clear during their conversations that Andrea and Lucy had built extensive, localised knowledge of the area and schools they worked in over time: as Lucy put it, "I feel really submerged in the [SCHOOL REDACTED] social setting. Like all the parents and stuff." They joked about knowing more of local school teachers, norms and expectations than parents, and translating the school's culture and expectations to families they worked for. Both were on PAYE contracts, working for no more than 2 or 3 families at any one time. Yara, however, who garnered most of her work from Bubble, had a more splintered, volatile experience

of work. She had to accept jobs all over the city, and the lack of contractual agreement meant even when she worked consistently with one family, this was often for a limited period (for example, during the summer break). This was also shaped by her precarity as an undocumented migrant who cannot access stable housing due to Hostile Environment restrictions. Like many undocumented workers I interviewed, Yara moved home several times a year, precluding her ability to lay roots in a particular community as Andrea and Lucy could.

The social and labour relations being engendered by Bubble, alongside these broader spatio-political conditions, constitute workers like Yara as interchangeable, as it reduces their ability to establish locally-rooted knowledge and connections. The way Bubble mediates recruitment of childcare workers aims to standardise workers into demarcated qualitative and quantitative markers that can be easily interchanged with one another. Yet, whilst Bubble attempts to impose this logic, it is far less successful than Uber at achieving it. In many cases, after initial connections are made on the platform, future arrangements are moved off-app:

I've had three or four regular jobs on Bubble - most are random one-offs, like, if I wasn't doing anything on Friday, I did a job. I asked some families if they could book me off-app un future, because Bubble takes 10 percent. But lots of girls let them do whatever they want because they need the money, so they don't ask to be rebooked off-app. But I felt comfortable because I've been doing this for two years now. So, I'll do a first babysit, then I say, if you like me please text or WhatsApp me. A lot of parents are willing to go off-app, because the [parent] pays fees too.

Silvia

Bubble struggles to wholesale implement an Uberization model to childcare, because of the relationship of care work to disposability and interchangeability outlined by Farris (2015). Whilst Bubble has arguably normalised one-off, 'express' sits, it remains true that once a family connects to a worker they trust, they endeavour to maintain that relationship whilst bypassing Bubble's commission. After the initial connection, the platform does not offer more than what the worker is providing. This is ubiquitous amongst care platforms and hampers their ability to achieve the kinds of digital enclosures other platforms have in masculinised sectors, like taxi driving. The idea that what is being sold in feminised labour is 'care', 'love' and 'trust' complicates Bubble's model, as it creates gaps in the platform's infrastructural capture; arrangements, interactions and processes that could be datafied and turned into sites of rent extraction 'slip' out of the platform's grasp.

To minimise infrastructural slip, Bubble employs a carrot-and-stick approach. The 'carrot' includes Bubble's employee benefit programme, where booking fees are subsidised by a user's employer. One of Silvia's clients, who is in the employee benefit programme, keeps all interactions on the app because of the convenience of cashless payment. Bubble's fee structure also tries to incentivise platform retention; the more sits booked between the same parent and sitter, the lower the booking fee for both users - from 10 percent on the first sit, to 8 percent for the second to fifth sit, to 5 percent for the sixth sit and onwards ('Platform fee structure', 2018). Workers that complete five sits in a calendar month are given 'super sitter' status, which also lowers booking fees for both users - an attempt to incentivise workers to record sits via the app. One worker I interviewed, Tricia, suspected having 'super sitter' status gave visibility privilege - meaning they would be one of the first to appear when parent searching for sitters. Whilst this cannot be confirmed, due to algorithmic opacity, my experience 'swiping' on the Bubble parent app corroborated Tricia's suspicions. Regardless, these incentives do not stop most workers trying to move off-app, as no fees remain the preferable option.

For the worker, the 'stick' is more keenly felt. Almost every worker I interviewed had been suspended from the platform when there were suspected to be attempting to move, or had already moved off-app. Workers sometimes knew why they had been flagged - for example, if a line of numbers is exchanged via the app's messaging service, this triggers automated suspension:

They're trying to keep people on-app, and not do anything outside of it. Once, this mum tried to organise a sit with me outside the app, and they blocked my account for a month. I had to email them loads to get my account back. It wasn't even me that was trying to work off-app, it was the mum who suggested it. I'm pretty sure [Bubble] read the messages and that's how they knew - but they just blocked me, not the mum. They never tell the parents off; I think the parents must do something very crazy to be banned or blocked.

Maria

I had a parent book me last minute. She lived five minutes from me and asked if I could just come for an hour and she would pay me in cash. But because she wrote 'cash' in the Bubble chat, a few days later I tried to log on and couldn't get in the app. I had to email Bubble and tell them I don't think I did anything wrong and gave an explanation. They said there's nothing they could do. So, I wrote another email with a friend's help who told me to show how desperate my situation was - that I'm a student and I

can't make a living like this. It's ridiculous...like the app works for you for a period, and then they ban you for one mistake. Not even a huge mistake, or a mistake that's yours. Just give me a warning at least so I know what the problem is.

Karolina

The impact of suspension is significant. Workers are not only unable to seek work whilst being blocked, but they are also prevented from communicating with clients they have an existing booking with, meaning they lose out on expected income. Workers expressed frustration and distress at how volatile this makes their income stream - particularly when, as Maria states, they are erroneously flagged and suspended via an automated system. In turn, unless they have the client's personal phone number from a previous sit, they cannot communicate with upcoming bookings during a period of suspension. This compromises their reputation and relationship with prospective clients. As Maria outlines, clients are not also blocked for sharing numbers - instead, they are informed the worker they booked with is suspended and are encouraged to find a replacement via the app, further engendering the production of flexibility via worker interchangeability. Through these strategies, Bubble tries to get parents to conceive themselves as in a relationship not with the worker, but with Bubble - the worker is replaceable and transient, but Bubble's ability to provide you with a childcare worker on-demand is not. This obfuscation is produced through a combination of incentive, punishment and surveillance.

Maria's suspicion that Bubble was surveilling her messages to keep her on-app was shared by other workers. Tina and Claire had both been blocked and texted personally by a Bubble representative after not replying to a parent for a few days, because they had been messaging via WhatsApp. This was both to nudge them to reply to the parent, and to ascertain if they had been arranging sittings off-app:

They don't like you to message separately, off the app. So, you can't just text or WhatsApp chat with someone you connected with via the app. And they can read the messages I'm sure - if you've not replied to someone they'll message you and say, 'have you connected with this mother again since your last conversation?' I've had that a few times, where they wanted to know whether we had messaged off-app - it felt like a personal message from how it was worded.

Claire

The Racialisation of Skill

The principle of interchangeability, which lies at the heart of platform work, is rooted in racialised and gendered conceptions of skilled and unskilled labour. The normative assumption that Bubble and Uber workers are interchangeable, and therefore can be flexibly moved in and out of infrastructural gaps relies on the idea that they are doing something anyone can do, and so are easily replaceable. The logic continues that their work requires no experiential or embedded knowledge - the skills acquired by workers over time are rendered illegible, as the work itself is considered unskilled and doable by anyone. Despite the criticality of this infrastructural labour to building competitive urban economies, the social construction of this work and its workers as unskilled - articulated through race and gender - means this centrality is not translated to employment security. Whilst the *labour* is essential, through racialising and gendering processes, the *labourer* can be coded as unskilled, non-essential and disposable.

Labour migration scholars identify this as a central logic of contemporary migration regimes - particularly in the Global North, where growing racist populism has translated to restrictive, protectionist immigration regimes (McDowell, 2007; Anderson, 2014a; El-Enany, 2020). The proliferation of temporary work visas and points-based immigration policy has necessitated more stringent social, cultural and bureaucratic classifications of skilled and unskilled labour - people can enter the country based on whether they are *perceived* as economically or socially valuable. The definition of who and what is 'skilled' becomes codified according to what is socio-politically considered desirable and non-desirable migration in context of racist populism - even if it is precisely low-wage and undervalued, racialised workers underpinning economic growth. Contrary to normative assumptions of skill as a value-free metric (Cornford, 2005), the classification of skill is partly shaped by shifting racialised classifications; as Glenn writes, "the division between 'skilled' and 'unskilled' jobs is exactly where the racial division typically falls" (1992:37). Here, 'skill' becomes a proxy for racialised desirability and racialised assumptions around social value, knowledge and intelligence. Anderson applies this to context of 21st century British immigration rhetoric, where 'low-skilled' becomes associated not only with non-desirability, but with interchangeability:

The fact that it is not considered skilled, does not mean that anybody can do it. In the case of work that involves care-giving in particular, personal relationships and trust can be extremely important. But immigration controls are premised on the idea that low-skilled workers are fungible, that any British person can do a low-skilled job as well as or better than any non-British, and so the job should be given to the British worker.

(2013:38)

This continues a legacy of British immigration law using proxies to create a racial tap governing the flow of migration, and doing so through increases in racist populism. Combined with devaluing qualifications held by Global South migrants, these proxies allow racialised divisions to be articulated using the language of technocracy and objectivity (Lindley, 2009). With care work, this is compounded by how this labour is gendered, which casts it outside the remit of 'work' entirely, situating it instead as 'natural instinct' held by all women. This is particularly layered for women racialised as 'naturally' caregiving (Gutiérrez-Rodríguez, 2010). With Bubble, this is articulated through ideas of Latin American femininity: as Maria put it: *"families always say they like Brazilians because we are so natural...it's less like we're workers"*.

Amongst Uber and Bubble workers, the situating of their labour as unskilled, disposable and interchangeable was keenly felt when they experienced automated suspension or expulsion. During my casework ethnography, I frequently observed workers that had been Uber driving for several years - some having previously been minicab drivers for decades before - being automatically deactivated following minor mistakes or unverified allegations. Workers were consistently shocked that their years of skill and experiential knowledge counted for little when their time came. Indeed, many saw themselves as working on borrowed time - it was only so long before you committed enough alleged minor infractions before being blocked. Khuram was deactivated after a single complaint by a passenger, despite working for Uber for 6 years:

I've worked for Uber for 6 years. I have 3500 five-star ratings and almost 20,000 trips. At the beginning of June, I tried to log onto the app. It just said: "contact customer support". I did and they said they received feedback and will be in touch but couldn't tell me when. Two or three weeks passed - I was waiting every day for someone to contact me. I couldn't work, and I had bills to pay - I relied on Uber for my full-time income. Every day I was sitting in my car thinking: you don't trust me as your driver. You left me for 6 weeks with no income, with all my bills.

Several drivers, like Andrei who was deactivated after working as an Uber driver for two years without incident, emphasised to me they were a "professional driver", to indicate the dissonance between how they are coded in and by the platform, and how they understand themselves. For, Hassan this constitution of interchangeability via conceptualisations of skill was a form of dehumanisation:

I have been driving minicabs for 10 years. I don't have a single point on my license....they treat the driver like they are animals - they can block anyone because they feel they have so many drivers, it doesn't

matter what we can do...Customers think they know better than us, but I've been driving for a long time in this country, and I have no points on my license. I know what I'm doing.

This resonates with broader racial divisions within London's taxi economy. As explored in chapter four, the inequity of rights, wages and urban integration between the majority-white taxicab drivers, and majority Black and Asian minicab drivers is articulated along the lines of taxicab drivers having 'the Knowledge' - a shorthand for the Knowledge of London test taxicab drivers must pass to operate. The Knowledge test is the most rigorous taxi knowledge test in the world - taking three to five years to complete. Yet, the implication that one part of the taxi sector carries 'knowledge', and the other does not is curious - particularly given how this division is racialised, and the acute differentiation of labour rights conferred through this division. Indeed, when casually discussing my research inside and outside academic spaces, the notion taxicab drivers possess "the knowledge" was consistently cited as a reason for their considerably differential treatment compared to Uber drivers. This erases the embedded knowledge and human capital held by PHV drivers - pre-Uber this would have also included comprehensive knowledge of a local area, learned on the job, rather than through study. Yet, even after the widespread uptake of GPS, Uber driving still requires learned familiarity/understanding of the city built over time:

I rely a lot on my own knowledge of the city. I use GPS to get to the passenger's exact door, but you must also use your own knowledge otherwise you will get loads of tickets.

Abdul

The technology fails a lot. [GPS] give us the most stupid route that we can't go through. When it fails, you rely on your own knowledge - especially driving in central London where lanes close all the time. They don't appreciate that - they think anyone can do it. But you can't rely on a sat nav - you must know your way around.

Kai

The skills you need are quite robust - you need to understand how to avoid traffic and things like that. But Uber tends to penalise you when you use your own knowledge - because it doesn't calculate the traffic, so it either doesn't pay you for the extra route you had to take to avoid traffic, or it doesn't like that you took a different route to the one they suggest.

Furthermore, Uber's introduction of a rating system has - as explored in the next chapter – created demand for advanced customer service skill. For app-based drivers, having emotional labour and conflict de-escalation skills is paramount to survival - far more so than for taxicabs who are not subject to ratings-based management. The erasure of this human capital speaks to a broader racial politics articulated through the mind/body division; whereby Whiteness is constituted possessing reason, intellect and domination of mind over body, contrasting the racial Other who is reducible to their body or 'nature' (Alley-Young, 2008) – be it the absence of 'knowledge' in Uber driving, or the 'naturalness' of racialised women at caregiving. This is relational - in different moments, the white working-class position associated with taxicab drivers may fall on the wrong side of this Cartesian dualism. Yet, in context of racialised divisions in the taxi economy, 'the knowledge' is constructed against the Uber driver, who is in turn an interchangeable body.

Yet, as earlier chapters have shown, the hyper-competitive, metrics-driven management associated with platforms has led to increased skill and labour demand, without increase in pay and security. From Bubble workers marketing themselves as providing a competitive childcare 'experience', or being willing to clean and cook, to Uber drivers providing elevated customer service to survive ratings-based management. Yet paradoxically, this increased demand comes with a simultaneous need to produce interchangeability, in order to deliver on the promise of flexible infrastructures. Workers must be unique and 'stand out' amongst one another yet be easily replaceable - both as a disciplining tool, and as a function of flexible, on-demand labour. Workers are constantly navigating this contradiction – trying to last as long as possible before being expelled from what is an individually and systemically unsustainable infrastructure.

In conclusion, the promise to provide flexible techno-fixes to infrastructural gaps has enabled platforms to embed themselves into the fabric of major cities - inserting themselves into existing gaps and creating new expectations and norms amongst high-waged urban professionals. Undergirding this flexibility promise, is the cultivation of worker interchangeability, achieved through legal and design strategies of platforms as self-appointed infrastructures of intermediation and transience. Worker interchangeability is made further possible by the racialisation and gendering of skill, which situates work associated with racialised serving classes as interchangeable work done by interchangeable workers. This is compounded by a broader racial politics that cities like London are enmeshed in - with the ideological work of immigration regimes constituting racialised surplus populations as essential but unwanted, and dehumanised through material, legal and cultural processes. Indeed, the interchangeability and disposability platforms engender

and rely upon to produce flexible infrastructures rest erasing workers as embodied beings. As the following chapter argues, this facilitates and justifies a disproportionate absorption of risk and injury by platform workers to maintain the appearance functional infrastructures - despite platform workers being less able than other urban actors to shoulder and absorb the failures incurred by platform infrastructures.

-9-

The Promise of Frictionlessness

On 24 February 2023, Mohammed, a Deliveroo worker, collapsed. He had been delivering food to residents of Meranti House, a luxury block of flats standing in the London borough of Tower Hamlets - the poorest borough in London. He fell at the building's glass doors - just a 13-minute walk from the Thai restaurant where customers had placed their order shortly before.

Passers-by crowded around the scene, bargaining with the concierge to let them carry his body off the wet pavement and into the lobby. They refused. Mohammed's blue rider jacket marked him as someone who had to stay outside. To be let in for only the precise minutes it takes to place a meal at a resident's door. Meranti House is not the only building in London with this rule. Under the 'OPEN' sign on many of the city's restaurants now hangs a caveat: 'DELIVEROO AND UBER EATS: WAIT OUTSIDE'. As the small but animated crowd deliberated on what to do, Mohammed's phone, which lay next to him, was pinging and flashing. Sensing he had not moved in a while, Deliveroo's algorithm was nudging him to hurry up and complete the delivery. It took a whole hour for the ambulance to arrive.

A week later, I stood in Altab Ali park where a demonstration was being held by the ADCU, the app-based drivers and couriers union. The park is a few metres from Meranti House, where one-bedroom flats go for just under £1 million. I pictured Mohammed's head on the cold concrete, hearing Deliveroo's notification sound as he drifted in and out of consciousness. I thought about how that vexatious jingle has joined the orchestra of footsteps, plate-clattering and engines that make London's background noise. I thought about how the customers stepped over Mohammed's body to retrieve their order, and returned to complain an item was missing. I tried to rationalise why the concierge, probably themselves on a zero-hours contract, did not identify with Mohammed in that moment. Were they concerned breaking the building's rule might terminate their own flimsy working arrangement? Were they simply emboldened by petty power? The people who fled their cocktails to help - would they have seen Mohammed differently had they been connected by the app rather than happenstance?

I thought about Tower Hamlets and its rabid, rapid gentrification, which is trying to (literally) pave over a history of racialised urban struggle. Known as the 'Maker Mile', Tower Hamlets has long been the beating heart of London's working class - where the city's racialised unwanted have laid their first roots. From Irish migrant workers and Eastern European Jews in the 19th century, to the post-war migrations of

Bengalis, Africans and Caribbeans - the othered hands that make London have for centuries called this place home. It has given community and connection, but also the agony of state abandonment and far-right violence. Indeed, the park we stood in was named after a 25-year-old Bangladeshi textile worker, murdered on his way home from work by three white teenagers for being - in their words - a "P*ki". On the day he was killed, there happened to be a local election, where the fascist National Front won 10 percent of the vote. How strange - a place so derided in popular media for housing society's undesired, has itself become such desired real estate. From the vantage of Altab Ali park, the Meranti Houses being erected felt incongruous with the brick buildings of the East London I grew up with. I never thought about the people living in those glass towers - they felt more like monuments than homes. Clearly, they never thought much about us either.

Mohammed's story illustrates the human cost of an app-based city. It demonstrates how platforms cultivate expectations of particular spatial and temporal possibilities - what you want, where you want it, when you want it - and engenders a set of social relations to produce that reality. The slick, clean surface of the interface conceals a volatile network of fatigued bodies and frantic minds - of struggle, conflict and dysfunction. Underpinning the appearance of smooth operation is a messy web of human capital. Yet, as legible in Mohammed's story, that human is abstracted from the process; the social relations engendered by platformisation encourages blurred boundaries between a human worker and a machine. Within the "computational speed regime" of algorithmic labour organisation (Mbembe, 2019a), the human body, its needs and capacities, are read as 'glitch'. The broader racial politics in which these bodies are enmeshed - and their histories of illegibility within the category of human - are (re-)articulated through and alongside the social relations emerging from the platform juncture.

This chapter explores these dynamics through the analytic of 'friction'. Alongside promising flexible infrastructures, platforms like Bubble and Uber promise to produce *frictionless* infrastructures (Leszczynski, 2020). To politicians and investors, platforms promise a lightweight model of infrastructural organisation and design, freed from the 'friction' of geography, politics and human bodies. To customers, platforms offer a frictionless user experience where, at the click of a button, your 'task' will be completed - promising ultra-convenience, speed and control. Yet platforms generate friction; the quantity and quality of interactions organised by platforms multiply the potential of risk, conflict and misunderstanding. The expectations of frictionlessness platforms set, therefore, do not align with the realities they are creating. So, the question becomes: how, where and by whom does the excess friction generated by platform infrastructures get absorbed?

This chapter begins by unpacking the promise of frictionless infrastructure and how it contradicts the way platforms organise infrastructural labour. It then explores how rather than abolishing friction, platforms - through legal and cultural classification as infrastructural intermediaries - shift the 'friction' they generate onto the worker. As such, racialised surplus populations become site of excess absorption these 'frictionless infrastructures' – paying the physical, emotional and financial cost it takes for platform infrastructures to appear frictionless. By showing the different kinds of cost absorbed by workers, this chapter demonstrates how platforms alter what it means to be in the racialised urban infrastructural workforce. Analysis of 'frictionlessness' as a purported yet impossible goal of contemporary globalisation is not new (Tsing, 2005) – yet, the particularities of what 'frictionlessness' is imagined to be, and how friction is produced and distributed, is re-constituted under platform capitalism.

Defining Friction

Frictionlessness is the gold standard of platform UX design. To designers, friction is "anything that prevents users from intuitively achieving their goals while they interact with a product" (Babich, 2018). Creating a 'frictionless' platform experience, is about engineering a *feeling* of simplicity, and minimising complication: creating "a product that we can use without having to learn anything...interactions are intuitive, and every operation is smooth and natural" (Babich, 2018). It is about "saving customer time, effort and discomfort" - typically, this is done by erasing nuance and managing choice; *anticipating* user needs, minimising "choice overload", and using images and terminology in interface design that resonate with the user's pre-existing frameworks of reference (Okoli, 2018). Steve Krug's pioneering book on UX design neatly summarises this goal as: "don't make me think" (2006). The expectation of frictionless 'experience' that platforms set, and the design choices made to try and produce frictionlessness, shape the social relations that emerge through and around the platform. Interfaces modulate user action - they create "a range of affective, habitual and often un-reflected upon responses" (Ash et al., 2018, p.167). They also create user expectations regarding the interaction being facilitated by the platform, which then shapes user behaviour. Analysing the promises platforms make, how they are communicated through interface design and the kinds of behaviours platforms encourage, limit and punish, therefore conveys what its makers consider 'friction' to be eliminated and/or outsourced.

What are the impacts of applying a 'frictionless' logic to the provision of infrastructural labour? In this framework, what is considered friction or 'glitch'? What is erased or concealed to convey the appearance of frictionlessness? Central to this is anticipatory design - minimising the steps or 'thinking' a user needs to do to achieve their goals. In Uber's case - if you want a taxi, you do not have to find the number of a local minicab firm, hope they are trustworthy, contact them and negotiate with over the phone.

You do not have to plan when you will need a taxi and from where - or risk calling the minicab firm only to be told no cars are available. You do not have to carry more cash than you were quoted on the phone in case the route takes longer than expected. Instead, wherever you are, you can click a button, and a taxi will come to you - the interface tells you where the taxi is, its route towards you, the number of minutes it will take to get to you, the colour and type of car, and its number plate. It also tells you how long your journey will take and, since the introduction of fixed-rate pricing in 2021, how much it will cost – the in-built payment processor takes the money directly from your bank. Similarly with Bubble - you do not have to ask around your networks for a trusted contact, phone each individual and negotiate timings and cost. If your care worker is sick or cannot work, you do not have to go through the process again to replace them. At the tap of a button, you can access a database of workers, marked with ratings that purport to convey reliability and trustworthiness. The interface suggest you can know what *type* of person you are hiring - and if they cannot make it on the day, you can find another worker in thirty minutes. In both cases, central to frictionlessness, is the promise of *knowability* and reliability - that everything (including something as nebulous as 'trust') can be made knowable, because it can be datafied and made computable and visible. Mbembe summarises this promise of knowability underpinning the proliferation of algorithms and big data analysis:

[This] does not only bring with it a greater and greater belief in techno-positivism and modes of statistical thought. It also paves the way for regimes of assessment of the natural world, and modes of prediction that treat life itself as a computable object...the belief today is that everything is *potentially computable and predictable*. In the process, what is rejected is the fact that life itself is an open system, nonlinear and exponentially chaotic.

(2022, n.p)

This dynamic appeals to high-level politicians advocating austerity and VC investors because it promises to create infrastructural systems without investing in fixed capital assets and whilst limiting investment in variable capital to the minimum (e.g., by only paying workers for individual, platform-defined tasks, rather than through a salaried wage). The granularity of datafication platform technologies afford, and the processing of that data into real-time algorithmic management (and future-based predictive analytics) - features in the promise of leanness in an era of austerity urbanism. In turn, the scale of data that can be collected - and the underpinning assumption that the bigger the data set, the better, more 'intelligent' the analytic model - creates expectations of frictionless infrastructural service provision (Crawford, 2021). The 'lightweightness' of platforms appeal to venture capitalists – as the regulatory

evasion endowed by intermediary status is *portrayed* as enabling free movement of capital, skirting the ‘friction’ of geography, regulation and even human bodies.

To consumers, ‘frictionlessness’ looks like predictable, immediate and smooth service provision. As everything can be quantified and known, and is mediated through promises of immediacy, there is no risk of surprise, delay or unforeseen circumstance. This is legible in Uber’s marketing material, which promises “smooth” and “seamless pickup experiences” - a UK-wide advert campaign centred around the prompt: “Be anywhere, effortlessly” (Fig 9.1)¹⁷. The accompanying TV advert - a short film called ‘Effortless night with Uber’ - depicts Uber fluidly facilitating movement around the city. The film follows a heterosexual couple on a first date - the woman arrives in an Uber, meets her date and the camera portrays them moving effortlessly between sites: a nightclub, a fast-food truck, a late-night bar. Transition between each site is signalled by them entering and exiting a car (by implication, an Uber), and the advert ends with them cuddling in the back of an Uber and driving off. Scenes flow together to imply a one-shot take - there is no visual evidence of editing or interruption between shots. Elvis Presley’s *You’re the Boss* rocks steadily on top of the visuals; the swinging rhythm conveys smooth, yet organised direction - a ‘groove’ - whilst the lyrics gesture to the driver’s servility, inculcated by ratings-based management. The promise is of smooth movement, control and flow, absent of interruption, waiting, miscommunication or frustration. The urban spaces being connected by the car feel close to one another - the city is made smaller and more accessible. Uber’s presence provides the infrastructural backdrop for you to ‘be anywhere, effortlessly’.

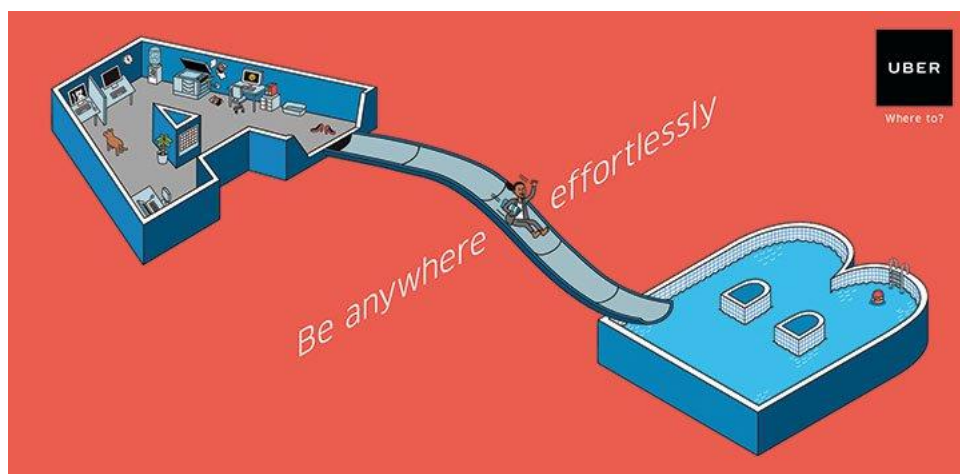


Fig9.1: Sample advert from Uber’s ‘Where to?’ campaign. (Brewer, 2017). Retrieved 3 January 2023.

¹⁷ Sampling note: This was an out-of-home, online, cinema, press and poster campaign, which launched in 5 UK cities including Uber. It ran over the course of six weeks (Deighton, 2017).

Bubble makes a similar pledge of frictionlessness via knowability - albeit in differently staked circumstances. The platform's three-part promise, which appears across its promotional material, is to offer parents 'total control, flexibility and peace of mind'. Again, the language of effortless, certainty, predictability, and immediacy underpins the platform's offering. Bubble takes a process - hiring someone to care for your child - that is mired in risk, contradiction and somewhat fraught intimacy, and situates it within a language of optimisation, and an ecosystem of on-demand consumer services that can be tailored to a client's need and ordered on-demand. As explored in earlier chapters, the interface allows parents to input their needs - from the hours required to their sitter's very *personality* - by selecting from pre-determined categories, or free-writing in the 'sit note' of a job posting. In creating such affordances, the expectation is created that parents can know what *kind* of sitter they are hiring and what they will do without the 'friction' of misunderstanding or in-person negotiation, as such details have already been consolidated by the sitter profile and job form. Trust and interpersonal understanding need not be built over time and through negotiation - it can be datafied and optimised through anticipatory design. The friction Bubble promises to eliminate is the social, cultural and emotional conflicts, misunderstandings, uncertainties and anxieties that have always plagued hired childcare work.

Generating Friction

Despite creating expectations of frictionlessness, the kinds of interactions facilitated by platforms are fraught with risk - of miscommunication, sickness, conflict, discomfort, 'glitch' and even violence. This is particularly true for sensitive interactions like care work, and vulnerable interactions, like getting into someone's car or bringing someone into your car. Indeed, the kinds of infrastructural labour being platformised are what Anderson characterises as 'spatial labour' - i.e., labour that involves boundary crossing:

The production and maintenance of urban social space has always been dependent, to a large degree, on work that involves the crossing of spatial boundaries - particularly between public and private spaces, but also crossing spaces segregated by class, race and gender. Delivery workers, cabdrivers, day labourers, home care providers and similar boundary-crossers all perform spatial work: the work of moving between and connecting spaces physically, experientially, and through representation.

Anderson (2017b, p. 59)

These spatial crossings necessarily carry tension and risk. Much of the 'friction' Bubble promises to eliminate emerges from the racialised and gendered constructions of hired domestic childcare - the forging

of paid-for intimacy across racialised and classed lines, and blurring of boundaries between the public (market) and the private (love). Friction emerges from ambiguity around whether the worker is a worker, or 'part of the family', and how this sits uncomfortably with the racialisation of domestic workers as Other and inferior, *and* with the status/role of mothers within families (Rollins, 1985). Friction is embedded in the contradiction between waged care work being essential, yet devalued through its gendering and racialisation, and the introduction of racialised 'outsiders' into intimate activities in the private sphere through a market exchange (Lan, 2003). Friction also emerges from the contradiction of a system that ideologically situates care work as an expression of love, given outside the market, yet whose political economy compels families of particular class positions to outsource and commodify this labour (Glenn, 1992). Friction not only exists as *conceptual* dissonances around categories like 'work', 'care' and 'love', but as concrete conflicts; ranging from disagreement around *how* a child should be cared for, what tasks fit under 'care' and, the ultimate anxiety surrounding whether you believe your child will be physically and emotionally safe with the person caring for them. Bubble promises to assuage this through its verification and ratings systems, which imply trustworthiness, its classificatory mechanisms that convey 'experience' curation and predictability, and its task selection processes, which confer pre-emptive design.

In turn, the racial histories of taxi driving in London and Britain generally have constituted them as sites of transient boundary crossing - a liminal space between public and private transportation (Toiskallio, 2000). They are spaces of racial encounter, which stage the meeting of people otherwise segregated by class and race. These encounters are marked with an unacknowledged intimacy, as people are transported through and within their daily life, sometimes in vulnerable states. The peculiarity of these conditions: the fear of unsurveilled mobility they afford a racialised population, particularly during the night-time, the spatial and racial boundary crossings they stage and the potential power over the taxi space held by the driver has situated the 'Asian taxi driver' at the centre of seminal, racialised and racialising moral panics (Tufail, 2015). On a more micro scale (compared to the spectacularity of national moral panics) taxis are a space where boundary crossings generate everyday friction. Whilst taxis can be spaces of conversation and politeness across boundaries, these intimate encounters frequently fail, resulting in conflict, abuse, anger, misunderstanding and indifference; friction often articulated in racial and gendered terms (Swanton, 2010). Friction is also generated at the site of the road on which taxis drive - "a particularly charged contact zone" (Swanton, 2010, p.455) where things rarely operate smoothly or predictably; flow is interrupted by traffic, (often racially articulated) road rage, wrong turns, road closures and accidents. Flow is also interrupted by bodies, which fall sick and need to stop for bathroom breaks, food, or to grab a coffee to get through a night-time shift.

Not only is there a gap between expectations platforms set and the kinds of interactions they are mediating - platforms are in fact *increasing* this expectation gap, as they do not simply mediate existing crossings, but multiply them in scale and territorially expand them in unprecedented ways. As the scale and breadth of interactions multiply, so does the risk of friction; traffic increases, workers become exhausted, misunderstanding ensues, and conflict arises in the gap between expectation and reality. Indeed, there is an irony of knowability here: whilst platforms promise frictionless through knowability, the way platforms organise the labour process precludes the possibility for the grounded and deep knowledge workers rely on to avoid, mitigate and manage friction. This is particularly acute for app-based care workers, whereby the platform not only increases the number of families they 'sit' for to make ends meet - it also increases the socio-cultural range of these families. Returning to Andrea and Lucy in the previous chapter, who do not work via platforms: working in the same neighbourhoods for years allowed Andrea and Lucy to develop deep knowledge of the norms and expectations of families in their area; a form of *grounded*, rather than data-driven, anticipatory knowledge.

For Bubble sitters moving between dozens of families across wider territories, it is harder to build such anticipatory knowledge: more of their work is made up of first-time/one-off interactions, which inevitably increases risk of misunderstanding, conflict and unalignment:

Parents rate you down if, for example, you don't discipline their child the way they would. So, if the [sitter] is strict with a child, or uses a certain tone they don't like. Or if they've not followed a routine properly.

Daisy

My previous babysitting has all been family friends and people in my local area. Now I'm navigating [Bubble] jobs - often when I go for a sit, it's the first time I've even been to that part of London... it's been interesting having a wide exposure to different households in London, to see how different people live. A lot of the families are very rich - I've find they are much more permissive than [back home]. So, it's a very tight line with Bubble to walk between a child that is like, spoilt, and if you tell them no, the parent will have a go at you, not the child.

Annie

I find it nerve-wracking, constantly turning up somewhere for the first time when you haven't met the children before. Especially if the parents are going out and you haven't met the children and you're expected to just dive right in from the get-go. Only a few families are good at handover - they'll give you information sheets and everything. But I've had situations where you're literally handed the child, then they go out and you're just like - okay, what am I doing here? It's nerve-wracking constantly not quite knowing what you're going to expect until you get there.

One time I went to a sit where I was expecting to look after a seven-year-old child. I turned up and she was actually 12 - they hadn't updated the profile. It was fine, but you freeze a bit. There were also complications with parking - they hadn't said there was parking issues before I arrived. I had to park in [a supermarket car park] nearby. But, it only had three hours free parking, and the parent was late back. That was stressful because I got a parking fine. When [the parent] came back, I explained to her that she was 45 minutes late, so I would likely get a parking fine. She gave me the money to cover it which is good - I've had to learn to be assertive over the years, because when I was younger I would just say yes and go along with anything. Five years ago, I wouldn't have had the courage to stand up for myself, and I would have left that sit with less money than I started.

I had another situation where the child wanted to go on the iPad the whole time I was there, and the parent told me there was a limit on iPad use. I asked her a few times to come off it, but I didn't know what was ok to do. Other than physically force it off her - I couldn't do much else. When the parents got back, as I was leaving, I could hear them shouting at the child about being on the iPad and I felt really uncomfortable because it's difficult to know how authority you should have - how much you should tell them they can't do something.

Lydia

These ambivalent boundaries are not new to waged domestic work - they emerge from the contradictions and unclear boundary crossings underpinning this labour which are intensified by the expectation, yet impossibility, of frictionlessness promised by care platforms. Families resolve these contradictions differently - some conceptualise the nanny as a childcare expert, deferring to their judgement while the child is in their care. Others have more rigid expectations - some of which are clearly outlined, others not. Families also have different parenting styles - and conflict can arise from unaligned values around food, screen time, discipline and sleep schedules. In turn, children have different needs, and require different behavioural approaches. Typically, alignment on such issues take place over time within a care relationship

- often through negotiation and the resolution of conflict. Yet, these conditions for alignment are precluded by platforms, which are not only centred around maximising new interactions, but encourage an interchangeability/disposability of workers, whereby if conflict arises you are encouraged to simply find a replacement. This precludes the building of grounded anticipatory knowledge through conflict resolution.

Uber also suffers from expectation gap and the preclusion of grounded anticipatory knowledge. Drivers that had previously worked in minicab firms described the difficulties that emerge from the multiplication of interactions and diffusion of spatial crossings conferred by platformisation:

Before apps, there was [better] policy in private companies about dealing with passengers, because most passengers that come to them are known to them. So, when we get a booking from somebody who is not regular, we take precautions. Now, we take all sorts of people, and we don't know who is who.

George

In a minicab firm, the controller gives you the job and you say yes or no. The controller has local area knowledge and prices the job according to expected traffic or any road closures that might be about. If nobody's willing to do the job, he increases the price.

Kai

Before, you would book a cab from your local office and [the workers] had a radio system - you pick up [the operator] on the radio and they give you a job. You worked a certain radius, and if you went out of that, they couldn't get hold of you...it's all local work. But the moment we started seeing technology coming into force, it removed that boundary of working area.

Azlaan

As explored later in this chapter, the conditions George, Kai and Azlaan describe generate friction; conflict arises in the gap between what customers are told will happen (e.g., how long the journey will be), and what *actually* happens. The expectation of knowability, and unpredictability of what happens on the road creates disappointment, annoyance and delay, and falls short of the promise of smooth movement

conveyed by the platform's advertising and interface design. Uber has increased the number of PHVs operating in London, and expanded the geographical boundaries drivers work; more drivers are on the road, navigating routes and geographies they are not familiar with. Instead of relying on grounded anticipatory knowledge, movement relies on GPS technology - yet these technologies fail, generating friction that slows down, frustrates and complicates.

The legal and cultural status of platforms as intermediaries allows them to evade the cost and consequences incurred by the friction generated by interaction multiplication and expectation gap. Friction is not abolished by platforms - it is shifted onto the worker. As such, racialised surplus populations shoulder the burden of making infrastructural networks *appear* frictionless, and absorb the cost when friction is incurred. Yet, platform workers are typically least equipped to absorb these varying costs - their subjection to racialised carve-outs from labour rights and welfare support leaves them with comparatively fewer resources to cope with the risks they are exposed to. Indeed, it is their very racialisation that enables the abstraction of the worker as an embodied, social being - providing the conceptual groundwork for the cost to their mental, physical, emotional and financial wellbeing to be normalised and unrecognised. The following sections describe the types of costs platform workers absorb to give a frictionless appearance, and the way platforms use their intermediary status to shift this cost onto the workers. It also explores the racial politics this dynamic confers - specifically the racialisation of the boundary between human and machine worker.

Emotional Cover

Platforms generate friction by escalating the spatio-temporal scale of infrastructural labour networks. They generate realities that fall short of expectations of frictionlessness they set. To make up for this, workers considerable emotional labour skill to cover for the failure of this promise. In childcare work, this emotional skill includes quickly assessing the behavioural and emotional boundaries of both parent and child, to guess how the parent will want the carer to respond if something goes wrong and presenting in a way that puts the parent at ease; in other words, to repeatedly produce particular emotional states in people they are unfamiliar with (Hochschild, 1983). Childcare work has always involved such 'emotional capital' (Andrew, 2015; Malhotra, 2022), yet the intensification of scale by platforms demands a new level of such skill as it favours many short-term relationships, over a small number of longer-term ones. The quantitative demand of this skill has transformed so significantly, that it can be said to have qualitatively changed; it is reshaping how workers deliver care and heightening the stakes of 'failure'. The already uncertain role nannies have in families - the dissonances emerging from their racialised and classed coding as outsiders and their intimate role as caregivers, are heightened by the multiplication of interactions by platforms.

Annie, a Black-British worker, describes the racialised and classed boundaries she repeatedly traverses on Bubble, the risks these entail and the emotional work she must deploy to manage and meet expectations – to create a conflict-free, ‘smooth’ childcare experience, rather than an embedded care relationship.

You must quickly figure out what people’s personalities are like, and how to deal when emotions are high. Sometimes you are walking into a house and it’s the first time the parent has ever left their child with anyone that wasn’t family. Sometimes you can get highly strung parents, sometimes parents where the child is the apple of their eye. Sometimes the image they have of their child, their house, the way they do things isn’t the same as yours, and I’m not going to do anything that will shatter or challenge that because I’m not there long term....I’m more relaxed with [behaviour] on Bubble than if I’m building a relationship because a big thing with children is follow through - where you say ‘if you do this, this will happen’, and you commit. But if I’m not seeing them again, I’m just thinking: if this child screams or cries, there will be an issue. So, I’m not going to follow through.

Annie

One bad rating literally ruins you - I’m much more cautious around the parents....I’m probably pleasing the child a bit more than I normally would...I let the child get away with more. Like, devices - if they asked for more time, I’d usually say: no, it’s time to get off. But [on Bubble] I’m like ok, you can have ten more minutes....because if a kid says something to the parent - that’s it, they’ll give me a bad rating...It’s hard with the one-off sit ones, because you don’t know how the child will react. You don’t know their behaviours. You don’t know anything - you’ve never seen them before.

Katie

The responsibility of producing a frictionless experience under these conditions is devolved to the worker, rather than created by the platform. Here, the worker’s gut instinct and emotional skill is crucial – it fills the gap between the promise of bespoke, predictable and smooth childcare ‘experience’ and the transient care relationships Bubble *actually* promotes. When gut instinct fails, the consequences are significant. Workers use instinctive knowledge - often accrued over time - to quickly ascertain the needs and desires of child and parent without having the ability to build understanding over time. They also must do this repeatedly:

I live in Kennington, but I do loads of jobs in places like Pimlico, Putney, Chelsea. You can tell how the parents will be depending on where they live - we get a feeling of how they'll be. Like, in Clapham and Putney, the parents are very friendly and generous. Chelsea they can be generous, but they're more like - posh and wealthy and show off a lot.

Maria

Mostly the issue is the parents. The child is often just shy or suspicious because they don't know you, and the child can struggle. But you must be smart and deal with it - you need to know how to approach it and be a professional.

Ariana

It's difficult because every family is so different. I've had so many jobs and it's impossible to always know what they're going to expect. The best way is to ask, but again that comes from experience - knowing what to ask and how. I've done similar things before - like I did [childcare] at a ski place once, where every week you'd have different families and children. You must be really adaptable, learn different needs and routines. I've gotten more confident with that now.

Daisy

Workers struggled to describe how they decide how to approach different families - phrases like 'you just know' and 'it comes with experience' were recurring. However, the centrality of this inarticulable skill became legible when it failed - an inevitability given how platforms organise relations. As Francisca - a 28-year-old Brazilian worker who had been working on Bubble for two years - learned, when this fails, the consequences are devolved onto the worker:

I was taking care of three children, which I've done before. It was hell because they just wouldn't respect me. Whilst I was sorting their lunch they messed up the living room. I did what the parents told me to do for lunch, but they wouldn't eat it and were smearing food on the table. As I was cleaning, they knocked over and broke a vase. I tried everything I had to calm them down, and I just couldn't. At one point I was shaking, and texted the dad to ask for help on how to deal with it because whatever strategy I tried wasn't working. He didn't text me back for ages, and when he did he just asked me to stay for an extra two

hours. Obviously I stayed because I couldn't leave the kids, and I needed the money to pay my rent and food. I grounded them in their rooms for 15 minutes, and they would not stay in their rooms, and one of them peed on the bathroom floor. I was cleaning it up realised I hadn't peed all day. So, I finally went to pee, and while washing my hands, I heard the parents come back.

The mum started screaming at me: "what the hell is going on here!" I kept trying to explain, she wasn't listening...I showed her the text I sent her husband asking for help and she just cut me off. She said she would tell Bubble and that she wouldn't pay me. She got my stuff and asked me to leave.

She emailed Bubble.... I also emailed Bubble because I never got paid. I sent an email with loads of detail. They stayed on the parent's side because a vase broke. They said we cannot do anything for you, and your profile will be de-activated. You'll can do the three sits you've already booked, but you're no longer available on our app.

It was during pandemic, and this was my only income source. I was in a bad situation, barely affording my rent and food...I had a couple of parents I babysit for outside Bubble. I asked them to email Bubble to say I wasn't the person the parents portrayed me as. That I was competent. I showed them the number of families I sat for, the number of recurring sits I had booked. I had a 98% rating - that family had 67%. When families I had sat for contacted Bubble looking for me, Bubble told them I'm no longer part of their group and suggested other babysitters in their area. Those families ended up texting me and so I still worked for them.

Unable to make up her lost income, Francisca returned to Brazil shortly after being deactivated. Like many undocumented women I interviewed, she spent years building her economic life in London around Bubble - building up experience, ratings and metrics in the platform that had consolidated so much power in her sector. Upon being expelled in the pandemic, it became untenable to continue life in Britain without the platform. Francisca's story speaks not only to Bubble's punitive, asymmetrical managerial logic, where customer's word always prevails, it also speaks to the uneven absorption of cost - 'friction' - when emotional skill inevitably fails to cover for the friction-inducing structure of platform care. The dilemma Francisca found herself in is not unprecedented. Caring for three children under five in their home, with whom there is no prior relationship and with little handover from the parent is a huge undertaking - one other workers I spoke to who are less reliant on Bubble may not take on. Children are unpredictable, and often in heightened emotional states when left with a new caregiver - how they respond relies various factors that cannot be predicted or 'known' by data-driven systems. Indeed, non-app childcare workers like Lucy describe the long,

tricky process of gaining a child's trust, respect and understanding - a process Bubble's network-driven design precludes:

One child I looked after didn't like me for ages when I started. Then as I got to know him, I found he really loved this TV show. So, before I'd see him, I'd look up what happened in the latest episode so I could ask him questions about it, and eventually he was like: oh, you're ok!

The 'friction' of Francisca's experience - a broken vase, soiled carpet, agitated children and an overwhelmed worker - is an inherent risk of childcare work, amplified by Bubble's restructuring of the childcare workforce and the expectation gap it creates. Workers cover for this risk, using their emotional skill. Yet, when this fails and risk materialises (somewhat inevitably given the scale of interactions generated) the worker absorbs a cost that is heightened by the power Bubble holds in the sector, and the broader migration precarity these workers are enmeshed in. What would have otherwise been simply a difficult work day, for Francisca resulted in loss of access to an entire sector of income and having to return to Brazil. Within this, Francisca's expendability itself is deployed to communicate frictionlessness - to short-circuit conflict resolution; upon complaining to the platform, parents are swiftly informed the 'problematic' worker has been removed. Here, the source of friction is located *in the worker*, who is situated as external to the platform because of its cultural and legal status as an intermediary. Therefore, the removal of the worker conveys the *image* of return to frictionless operation. As workers carved-out from labour rights, and as undocumented people carved-out of welfare support, those like Francisca are the least able to shoulder the burden of maintaining this model. Yet, an infrastructure of intermediaries situates them to pay the price for its inevitable shortcomings.

For Uber, emotional-work-as-cover is tied to other forms of risk. As explored in earlier chapters, the gendering of brown and Black men as public safety threats, combined with ratings-based algorithmic management systems, demands heightened emotional work in the form of "deferential performance" (McDowell, 2009, p.198). However, there is another form of emotional cover directly connected to the expectation gap between the platform promise of frictionlessness and platform realities: emotional cover for 'glitch'. Drawing on Legacy Russell (2020), Leszczyński (2019) characterises 'glitch' as an "inherent characteristic of digital formations" (p.191):

'Glitch' is a term often used as synonymous with accidental, highly obvious, "dysfunctional event[s]" in digital systems where something is discernibly wrong, having failed to execute as anticipated or completely failed together (Goriunova and Shulgin, 2008; Nunes, 2011: 114; Sundén, 2015). Glitches may

arise where there is an error in code, a “mistranslation in the transmission of data between different domains” (Bucher, 2010, n.p.), or where critical information has been incorrectly classified as erroneous or erratic content in a data signal.

Leszczynski (2019, p.196)

Glitches represent moments of expectation gap; where “platform-urban configurations fall short of their ambitions for capitalist frictionlessness” (Leszczynski, 2019, p.197). They also represent moments where the affordances or intended usage of the platform do not seamlessly align with what a passenger is trying to achieve. Uber drivers encounter these glitches regularly in their day-to-day work:

The technology fails all the time. It's not accurate - it tells the passenger you're going to pick them up in 10 minutes, but you can't get there in 10 minutes because real life traffic is different, so you get there in 12 minutes. The passenger gets frustrated and cancels last minute - and you don't get a cancellation fee because the operator says you're delayed by one minute.

Abdul

The pick-up point system is a complete nightmare. Passengers do things like order an Uber when they're on the train, and the driver can't see their live location. So, you go to the pick-up point, they aren't there and so you call them up, negotiate, try to figure out where they are - it's a nightmare.

Hakim

Within this expectation gap, strong emotions emerge: frozen screens, buffering signals and mistranslated information evoke frustration and anger that drivers absorb and manage. This is especially compounded when customers are in heightened emotional states: if they are rushing and the journey is taking longer than expected, or if they are intoxicated. Uber drivers absorb conflict where the technology fails:

When the customer drinks too much they get angry and demanding asking me to change or divert my route. But I can't take them there without them updating the app - so they'll get agitated and start arguing with me.

Asok

I was once taking a passenger across London, and on the way she asked me to take her back because she forgot something at home. I said you must change it in the app first: she cursed at me, saying "you guys are always like this". What does she mean 'you guys'? She means me as an Asian guy. It's clearly racism.

Ahmed

As Ahmed and Asok demonstrate, the emotional responses provoked by glitch often look like verbal, and frequently racialised, abuse. Drivers regularly de-escalate strong emotional responses to glitch, to communicate the workings of a platform that is failing in its promise and generating friction either through error, or through its need to insert itself as a mediator in every part of an interaction. Drivers with limited English faced difficulty meeting this higher demand of communication. For some, this escalated into physical risk - drivers like Hashim and Omar described passengers hitting their car and banging on their window, because they were delayed finding the passenger due to a glitching map, or because they could not divert the route. Algorithmic management adds another stake to this; the reporting mechanism allows glitch-induced emotions to be expressed through retaliatory behaviours, which have knock-on effects beyond any individual interaction:

I accepted a ride, but when I arrived at the pickup point, the rider wasn't there. I spoke to the rider over the phone to work out where they were, but during the call the ride cancelled. I told the rider the ride cancelled because when the waiting time finishes, the ride cancels itself. I drove down the road and was waiting at a traffic light. These two guys came out of nowhere - one opened my door and shouted, asking me why I cancelled the ride. I explained that I didn't - the app automatically cancelled it. But the passenger thought I charged him a cancellation fee. I was asking him to shut the door because I was at a traffic light, and it wasn't safe - he didn't listen to me. He was so aggressive and misbehaving to me. Finally, I managed to close the door, the traffic light turned green, and I drove off.

I got messages from Uber saying my account was on hold because they got a complaint I had attacked a passenger....I asked them to check CCTV footage in the area, and it will be clear who was wrong and how I was treated....I got an email later saying my agreement had been terminated because I threatened someone.

Imran

Uber did not invent the risk of abuse in taxi driving. However, its re-organisation of this infrastructural labour has not only increased and intensified this risk; it has heightened the stakes of failure and demanded new levels of unrecognised emotional capital. As Imran and Francisca both demonstrate, workers absorb friction in multiple ways: in their bodies, emotional health and in the financial loss of conflict-related deactivation.

Body as Glitch

The reconciliation of frictionlessness as promise and 'glitch' as reality generates various forms of financial cost, which are shifted onto the worker. The promise of frictionless, lean infrastructures relies on a flattened application of algorithmic management. The idea that thousands of workers can be managed cheaply and remotely is central to the promise made to politicians and venture capitalists; the selling point is that algorithms can almost eliminate logistical complexity, and the time and labour costs traditionally associated with managing such a scale of interactions and workers. Yet, as Mbembe (2019a) reminds us, this "belief in techno-positivism" negates the fact "life itself is an open system, nonlinear and exponentially chaotic". Returning to Russell's multi-layered understanding of 'glitch' as an analytic: 'glitch' denotes moments when 'life' in its varying embodied and emotive forms slips out of this computational logic. Writing in the context of queer potentials of cyberfeminism, Russell situates such slippages as moments of transcendent opportunity - they denote "accidental bodies that, in their error, refuse definition and, as such, defy language...fail at forms, throttle the predictability of auto-play" (2020, p.58).

Worker embodiment routinely and necessarily "throttles" the flow of algorithmic management - albeit not to the liberating ends Russell discusses. Benjamin's work on "default discrimination" unpacks how particular bodies are coded out of design process, and therefore surface within these systems as 'glitch' (2019, p.141). These moments reveal the limits to computational capitalism - but not merely as an *optimisation* issue, i.e., an issue resolved by expanding data sets or bias-conscious design. It is a *purpose* issue, embedded in the ideological desire to create 'lean', automated systems of organising infrastructural labour - that prioritises creating *feelings* and *impressions* of smoothness, whilst remaining loyal to a vision that cannot achieve this. In platform labour, the worker absorbs the cost of this *routine* failure - when reality deviates from the promise of frictionlessness. Their racialisation aids and abets this devolution; it carves them out of regulatory frameworks that would otherwise protect from risk shouldering (e.g., through deactivation). It also enables the conceptual abstraction of worker-as-human from this process; this heuristic context, which problematises the relationship between racialised people and the category of 'human',

enables racialised workers to be conceptually folded into the machine. Racialisation as an *affordance* - as the conferring a particular range of treatments, behaviours and processes to which a person can be subject - comes into play here (Arango & Burgos, 2022). The racialisation of platform workers outside of rights-conferring categories like worker, citizen and human, resolves the contradiction central to platform infrastructures - the promise to abolish friction whilst generating friction. This is resolved by the notion that the worker's rightful position is to absorb friction generated without recognition of the harm it creates - and when they can absorb no more, they are removed and replaced. It also grounded in expectations of skill and behaviour that are beyond human capacities; to always get the emotional instinct right, to always be able to de-escalate an emotive situation and - as will be explored - to not have embodied needs. The computational speed regime underpinning platform infrastructures relies on the assumption that the worker operates as a machine, rather than a human; and when human workers inevitably fail to operate like machines, this is read as glitch and workers pay the price.

Take Mohammed's story, which opened this chapter: the failure of his body to complete the task is computed as 'glitch'. He is berated and hustled into returning to productive activity through the production of sensations intended to be intolerable: buzzing, alarms, threatening messages. For others, like Osman, the need to universally apply algorithmic management - to efface nuance in the name of smooth operation - leads to their learning disabilities being read as glitch:

My learning disability means I use different software to communicate via the app. It crashes all the time. When jobs come through, I struggle to process the details. You have four seconds to accept the job - I can't process the information so I just always accept it. I know loads of disabled drivers and they all do the same. When I have problems and need to contact Uber, I get panics attacks because I'm so worried if I do it wrong I'll be blocked and out of a job.

Having a 'glitchy' body - one that glitches or causes glitch - is costly: it "costs capitalism....it degrades productivity within the machine...transforms [it] into a [machine] that cannot perform, that quite literally cannot work, forgets how to work, works against its function" (Russell, 2020, p.84). In platform work, this cost - financial and otherwise - is devolved to workers. For Uber drivers, this devolution and its impact was particularly legible in the case of Iqbal, whose case I undertook as a union caseworker.

Iqbal had been relying on Uber for his main income for six years when he was deactivated after its facial recognition software failed to recognise him. By that point, Iqbal was used to Uber's sporadic requests for 'Real-Time ID Checks', which happen at least once a month. These checks were introduced two years

prior as an 'anti-fraud' and safety technology, to "verify that driver accounts aren't being used by anyone other than the licensed individual who have undergone an Enhanced DBS check" ('Real Time ID Check', 2020). Iqbal had issues with ID checks when they were first introduced - the software misrecognised him and immediately suspended him. He assumed this misrecognition was due to a hairstyle change and weight gain. Since then, he always selects 'human', rather than software, verification - although it is unclear what qualifies as 'human' verification, as the verdict is as instantaneous as software verification. In line with Uber's policy, as he previously failed an ID check, failing for the second time meant permanent suspension.

Facial recognition software is known to be less accurate at recognising racialised faces - particularly darker skinned people (Najibi, 2020). For Iqbal, this was compounded by multiple factors: he had recently lost significant weight from grieving his recently-deceased father and was in the third week of Ramadan fasting. The stress led to severe eczema flare-up on his face, which appears as darkened patches on deeper skin tones (compared to redness on lighter skin). He had recently shaved his hair and beard, in contrast to the profile picture against which the ID checks is compared. Finally, the request came at night-time - it was dark, and the photograph unclear. The facial recognition failure was likely due not only to racial technological bias - but also due to the fundamental misrecognition of the worker as a *person*, with a body that changes and is modified. From the human desire to change hairstyle to his embodied grief (surfacing as weight loss and eczema). This unpredictability of human embodiment is an example of what Mbembe calls the "non-linear, endlessly chaotic" fact of human life. Yet computational capitalism does not afford this to its racialised workforces - it punishes this 'chaos'. In our conversation, Iqbal outlined the story of this glitch, and the costly friction he absorbed as a result:

I was driving and got a few requests. I declined them because I was on my way home. In the middle of sending me those jobs, they wanted to do facial recognition - ok cool. I pull over, did the best with the lights. I clicked it, then it stopped. Just said 'we're checking'. Usually it's done within two minutes - this time, there was no communication for about two weeks. When I try to get into the app it says, 'you need to get in contact with support'. During that process your account is on hold so you can't call them. You make an appointment at the Hub and visit them, which I did after a few days. I went to the Hub, they checked me in, looked at my profile, took a picture of me and said they would contact me within 48 hours. I went to this Hub twice, and I've realised it is purely there for facial recognition failures. The whole day it's full of drivers coming into verify themselves - there were queues out the door. Also, there were no white people there - all Asian, maybe a few Arabs. If you stay there for ages you won't see a white face.

It took a week before anyone got in touch –all they said was I failed verification and I’m permanently banned from the app. The whole time I was emailing them and was ignored. I sent them 30 pictures of myself, showing how different I look in each. I sent a grovelling, long email and the reply was just that it’s not going to change.

My wages have dropped in half. We’ve been cutting down on everything - I’m working more [on Bolt and Ola], but the wages are still really low. My car is on finance - I managed to get a break from payments until October. I got a bounce back loan so I could buy my car instead of renting it, and then a few months later I got blocked. I’m ok for now because of the payment break, but I’ve put my car up for sale.

The financial cost shouldered by Iqbal is multi-layered. As a taskified worker, whose labour is compensated by the minute, the arduous time spent negotiating with Uber to be re-activated takes from time spent earning money through other means - for example, on other platforms. This compromises his ability to keep up with debt payments he had already taken on to subsidise Uber’s lean model - some workers I spoke took on new debt during suspension and deactivation periods, creating new financial burdens. This devolution of financial cost *and* risk to workers allows Uber to promise frictionless integration to politicians and venture capitalists; moments of inevitable glitch, where bodies and materialities throttle the platform’s smooth operation do not incur losses in time or money. The cost and work of repairing glitch is individualised onto the worker. The outcomes are erratic - many workers I spoke to and worked on behalf of never re-activated. Iqbal was one of the few exceptions. After arranging for his local MP to contact Uber, he woke up one day to a notification that he was re-activated. Following a letter from the union demanding compensation for lost income, and threatening to make his case public, he found £5000 deposited into his account from Uber. Neither Iqbal nor I were informed about the process leading to either decision. Others, like David - who was deactivated after a stoppage in his route due to a flat tyre was misread as a car accident - are never reactivated. Compounding this financial shock, is the psychological cost of income loss and indebtedness:

When I was deactivated, I was very depressed. I didn’t know what to do. I have a car I bought that was a high purchase with monthly payments and I couldn’t pay for it. I couldn’t meet my financial obligations for my family, and I fell into a depression. My car was taken away, my livelihood was shattered. I’m not young - I’m over 50. Where am I going to get a job quickly?

David

As Russell (2020) argues, glitch is an *inherent* characteristic of data-driven digital systems, particularly those preoccupied with scale. Worker absorption of financial costs is not due to lack of optimisation – rather, it indicates the limitations of deploying computational logics to mask the “exponentially chaotic”, nonlinear practices of human life. Sometimes, these create breaks - for example, in the deactivation of workers. In other instances, ongoing absorption of financial risk and cost of appearing frictionless is mundane and routine. Bubble, for example, is less inclined to permanently deactivate workers - both because care work is more resistant to interchangeability logic, and because monopolisation is less successful in the care sector. Here, financial absorption is more subtle and granular; it is embedded in a model that allows clients to cancel with short notice in the name of ‘flexibility’, and where workers spend considerable unpaid time creating/updating profiles, messaging parents to build trust and negotiating the terms of each gig. Whilst this has always been part of care work, the expansion of scale, and expectations of immediacy massively expand this unpaid burden:

You have to be always on - always checking the app. Parents often confirm or adjust dates really late at night. Sometimes you don't get the message - it comes through late for some reason. So, you open the app and check manually - sometimes I open the chat and realise my message never sent....and sometimes when you say, decline five jobs consecutively, it'll shut down, and I wait to restart it. Sometimes it just logs me out without telling me. It's like one of those Tamagotchis you had as a child, where it's like an animal you have to keep alive.

Karolina

The parallels Karolina draws between maintaining her position on Bubble and a game of keeping a computerised animal ‘alive’ is salient. The ‘aliveness’ of Bubble in the world of customers - the promise to provide an always available, responsive flow of human labour - is undergirded by hours of worker eyes on screens. It is underwritten by worker hypervigilance - as they must cover for and ‘catch’ glitches that prevent flow; for example, a glitching messaging or notification function. Workers pay with their free labour and lost income when they inevitably fail to catch a glitch in time.

Becoming Machines

Producing the appearance of frictionlessness is not only financially, emotionally and psychologically punishing - it is physically punishing. Maintaining constant availability of on-demand labour requires constantly being ‘on’ - whether this involves driving around the streets waiting for jobs or negotiating with parents via the app. Taskification and low wages also result in labour intensification; workers have to cram

as many ‘tasks’ as possible in a day to maximise income; most workers I spoke to describe working as many hours as physically possible due to the unpredictability of day-to-day income. Platforms govern infrastructural labour by organising racialised surplus populations according to a “computational speed regime”: where, “to be alive, or to remain alive, is increasingly tantamount to being able to move speedily” (Mbembe, 2019a, p.8). Yet, this speed principle routinely confronts bodily limitations - the need to take breaks, drink coffee, eat, use the bathroom. For Bubble workers, trying to keep up with expectations shaped by the rating system leads to burnout, fatigue and even embodied harm:

*I get home and am in shock sometimes because I will work all day and not have time to go to the toilet. Once I had cramps when I got home because I had been holding my bladder so much. Yesterday, I didn't go to the toilet from 9am to 7pm. I had two glasses of water the entire day, and only ate because they bought food and asked me if I want some. Otherwise, I wouldn't get a break - they'd ask me to fold clothes, clean the kitchen *and* look after the child. Obviously I had to because I didn't want to be rated down.*

Yara

The star rating is what makes this different: it pressures people to be more than they are, which will lead to burnout and fatigue. That's not healthy for anybody, particularly the children being looked after by burned out or fatigued care workers.

Martha

For Uber drivers, the need to constantly drive to be in the right place at the right time and take on as many tasks as possible incentivises the suppression of bodily needs; drivers described foregoing meals and relying on coffee to make it through shifts. They described urinating in bottles between jobs to avoid the cost of stopping (both in lost working time and paying for parking). This erasure of embodiment is enmeshed in the urban planning. As explored in Chapter Six, apart from the AVA car park, there are no spaces in London where Uber drivers can attend their bodily needs; they are denied access to ‘rest and refreshment’ ranks reserved for Black cabs, and cannot park without paying to use cafe and restaurants bathrooms:

Black cabs have taxi ranks. They can park by a train station, use the toilet. If I need the toilet, I must pay a £6 parking ticket. There's nowhere I can stop, sit, have a drink. No public toilets. I notice drivers peeing on the street, in bushes which is not fair on them. When you go to the petrol station or cafe, they don't let you - they say it's only for customers, so you just go to the bushes.

Mohamed

We work in the most advanced city and there is no toilet we can use. You go into restaurants, they take one look at us and go: 'no Uber'. If I find a restaurant that says ok, I risk a £60 parking fine. There is no rest. I go home unable to sleep because I don't know if I can make ends meet the next day - or if I'm going to get a fine in the post.

Gezim

The conditions Mohamed and Gezim describe demonstrate a racialised distribution of the bodily impact of maintaining a city with on-demand transport. The pushing of the body to comply with the platform's speed regime - of completing as many 'tasks' as possible - creates unrecognised, unaccounted for bodily harm. Uber drivers must constantly drive to remain active and 'findable' by customers (unlike Black cabs who can wait for work in one of the 6000 taxi ranks operating throughout the city). This is compounded by the incentives systems, which encourage drivers to accept as many jobs as possible in a row without taking a break in exchange for lower commission:

The [challenges] to make you do 100 jobs in 7 days. You can't do that - you would have to work like a donkey. Forget going to the toilet, forget food.

Hakim

Several drivers I spoke to developed repetitive strain injury (RSI) from driving around in London traffic, and constantly moving their foot on and off the pedal. Many others described having chronic back and neck pain from sitting down for hours without taking movement breaks. Amir, who developed RSI after driving Uber for four years, considered long-term Uber driving incompatible with the limits of the human body:

What drivers don't know when they get into this work, is there are a maximum number of hours and miles that you can do this for - that your body can take. After that, nobody in the company cares...If I can't turn up to work there's many others that will, they don't care who is who.

As Amir describes it, when Uber confronts the limits of the human body, it exchanges that body for another one; and absolves itself of responsibility for maintaining that body when it is sick or when it can no longer perform the work (i.e., through sick pay and pensions). Workers shoulder this burden in their body and finances - many fall behind on debt repayments during periods of exhaustion or illness. This logic of disembodiment and disposability is in keeping with the broader racialised logic that disciplines platform workers to behave *like machines*. Within this, bodily functions throttle frictionless flow; workers must perform as machines to keep up. This fantasy of workers-as-machines is not new; the Taylorist organizational principle of scientific management was rooted in a mechanistic understanding of the worker, criticised at the time for lacking 'the human factor' (Derksen, 2014); with individual worker behaviour instead being "seen as a collection of individual bodily movements" (Benjafield, 2005, p.138). For some workers, the shift towards a human relations approach and the granting of humanising rights like pensions and sick pay grew in response to such criticisms – albeit whether this was truly 'humanising' is contested (Derksen, 2014). Yet for others, this mechanistic approach has not only not subsided – the ability to punish workers for *not* being machine-like has intensified through the granular surveillance capacities of algorithmic management.

Both the promise of frictionless and flexibility relies on the capacity of workers to behave like machines: to absorb constant financial, physical, emotional and mental shock without appearing degraded or harmed as a human would - the various harms caused by this absorption of friction is institutionally unrecognised. This sits within a long legacy of racialised workers being imagined as machine-like; at different historical moments, racialised workers have been likened to "faceless hordes of working machines", whose machine-like work ethic, and "naturally lower standards" undercuts the wages and conditions of white workers (Bonacich et al., 2008, p.348). As explored in the previous chapter, this is bound up in racial histories of objectification; in the reduction of racialised workers to the mechanics of their body through the mind/body dualism, and the racialisation of skilled/unskilled labour. If a racialised worker is reducible to the mechanics of their body, their body can always be replaced by another that can mimic these materialities. This is despite, as this chapter shows, the centrality of human and emotional capital built over time in covering for glitch and subsidising the fiction of platform frictionlessness. This sense of being folded into the materiality of the machine - the racialised blurring of boundaries between human and machine worker - was recurring across Uber and Bubble interviews:

People can sit on their app and get people to drive them around. When they come inside the car, most passengers don't even look at you, or want to talk to you...it's high time they respect the presence of human beings in their app....People forget it is a human being collecting you from wherever you are, in whatever condition you are in. You may be drunk, and somebody - a human being - comes to your rescue, for what? Peanuts. And they take you to your door - lots of us don't just walk away from you. We make sure we see you get in your house ok. That's humanity. That's a human action which people don't understand.

Muhammad

I remember one time this woman got angry at me for being too sick to come in. People sometimes forget we're not robots - we can get sick.

Francisca

The impact of having childcare as a gig economy, and how it makes people see workers - it dehumanises the work. People treat you like an object, as you don't have connection to the person you work with. It changes how people look after childcare workers. They're just a person who comes here, you have no connection to them, and they must be available all the time. Just one click and this person comes to look after my child....with the whole review things, you have to literally be like a machine.

Silvia

In conclusion, platformisation has altered what it means to be part of the racialised underclasses comprising infrastructural workforces. Platforms facilitate the devolution of financial, emotional and physical cost of maintaining frictionless, flexible infrastructures to workers - without any formal means of recognising these costs. In doing so, they rely on and perpetuate the racialised blurring of boundaries between machine and human workers; they discipline the worker towards behaving like interchangeable, disembodied machines, and punish the moments in which these demands confront human limitations. Platforms not only systematise financial, psychological and embodied harm against workers - they preclude the formal recognition of such harms, conferring the unrecognition of platform workers as humans. Instead, platforms mediate the proximity of their workers to the racialised and racialising dynamics of expulsion. In

these ways, platforms both shape and are shaped by a racial fix - one where certain populations are mediated out of rights-conferring categories, and into non-human entities like machines and robots. Platforms also participate in broader racial fixes, where certain populations are erased from processes of restitution and harm recognition - including exclusion from standard employment and citizenship. The promise of platforms to provide frictionless and flexible infrastructures therefore involves a double-ing down of the processes that racialise some populations out of the human condition.

CONCLUSION

This concluding chapter reflects on research interventions, findings and process, and suggests future research scope. It begins by summarising the distinct scholarly contributions to research communities grappling with key concepts: platforms, technology, race, labour and urban infrastructure. It then summarises findings by chapter, as they respond to original research questions. Finally, I turn to the *process* of conducting this study: reflecting on its theoretical and methodological limitations, and briefly indicating an agenda for future research.

Racial Platform Capitalism: Contributions

This thesis began with interest in racialised people and their labour - how they make and are made by the city. With platforms becoming an increasingly central actor in this dynamic, my attention quickly turned to a blossoming platform capitalism literature, which contextualised the emergence of platform labour within a variety of converging processes. Such processes ranged from neoliberal (de)regulation (Dubal, 2017; Ferreri & Sanyal, 2018), the growing power of finance capital (Srnicsek, 2017; van Doorn, 2019, 2021), the expansion of telecommunications infrastructures (Plantin et al., 2016; Shaw & Graham, 2017); 'smart city' techno-imaginaries (Kitchin, 2014; Sadowski & Bandor, 2019), austerity urbanism (Pollio, 2016) and economic dispossession by financial crisis and unemployment (Rosenblat, 2018).

This thesis carved a new path to this scholarly roadmap: the social differentiation of work and workers (and, as it turned out, what is considered 'non-work' and 'non-workers'). Here, the racialisation processes that denote some people and their labour as, in *essence*, different and *exceptional* to norms applied to 'regular' work and workers, was identified as a crucial resource underpinning platform capitalism. In doing so, it drew from the racial capitalism scholarship, which renders legible the relationship between racialisation and class composition from a broadly Marxist orientation - an orientation that conceptualises socio-cultural power as co-constitutive of material power. It relied on Stuart Hall's concept of social formations in *articulation* with other modes of production (including economic) (1996, 1997). It contextualised the insights of existing platform labour scholarship on regulatory evasion and exception within a broader, racial history of organised abandonment (Wilson Gilmore, 2007) - i.e. the converging cultural, state and capital processes that produce disposable 'edge' populations (Bhattacharyya, 2017; Hall, 2021). It grounded these processes in the specific history of racial capitalism in Britain, as outlined by labour sociologists like Virdee (2006, 2014) and Anderson (2001, 2014a) and labour geographers like McDowell (2008, 2009, 2013) - identifying the particular ways platforms meet racialised labour histories in my site of

study. In doing so, this thesis proposed platform capitalism as not only a technological, legal and infrastructural innovation, but an innovation of racial capitalism itself; a system that reproduces itself by hierarchising labour-power and engendering disposability through differentiation processes socially enacted as 'race'. Whilst racialisation takes centre stage in this scholarship, I employed an intersectional approach to racial capitalism, as outlined by scholars like Bhattacharyya (2017), McDowell (2009), Glenn (1992, 2010) and Strauss (2019), understanding race to be always made through and alongside other social differentiating mechanisms - including gender, dis/ability, sexuality and age.

Yet, this thesis went beyond identifying how 'actually existing platformisation' (van Doorn et al., 2021) is shaped by racial politics - it also argued that platformisation is changing racialised social relations in the city by (re-)animating the *infrastructural* role racialised surplus populations play in cities. Drawing on expansive theories of infrastructure outlined by Gidwani (2015), Hall (2020), Stokes & De Coss-Corzo (2023), and Simone (2004), it identified platformisation as specifically intervening in a racialised history of *infrastructural labour* - of labour-as-infrastructure - creating new expectations and cultures of labour within this paradigm. Platforms change how we expect urban infrastructures to function, and therefore what we expect from those who do infrastructural labour. As a result, the racialised surplus populations being recruited to do this work have become marked by newly intensified expectations of servility, disposability and dehumanisation - mediated by the materiality of algorithmic management and the urban socio-technical imaginaries platforms are part of. This material built on a nascent scholarship charted by Mbembe (2017, 2019a, 2022), Benjamin (2019), Wang (2018), McMillan Cottom (2020) and Chun (2009, 2021), theorising the changing role and legibility of racialisation in the age of computational, algorithmic capitalism.

This thesis therefore contributed to existing knowledge in three ways: 1) To the platform labour literature, it took passing observations that platform workforces are disproportionately made up of racialised migrants and situated this as a central analytic category of the platform economy's emergence in urban contexts. 2) To the racial capitalism literature, it provided a way of considering how social differentiation processes operate differently through data-driven systems and in non-US contexts. 3) To the platform urbanism literature, it contributed an analysis of how platforms (re)shape how racialised surplus populations move through and produce urban space. In doing so, it provided a labour-centred approach, grounded in racial capitalism, to understanding the "platformisation of infrastructure" and "infrastructuralisation of platforms" (Plantín et al., 2016, p.295).

This thesis has both *contributed* to geography and made *geographic* contributions to the racial and platform capitalism literatures. There has been an uptick in geographic interest in platforms *and* race, but

from different parts of the discipline. Scholars of platform urbanism - a subfield of digital geography (Ash et al., 2016) - counter platform capitalist 'spatial flattening' claims, arguing corporate platforms both *require* particular spatial configurations, and produce new spaces and mobilities (Artioli, 2018; Ferreri & Sanyal, 2018; Lesczynski, 2020; Sadowski, 2020b; Stehlin et al., 2020). Platforms *require* the population density, economic polarisation and pre-existing infrastructure (including mobile technologies) of major 'global' cities - and how these appear at each site varies. Simultaneously, platforms produce new spatial formations, infrastructural organisation and governance practices in their territories of operation. This geographic agenda was consolidated in a recent special issue of *Urban Transformations*, edited by Caprotti et al. (2022). In turn, there has been a consolidation of Black Geography and geographies of race as a sub-field, theorising the co-constitution of racial difference and spatial difference. Geographers like Ruth Wilson Gilmore, Adam Elliot-Cooper, Laura Pulido and Claire Alexander - and scholars not explicitly in geography, but whose work is deeply geographic (Hall, 1998; Bhattacharyya, 2018; Hall, 2021) - have made important contributions to racial capitalism scholarship. Countering claims of race as having pre-existing or fixed characteristics, geographers of race theorise the varying ways racial difference is made and articulated through site-specific locations - unpacking how racialisation changes appearance, meaning and legibility accordingly. Here, the production of sites like the body, laboratory, prison, plantation, border, colony and metropole have been intimately tied to the production of racial difference (Zeiderman, n.d.).

Racial platform capitalism compels a meeting of both geographic inquiries. This project, through the case study of London, has demonstrated how the particularities of the post-2008 city - austerity urbanism, racialised distribution of economic dispossession, intensifying border controls and anti-immigration rhetoric, the War on Terror and a polarising urban economy - have shaped the production of platform capitalism at this site; thereby theorising racial platform capitalism *from a particular standpoint* of its emergence. In employing a geographic approach, this thesis has urged against a scholarly internalisation of the flattening claims platforms make. Platforms must not be conceptualised as a top-down formation exported, undisturbed, from Silicon Valley; they demand a conjunctural analysis that contextualises and connects the range of grounded processes, places, moments and phenomena that lead platforms to unfold in the ways they do. In turn, the tendency of the most 'successful' platforms towards global monopoly, creates interconnected geographies of platform capitalism - whereby the techniques developed at one site may shape platform deployment at another. In turn, this thesis has compelled geographers of race to consider an under-theorised, yet increasingly important site through which racial difference is emerging: the platform, both as a socio-technical imaginary and a mode of production.

Findings

This section will use chapter summaries to outline the findings to each research question, starting with RQ1:

1. How is the platformisation of urban infrastructural work in London shaped by and shaping processes of social differentiation?

a. What processes of racialisation, gendering and bordering are shaping the makeup of platform childcare and taxi workforces in London?

Chapters 4 and 5 situated Uber and Bubble as legacies of racialised, gendered and bordered carve-outs of particular workers from the purportedly universal standard employment relationship in metropolitan cities. Chapter 4 traced the disproportionate representation of racialised men, especially Pakistani and Bangladeshi men, in the Uber workforce to the historic, structural role this group have played as surplus populations in Britain. It drew a lineage from their post-colonial inclusion in the declining, but still powerful post-war textile factories of Northern England, to their post-deindustrialisation abandonment into self-employed, part-time and freelance work (including taxi work), to their post-2008 GFC survival turn to platform work. The labour histories and experiences of the Uber drivers interviewed demonstrated this systemic inclusion and exclusion from post-war labour norms according to economic crisis cycles. In turn, the fact these workforces are experiencing racialised exclusions from regular labour markets and Hostile Environment-driven exclusions from welfare states, is co-constituting the platform labour form. Finally, the chapter used ethnographic interviews and discourse/visual analysis of platform media/marketing materials to show how the rubric of the 'techno-fix' mobilises a legacy of co-constitution between masculinity and entrepreneurship. It showed that despite driver awareness that algorithmic management renders precarity, the embodied *feeling* of self-governance - made possible by *remote* management - recovers an affective possibility of self-governance and self-reliance otherwise lost in deeply hierarchical parts of the labour market open to them. Internalising this, Uber promotes its racial practice of worker (mis)classification with entrepreneurial language.

Chapter 5 used ethnographic interviews to 'map' three pathways into Bubble work, demonstrating the carve-outs - via racialisation, bordering and gendering - that make each pathway possible. It showed how the prominence of undocumented Brazilian women on the platform is produced by the racialised carve-out of Global South migrants from most regularised migration routes. It also argued post-GFC racialised exclusions from regular labour markets have tracked racialised migrants with settled status (as CESEE citizens or Latin Americans with ancestral EU passports) into Bubble work. Finally, it outlined differences in

how white citizens and racialised people work on the app - with racialised workers more likely to rely on Bubble as a main income stream, creating platform dependency. Running through all pathways to Bubble, is the gendered carve-out of domestic work from labour regulations, through the spatial extraction of the 'home' from normative conceptions of 'workplace' as a site of public regulation. It then showed, using Bubble's marketing/media material, how Bubble refracts the racial division of reproductive labour configured by these global care chains, arguing that rather than discursively rendering their workers 'entrepreneurs', Bubble situates platform workers as facilitators of *other* women's professional identities (including as entrepreneurs) - thereby drawing on histories of racialised access to normative womanhood.

b. How do these social differentiation processes shape the norms, experiences and conditions of platformisation in these sectors?

Chapters 6 and 7 respond to RQ1b, by showing how algorithmic management interacts with racialisation processes to engender servility - 'on-demandedness' - as an expectation, norm and condition of platform labour. Chapter 5 demonstrated how servility is extracted from Uber drivers by a convergence of media, state and firm-led practices, which code them, culturally and computationally, in a carceral logic. It used discourse/visual analysis of press to show how Uber drivers are racialised as brown through security and terror-related moral panics. It used casework ethnography, interstitial space ethnography and interviews to show how firm and state practices interact with this racialisation to create a punitive governance structure and experience of platform work - engendering a carceral logic in labour management systems whereby workers cannot appeal to legal rights frameworks, so instead must appeal to general character assessments of 'guilt' and 'innocence'. Using further ethnographic interviews, it demonstrated how drivers are coerced by these conditions into performing servility and docility, to overcompensate for the racialised precarity in which they are enmeshed.

Chapter 7 historicised the role of racialised servility in waged domestic work, deployed to resolve socio-cultural and legal contradictions surrounding the commodification of intimate labour. It then showed how Bubble, through strategic (in)formalisation, retains the informality and hierarchy that engenders servile relations, whilst appearing to formalise parts of the labour process that place domestic workers under scrutiny - namely, processes of review and probation. In conjunction with the platform's promise of 'total control' to parents, workers are compelled - by expectation and lack of recourse - to perform servility. Yet, this servility is not extracted via direct domination, but through implication and self-commodification; workers sell *themselves* as servile workers, whose caregiving is 'natural' and therefore need not be subject to contractual limitations or norms.

c. How are platforms changing the relationship of racialised migrant workers to urban space?

Chapters 8 and 9 responded to RQ1c, arguing that platforms organise racialised surplus populations into social and urban infrastructural gaps of austerity urbanism as *flexible* and *frictionless* infrastructural labour. The integration of platform workers into the city as flexible and frictionless infrastructural labour compels their production as dehumanised and disposable - processes articulated through and alongside racialisation. Chapter 8 examined the 'flexibility' promise, showing how under austerity urbanism, platforms captured segments of urban infrastructure through the real-time, agile marshalling of cheap workers into gaps as they appear. Instead of investing in public transport infrastructure, for example, platforms organise existing vehicles and driving labour into just-in-time and just-in-place services. It showed how the flexibility promise is articulated via visual/discourse analysis of media/marketing materials for Bubble and Uber. It then used ethnographic interviews of workers, and app ethnography of both platforms to show how the flexibility promise is undergirded by the coded and contextual disposability of platform workers as racialised people. Platform interface design cultivates the sense of indefinite numbers of workers, in line to replace one another at moment's notice. In turn, by gatekeeping access to historically racialised, precarious work, platforms are able to exercise the logistical power of sectoral expulsion; the proximity to expulsion itself being a marker and consequence of racialisation.

Chapter 9 explored the 'frictionless' side of the platform infrastructure promise. It began using discourse/visual analysis of media/marketing material from Bubble and Uber, to show how both platforms promise 'frictionless' infrastructural service provision: defined by ultra-convenience, speed and control, and tied to the socio-technical imaginary of 'predictive' algorithmic technology. Yet, as ethnographic worker interviews demonstrate, platforms exacerbate friction through scale intensification; as interactions increase in number, but not in quality or depth, the risk of conflict and misunderstanding expands. Through their intermediary status, platforms devolve the emotional, financial and physical cost of excess friction to workers, who become the friction absorbers of glitchy platforms infrastructures. In doing so, platforms create expectations of workers as having inhuman 'machine-like' tolerances, emotional responses and physical limitations.

2. What methods are appropriate for conducting workplace ethnographies in the platform economy?

a. What challenges does platform work pose to traditional workplace ethnography?

b. How do existing platform work ethnographies engage with these challenges?

Chapter 2 responded to RQ2a and RQ2b. It began by outlining the case for workplace ethnography to make legible 'practice aspects' of what are rapid transformations of work under platformisation. However, it identified the challenges platforms pose to archetypal workplace ethnography, which developed through the experience of primarily white male workers, operating under the standard employment relationship (SER) in the Global North. Cohesive units of analysis tied to this kind of work - like working time, worker status, and workplace - are disrupted by platform work. Particular hallmarks of the method therefore - like embeddedness in a fixed workplace - are not possible in a form of work racialised out of the SER, posing conceptual and logistical challenges. It then conducted an evaluative review of 12 platform work ethnographies, identifying three existing scholarly responses to these challenges: online forum ethnography, ride-along/'flash' ethnography and auto-ethnography. It found each method to shed rich light on different parts of the labour process - yet relied on methodological norms that did not adequately register the holistic, fragmented spatio-temporal locations of platform work.

c. How can workplace ethnography be reconceptualised given these challenges?

Chapter 3 responded to RQ2c. It proposed a shift in conceptualising labour ethnographies away from 'workplace' ethnography and towards a 'world-of-work ethnography'. This involves mapping the labour process as it exists at multiple spatial and temporal locations, and putting the findings from each into context with one another, creating a sense of the holistic whole. In doing so, scholars avoid internalising contested platform definitions of *what* work is, *when* and *where* it takes place - i.e., that 'work' is not only definable by the tasks, time periods and places in which workers are paid by the platform. It demonstrated this through a review of this project's methodological strategies and sites, defined by six practices: design ethnography of the app, interstitial space ethnography, online forum ethnography, casework ethnography, ride-alongs and media/marketing materials. It evaluated how each site and practice grapples with the spatio-temporal and conceptual ambiguities around when, how and where platform work takes place.

Reflexivity and Ethics

This project would not have been possible without trade unions. Lead organisers at the NSN and the UPHD (later ADCU) were my first port of call when trying to understand the landscape. They directed me to interstitial spaces, forums and provided me access to casework ethnography. Whilst more than half of interviewees were not union members, my starting point was the emerging ecosystem of grassroots

labour unions representing platform workers. In exchange, I offered time and skills - providing communications support, support to members, consulting on policy. My shared political commitment with these unions is clear: that workers should have ultimate power over their working conditions. This commitment is not separate from my research, which is rooted in a justice-oriented geographic tradition (Harvey, 1973; Rodney, 2012; Wilson Gilmore, 2008, 2022) - it is the spark. This position, in which political inclinations are reflexively integrated into research, counters traditional ethnographic approaches that idealise dispassionate observation (Reger, 2001). This is influenced by a feminist epistemology, which argues against concepts of 'rigour' that claim Cartesian separation between emotion and reason, subjectivity and objectivity (Acker et al., 1991; Stacey, 2001). However, it also comes from a broader reckoning within social science, which acknowledges researcher subjectivity shapes data collection and analysis (Bourdieu, 1963); that *all* knowledge is situated knowledge.

This is not archetypal scholar-activism, as whilst I conducted union support work, I did not consider myself an activist in the union, and my research was not *about* unions. I believe unions are a particular political form, where only workers in the represented sector should be active members. Academics and allies can support, but should not participate in political structures, nor exercise pressure/power over political process. This is especially true given asymmetry of material and social power between platform workers and academics (Smeltzer, 2012) - whilst the conditions of early career researchers are increasingly resembling the precarity and 'taskification' of platforms, the chance of future material security remains higher than for the average platform worker (Gebrial & Beddington, 2022). However, I entered the field with explicit political support for platform worker power, and my project shed light on the racialised element of labour concerns unions were raising - a positionality that falls under scholar-activism broadly defined (Collins, 2005; George, 2005). This became tricky halfway through the project, as a union I had been working through split acrimoniously, and the previously unified union 'voice', fragmented and polarised. It became trickier to parse out my role, as working with both became increasingly untenable. I stuck to the position that it is politically inappropriate for me to intervene, express public opinion or exert pressure in internal union conflict - regardless of where my personal convictions lie - particularly as I had interviewed rank-and-file members across both factions. This attracted deep disappointment amongst some members - I experienced the ethical dilemma many scholar-activists experience (Lichterman, 1998), where research does not always align with group expectations (in this case, two groups with different expectations). Some felt betrayed, and I understood that feeling. They had given me their time and knowledge - and they expected something from me I believed I could not ethically give, given my duty to all rank-and-file workers I interviewed.

I reflected on the 'scholar' of scholar-activism. In my methodological planning, my ethical priority was the 'activism', ensuring my research design was minimally extractive, and offered workers something politically and materially for their time and expertise; I supported union communications, shared union protests on social media, and paid workers for interviews (Gillan & Pickerill, 2012). There is political value in scholars producing useful knowledge for union movements - and theorising from the position of union struggle; scholars can certainly share the vision of activist-participants. Yet, there is a methodological difference between scholarship and activism, as summarised by Wilson Gilmore (2007, p.27):

"In scholarly research, answers are only as good as the further questions they provoke, while for activists, answers are as good as the tactics they make possible. Where scholarship and activism overlap is in the area of how to make decisions about what comes next."

Whether the ultimate *priority* is to develop *tactics* or further *questions*, although interconnected, is the boundary between scholar and activist. Both ask questions, but, particularly in active struggle, activists necessarily prioritise tactics. The ultimate role of scholars is to wrangle with contradiction - for the activist, it is to resolve contradiction into action. This requires humility from scholar-activists around what they can achieve and promise politically - *particularly* when not primarily staked in the movement (although all workers are indirectly staked in one another's movements). I felt dissonance and discomfort - remaining 'neutral' in activist settings was uncharacteristic of me, particularly when directly asked. This emotional response indicates something: my 'activist' commitment felt violated. I was in the space as a scholar, and therefore could not behave as an activist. Yet, this clarified something obvious, but often forgotten in overly optimistic accounts of scholar-activism: research alone does not win power. Organising does.

Limitations and Future Study

This project explored a specific part of the intersection between racial and platform capitalism: labour. On-the-ground workers were my only interviewees, as I was studying how legacies of racial hierarchy were being deployed and transformed in the lived reality of platform labour. Yet, there are many other sites in which this intersection is legible. Missing from this study is a reckoning with Silicon Valley tech entrepreneurship and design as a racialised and gendered formation, whose claims to whiteness and 'post-racialism' shapes the deployment of platform power (Noble & Roberts, 2019). The ability of platforms to mobilise a 'non-ideological' *technical* solution to crisis, to evade conventional regulations and scrutiny emerges not only from ideas of what technology is, but of *who* creates what is then called technology. As Irani (2018, n.p.) argues, technology as a *social* category has always "excluded the creative practices deprioritised by industrial-era capitalists and European colonial powers"; claims to scientific objectivity,

techno-solutionism and rationalism are bound up with ideas of who is considered able to create technological ideas and innovation. Interviewing and studying the materials of designers and tech entrepreneurs is a necessary corollary to this project's findings on how race shapes the values encoded in platform technologies. Neglecting this risks reproducing the very racial dynamics this project critiques, which situates whiteness as a deracialised space, and 'race' as only relevant when studying downwardly racialised people. Folding this into future research is essential to fully engaging racial platform capitalism. Furthermore, this project deals exclusively with worker self-perception - further study should triangulate its findings to make more rigorous claims about how precarity is unevenly distributed through social divisions of labour: this could include a quantitative analysis of how digitised processes affect workers of different identities.

As the introduction outlines, this project did not produce a meta-theory of platform capitalism - or even racial platform capitalism. Rather, it introduced concepts of social differentiation to the platform capitalism literature and provided scholars with a framework through which the oft-observed relationship between the composition of the platform workforce and its emerging norms can be engaged theoretically. Here, socio-cultural ideas about who does what are considered economically productive - they create the conditions for value production, and therefore the (re)production of capitalism in its varying iterations. The foregrounded differentiation process here is that which is legible as racialisation (within a British context) which will not be seamlessly transferable to others. In turn, whilst an intersectional approach to the 'racial' moniker is employed, a study with a different differentiation mechanism (for example, gender) as its starting point would yield different, equally crucial insights. Such a project may, for example, explore how platform capitalism is sustained by gendered social reproductive work *beyond* the gig (van Doorn & Shapiro, 2023). Furthermore, the social differentiation processes (including race) that facilitate platform exploitation will be articulated differently across (and even within) spatio-temporal locations, for study on their own terms - riffing off Zeiderman, racial hierarchies of labour must be understood through their "persistence" but also "their perpetual instability" (2020, p.455). At its core, in proposing racial platform capitalism as a *practice* that exploits and remakes social hierarchy, this intervention seeks to provoke further study of how this practice is deployed across spatio-temporal contexts. It is therefore not to provide *the* map of racial platform capitalism: but *one* amongst many yet to be made.

APPENDICES

APPENDIX 1: UBER INTERVIEWEE DEMOGRAPHICS¹⁸

| Name | Ethnic/racial identity | Age | Occupational History | Site of interview/observation |
|-------------|-------------------------------|------------|-----------------------------|--------------------------------------|
| Louis | Irish | 52 | IT | Online |
| Hashim | Pakistan | 46 | Minicab | AVA |
| Adomas | Lithuania | 29 | Sales/Marketing | AVA |
| John | England | 46 | Sales/Marketing | AVA |
| Aijaz | Bangladesh | 27 | Restaurant worker | AVA |
| Chinua | Ethiopia | 33 | Courier | AVA |
| Halimo | Somalia | 55 | Courier | AVA |
| Mahad | Pakistan | 39 | Minicab | AVA |
| Abdi | Somalia | 45 | Minicab | AVA |
| Dheeraj | Bangladesh | 29 | Restaurant worker | AVA |
| Mahbeer | Pakistan | 47 | Minicab | AVA |
| Antonio | Italian | 37 | Window cleaner | AVA |
| Muhammad | Pakistan | 54 | Hospitality | AVA |
| Ibrahim | Somalia | 53 | Bus driver | AVA |
| Adroa | Uganda | 52 | Civil service | AVA |
| Bogdan | Romania | 33 | Construction | AVA |
| Anthony | St Lucia | 36 | IT | AVA |
| Mehmet | Turkey-British | 39 | Bus driver | AVA |
| Abbas | Pakistan | 56 | Minicab | Casework |
| Bilal | Pakistan | 33 | IT | Casework |
| Ali | Pakistan | 27 | Courier | Casework |
| Kai | Chinese-British | 30 | Minicab, restaurant worker | AVA |
| Aboulaye | Black | 34 | n/a | Survey |
| Adedayo | Black | 44 | n/a | Casework |
| Hassan | Pakistan | 60 | n/a | Casework |
| Viktor | Bulgaria | 35 | n/a | Casework |

¹⁸ N/A refers to where this information was not recorded. This occasionally did not happen for a variety of reasons - for example, running out of time, or if the driver did not want to discuss their previous work.

| | | | | |
|-----------|-------------------|-----|---------------------------|-----------------|
| Fadumo | Somalia | 63 | Minicab | Casework |
| Alexandru | Romania | 36 | n/a | Casework |
| Imran | Pakistan | 55 | n/a | Casework |
| Hussein | Pakistani | n/a | n/a | Casework |
| Omar | Somalia | n/a | Paramedic | Casework |
| David | Nigerian | n/a | Minicab | Casework |
| Osman | Somalia | n/a | n/a | Casework |
| Hassan | Pakistan | n/a | n/a | Casework |
| Kabir | Pakistan | 63 | n/a | Ride along - |
| Asok | Bangladesh | 60 | Minicab driver | Ride along |
| Abdul | Asian-British | 30 | Retail, care home | Casework |
| Iqbal | Asian-British | 35 | Hospital administrator | Casework |
| Ahmed | Iranian | 37 | n/a | Casework |
| Mohamed | Pakistani | 35 | n/a | Casework |
| Amazu | Nigerian | 43 | n/a | Casework |
| Andrei | Romanian | 37 | n/a | Casework |
| Hamdaan | Pakistan | 28 | Security guard/McDonald's | AVA |
| Gezim | Albania | 35 | Chauffeur | AVA |
| Hakim | Algeria | 65 | Concierge | AVA |
| Abdullah | Afghanistan | n/a | Self-employed | AVA |
| Amir | Indian | 48 | n/a | Union gathering |
| Azlaan | Pakistani-British | 43 | Minicab | Union gathering |

APPENDIX 2: BUBBLE INTERVIEWEE DEMOGRAPHICS

| Name | Ethnic/Racial Identity | Age | Previous Occupation(s) |
|-------------|-------------------------------|------------|--|
| Lucy | Australia | 25 | University Student |
| Silvia | Brazil | 24 | Office Assistant |
| Yara | Brazil | 23 | University Student |
| Lina | Brazil | 29 | Au Pair |
| Julia | Britain | 26 | University Student |
| Katie | Britain | 21 | Creche |
| Carmen | Argentina | 20 | University Student/Au Pair |
| Claire | Britain | 48 | Professional nanny |
| Frankie | Australia | 22 | Au Pair |
| Fernanda | Brazilian | 31 | Full time nanny |
| Annie | Britain | 19 | University Student |
| Martha | Britain | 41 | Full time nanny |
| Francisca | Brazilian | 28 | University Student and PA |
| Daisy | Britain | 28 | Social worker |
| Lydia | Britain | 27 | Full time nanny |
| Ana | Brazil | 35 | Full time nanny, medical researcher |
| Ariana | Italian | 37 | Primary school worker |
| Tina | Chinese-British | 22 | University student |
| Karolina | Czech Republic | 22 | Au Pair, student, hospitality |
| Maria | Brazil | n/a | University student |
| Talana | Brazil | 30 | University student |
| Antonía | Brazil | 30 | Au Pair, pharmacy student (in Brazil), café |
| Clara | Brazil | 27 | University student |
| Gabriela | Brazil | 31 | University student |
| Louise | British | 42 | Nanny |

APPENDIX 3: LIST OF SURVEYED ETHNOGRAPHIES

| Bibliographic Information | Methodological Strategies Employed |
|--|---|
| Rosenblat, A. (2018). <i>Uberland: How Algorithms are Rewriting the Rules of Work</i> . University of California Press. | Ride-alongs; Online forum ethnography; Recruited semi-structured interviews ¹⁹ |
| Surie, A. & Koduganti, J. (2016). The Emerging Nature of Work in Platform Economy Companies in Bengaluru, India: The Case of Uber and Ola Cab Drivers. <i>E-Journal of International and Comparative Labour Studies</i> , 5(3) | Ride-alongs |
| Mateescu, A., Rosenblat, A. & Ticona, J. (2018). Beyond Disruption: How Tech Shapes Labour Across Domestic Work & Ridehailing. <i>Data & Society</i> . | Ride-alongs; Online forum ethnography; Recruited semi-structured interviews |
| Bloodworth, J. (2018). <i>Hired: Six Months Undercover in Low-Wage Britain</i> . Atlantic Books. | Auto-ethnography |
| Anderson, D. (2014). "Not just a taxi?" For-profit ridesharing, driver strategies, and VMT. <i>Transportation</i> , 41(5), 1-21. | Ride-alongs |
| Dabbish, L. Kusbit, D. Lee, M.K., & Metsky, E. (2015). Working with machines: The impact of algorithmic and data-driven management on human workers. Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems. ACM Conference on Human Factors in Computing Systems, Seoul. | Online forum ethnography; Recruited semi-structured interviews |
| Harrison, A., Mennecke, B., & Misradikov, A. (2016). Tales from the Wheel: An IT-Fuelled Ride as an Uber Driver, 18, 1-10. | Auto-ethnography; Recruited semi-structured interviews |
| Brown, B. McGregor, M., & Glöss, M. (2016). Designing for Labour: Uber and the On-Demand Mobile Workforce. CHI Conference, California. | Ride-alongs; Recruited semi-structured interviews |
| Rosenblat, A., & Stark, L. (2016). Algorithmic labour and information asymmetries: A case study of Uber Drivers. <i>International Journal of Communication</i> , 10(27), 3758-3784 | Online forum ethnography; Recruited semi-structured interviews |
| Chandler, C., & Malin, B.J. (2016). Free to work anxiously: Splintering Precarity Among Drivers for Uber and Lyft. <i>Communication, Culture and Critique</i> 10(2), 382-400. | Online forum ethnography; Recruited semi-structured interviews |
| Mateescu, A., & Ticona, J. (2018). Trusted strangers: Care work platforms' cultural entrepreneurship in the on-demand economy. <i>New Media & Society</i> , 20(11), 4384-4404. | Recruited semi-structured interviews |

¹⁹ 'Recruited semi-structured interviews' refers to interviews that were arranged to take place separately from ethnographic observation (although were typically recruited via participant-observation).

APPENDIX 4: BREAKDOWN OF DOMESTIC CHILDCARE ROLES BY LEGAL STATUS AND JOB SPECIFICATION²⁰

| Role Name | Job Specification | Ofsted Registration |
|------------------|---|----------------------------|
| Childminder | <p>Professional day carer who provides care in their own home for more than two hours per day.</p> <p>Can only take care of a maximum of six children under the age of 8 at the same time</p> | Compulsory |
| Nanny | <p>Generally, cares for children from one family at any given time, unless working under a nanny share agreement, in which case they look after children from a maximum of two different families at the same time.</p> <p>Can be live-in or live-out.</p> <p>Can further specialize as maternity nurses and/or night nannies, who provide post-natal support for parent and newborn.</p> | Optional |
| Babysitter | <p>Provides childcare on an ad hoc basis, typically for a few hours during the evenings whilst children are asleep.</p> <p>Unlike nannies, babysitters are not expected to support the child's broader reproductive and educational needs, like help with homework, food preparation and bathing.</p> | Optional |
| Au Pair | <p>Lives with the family they work for and are provided a private room and main meals in exchange for around 30 hours of light housework, childcare, and evening babysitting per week.</p> <p>Remunerated with 'pocket money' rather than a wage.</p> <p>Prior to Brexit, arrangement was classified as a 'cultural exchange'.</p> | No |

²⁰ Information sourced from "Types of Childcare" (2015), Ofsted (2018) and "Childcare Options" (2019)

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