Race & Mobility in the Digital Periphery:
New Urban Frontiers of Migration Control

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This thesis is submitted for the degree of Doctor of Philosophy

Declaration

This thesis is the result of my own work and includes nothing which is the outcome of work done in collaboration except as declared in the preface and specified in the text.

It is not substantially the same as any work that has already been submitted before for any degree or other qualification except as declared in the preface and specified in the text.

It does not exceed the prescribed word limit for the Politics and International Studies Degree Committee.

M.S. Mahmoudi
Copenhagen
14 December 2020

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Abstract

Global movement and information technologies are changing practices of bordering, globally. Such matters are now also substantially urban. As cities of refuge rely increasingly on tech companies to develop digital urban infrastructures for accessing information, services, and socioeconomic life at large, they are also inviting the border closer to cities and migrant bodies. This marks a convergence of Silicon Valley logics, austere and xenophobic migration management practices, and racial capitalism. In New York City, infrastructural technologies such as sophisticated public Wi-Fi, smart ID cards, and digitalised city services, in an environment prone to deportation raids, has led to deep information "panics". In Berlin, a combination of civil society and private sector technology initiatives have produced a deluge of largely unused or distrusted information services, job-matching, house-sharing, social credit, and identity management tools in the name of refugees. In lieu of mitigating conditions of displacement, these practices compound analogue borders by engaging in a practice of digitally fusing borders to racialised characteristics, resulting in symbolic, material, and epistemic forms of technological marginalization.

Through following and documenting how migrant communities navigate and experience these digital urban interventions, and the logics of those who develop them, this dissertation 1) highlights how migrant bodies and urban spaces become contested spaces in the battle for racial capital – a frontier in which technology actors are chiefly concerned with reconstituting conceptions of race for power and profit, and; 2). unveils how digital urban infrastructures interact with subtle practices of racialised bordering.

Drawing on an analytical lens rooted predominantly in the Black radical tradition, critical development and migration studies, and science and technology studies, it challenges the paradigms of techno-solutionism and techno-chauvinism, as well as critical digital studies that has tended to treat race and racialism as a symptom of, rather than as integral to, the technology industry. By extension, the field of migration has also tended to impart greater weight to the positive affordances of technology in contexts of displacement, in absence of the critical voice of would-be recipients and "users". By attending to the frontiers of racial capitalism and increasing technology deployments, I advance the idea of the 'digital periphery' to make sense of how urban migrant environments and subjectivities are commodified and 'datafied'. As a concept, the digital periphery allows for the rapid advance of technology upon displaced populations to be disaggregated. It reveals an inseparable and mutually constitutive entanglement of race, borders, and migration, advancing racial capitalism beyond its conventional physical and spatial limitations.

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This dissertation is the culmination of a series of intellectual curiosities, personal struggles, and most of all, an imperative to intervene in developments that stand to harm communities of whom I am a product. Migrant communities, far and wide, communities of colours, in particular fugitives from oppressive regimes who yet again face surveillance, exploitation and marginalisation, nowadays at the hands of an ever-powerful technology industry. Communities of audacity, whose political imagination is a threat against a depraved status quo. This work is dedicated to them – in particular, migrant communities delivered unto the violence and racial gag order of Fortress Europe, and the state-sanctioned long deaths commissioned by the United States. In the spirit of Jo Cox MP – the namesake of my PhD studentship – who was killed on June 16th, 2016 by a far-right activist for her advocacy on behalf of refugees in Europe, I have sought to uncover the everyday structures and practices that generate vulnerability, precarity and exploitation, with this work.

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As a child of a generation of political activists who fled the Iranian regime to start from scratch under conditions unfamiliar, alienating and – at times – oppressive, I dedicate this work most strongly to my family. My father, a former maths teacher, who fought against a murderous regime and escaped execution, worked several odd jobs and retrained in Denmark to provide, for my brother and I, a different future. My mother, a midwife during the Iran-Iraq war, who started over in Denmark at a time when women of colour were especially subject to significant prejudice and job market discrimination. Despite the severity of their struggles, they imparted, on my brother and I, an urgency in pursuing paths of justice, and intellectual curiosities unfettered by our socioeconomic conditions in the first half of our lives. To my brother, a rock transcendental of geographic bounds – for the humour, encouragement, and sense of wonder with which he has carried himself, and myself when needed, in heavy and light times. To my biological grandmothers in Iran, may they rest in power, who kept me connected with my heritage, and my adopted Danish grandparents, who helped raise my brother and I, and grounded us in our confusing cultural hybridity. I fail to imagine a world in which my brother and I's admission to higher education, let alone postgraduate degrees at prestigious universities in the UK, would be at all possible without the strong presence, guidance, and unquestioning and unwavering support of our family.

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Acronyms

BAMF	Bundesamt für Migration und Flüchtlinge
CIA	Central Intelligence Agency
CIE	Centros de Internamiento de Extranjeros
CRDS	Critical Race and Digital Studies
CSR	Corporate Social Responsibility
DOS	U.S. Department of State
EC	European Commission
EU	European Union
GFF	Gesellschaft für Freiheitsrechte
HPD	New York City Department of Housing, Preservation & Development
ICE	U.S. Immigration Customs Enforcement
ICTs	Information Communication Technologies
ICT4D	Informational Communication Technologies for Development
ICoTs	Informational Control Technologies
IOM	International Organization for Migration
MOIA	Mayor's Office for Immigrant Affairs
RFID	Radio Frequency Identification
R&P	Resettlement and Placement
UNHCR	United Nations High Commisioner for Refugees
USCRI	United States Committee for Refugees and Immigrants

Chapter 1 | Introduction

'They pretend they're just doing market saturation but then they fucking depend on government contracts! Like we're back in the 90s… your neoliberal bullshit doesn't confuse me.'

An organizer with Mijente,[1] a political home from Latinx and Chicanx people who seek racial, economic, gender and climate justice, is telling me how the organisation discovered that the horrifying regime of deportation raids and family separations advanced by U.S. Immigration Customs Enforcement (ICE) had been powered by Silicon Valley companies. At the time of our conversation, they had just launched their #NoTechForICE campaign,[2] on the back of a tell-all report documenting how household companies like Microsoft and Amazon were the technological engines powering ICE (Mijente et al). More insidiously, companies like Palantir Technologies, a Peter Thiel and Alex Karp venture made infamous by their initial CIA seed investment (Slisco 2020), have been providing software that directly aided in ICE's targeting and detention of undocumented communities.

'Yes! No one got arrested!', my informant exclaims at an incoming text with indignation. They are referring to a protest by their fellow organisers had erected a chain-linked fence around the Palantir offices that day – a reference to the egregiously barren detention centres, and the deadly border-wall, to which the company was in effect condemning marginalised migrants. For Mijente, and many other advocacy groups concerned with immigrants' rights, in particular, companies like Microsoft, Amazon, and Palantir are the future of incarceration. Broadly, this marks a monumental shift in the course of migration governance. While movement remains a lethal endeavour for some, it is also a source of significant profiteering for others. As 'Fortress Europe' took shape, so the biometric and digital surveillance industries also grew. And when ICE aggressively reinforced its programme of raids and egregious forms of detention and family separation, it was powered by Silicon Valley corporations, who provided the technology for tracking, case management and algorithmic decision-making.

1.1. Race, Border and Migrant Entanglements in the Digital Age

Global movement and information technologies are changing practices of bordering, globally. Such matters are now also substantially urban. Refugees, asylees and undocumented immigrants alike have

[1] Mijente: https://mijente.net/our-dna/
[2] No Tech for ICE: https://notechforice.com/

historically relied on the city to live in anonymity and proximity to familial and diaspora networks (McKenzie 2016; Muggah 2017). However, as cities of refuge rely increasingly on aforementioned and adjacent tech companies to develop digital urban infrastructures for accessing information, services, and socioeconomic life at large, they are also – inadvertently or not – inviting the border closer to cities and migrant bodies. This marks a convergence of Silicon Valley logics, austere and xenophobic migration management practices, and racial capitalism (Georgiou 2019; Mbembe 2019; Robinson 1983; Achiume 2020). As actors involved in the regulation of movement, and therefore migrant lives, technology companies are closing in on the final frontiers of fugitivity, to datafy and commodify it. Drawing on an analytical lens rooted predominantly in the Black radical tradition, critical development and migration studies, and science and technology studies, in this dissertation I challenge and complicate the dominant celebratory traditions of techno-solutionism and techno-chauvinism, which has tended to ascribe positive affordances to technology deployment in the absence of the critical voices of so-called "users" and those directly affected.

This moment of particular human movement, the so-called "refugee crisis", is not unique simply due to scale, but due to how refuge is datafied throughout migrant journeys and beyond resettlement. Smartphones and digital infrastructures are increasingly used to navigate refuge (what Latonero and Kift have called the 'digital passage'), to help in orientation, and to access social, legal, and medical services. However, while purportedly helping refugees connect with jobs and housing, technologists have also contributed innovations towards their surveillance. For instance, biometric technologies are used to register asylees and extend access to credit and use remote sensing satellite imagery is used to monitor migration at and beyond Europe's shores. This is undergirded by the past decades' 'technoliberalism' – what Atanasoski and Vora refer to as 'the political alibi of present-day racial capitalism' (2019). It masks, for marginalized mobile populations, in particular, the mutually constitutive relationship between race, borders, and migration, and how technology 'reinvigorates and reworks colonial relationships of dependency' (Madianou 2019). Today, refuge is datafied and transcendent of the borders drawn around conventional colonial geographies. Increasingly, the same processes by which displaced populations are assessed, afforded access and information, and surveilled between borders, now exist within borders, states and within cities as well.

In recent years, rapidly digitalising cities, some with explicit "smart city" agendas, have developed digital strategies directly or indirectly aimed at the integration of migrant populations. Cities and local authorities have responded to the presence of immigrant communities by deploying digital technology interventions, purportedly to mitigate access to crucial information and services. New York City is one such example, where the Mayor's Office for Immigrant Affairs has a direct

approach to providing a digital strategy (translation services, immigration services, connectivity, identification). In an environment prone to deportation raids, infrastructural technologies such as sophisticated public Wi-Fi (notably LinkNYC), smart ID cards, and digitalized city services, have led to deep information panic among refugees, asylees, and undocumented immigrants alike. Berlin is another such city, though its strategy has been more indirect and rooted in a combination of civil society and private sector initiatives. The over 10 million refugees who have fled the Syrian crisis since 2011 (Collier and Betts 2017) have provided especially ample opportunity for technologists seeking to test and develop tools for access to work, housing, and credible identities. Civil society and private sector initiatives target refugees for these services, and scholarship has, until recently, tended to treat the affordance of the "smart city" for refugee "integration" positively (e.g. see Meghan Benton's 2014 report for the Migration Policy Institute). However, an important question remains: to what extent do these developments reflect existing racialized integration narratives, and the construction of an urban-entrepreneurial refugee "periphery"?

While these tools may appear to be "effective" in challenging red tape surrounding housing, employment, identification, and information, they also risk siphoning vulnerable populations into further precarity. By creating conditions wherein life in refuge is rendered hyper-visible, these interventions compromise the safety of targeted populations. Digital tools that provide either incomplete or purposefully partial information to provide orientation services risk containing populations in peripheral space or keeping them in perpetual precarious motion. Digital tools can also compound job insecurity, by valorising the gig-economy and the myth of the "refugee entrepreneur." These are just a few of the threats to migrant populations in particular, for whom the emergence of the digital city is inextricable from the emergence of a digital urban border. As populations who do not possess the same level of protection as citizens (Achiume 2020), displaced communities are at risk of being used as experimental sites in pursuit of racial capital (Mirzoeff 2020).

As we begin to understand these technologies to be constructive of borders, it becomes clear that these interventions – be they apps, biometric technologies, algorithmic decision-making or artificial intelligence – do not end with the product itself. The fetishization of digital tools and information communication technologies for development (ICT4D), enables the automation of exclusion. Several scholars have described this fetishisation: Broussard (2019) refers to it as "techno-chauvinism" (the insistence that technology is better than the human) and Morozov (2013) as "techno-solutionism" (the idea that there is a technological solution to the most complex societal problems). Far from a recent phenomenon, the use of technical language and numbers to advance an illusion of control is a long-standing feature of colonial conduct (e.g. Appadurai's "colonial imaginaire").

Through the "empowerment" and "democratization" connotations of ICTs, technology deployments in the context of the so-called refugee crisis repackage this colonial imperative for today's liberal imaginaries (Hindman 2009). The role of racial capitalism in informing such logics of digital access and representation cannot be understated. Cities have become experimental sites where populations are digitally enclosed, and where life is often subject to exploitation by tech actors.

Throughout this work, I rely on the categories of "refugee" and "migrant" in a descriptive, rather than legalistic, sense to describe the ways in which humans are driven to fugitivity from the violent, repressive and planetary consequences of racial capitalism, including political persecution, climate change, hunger and impoverishment. By disengaging from its more mainstream legalistic framing, I seek to emphasise the absurdity of maintaining categories wound up in socio-legal logics of racial capitalism. I conceive of refuge in this way to re-politicise what is institutionally treated as an apolitical misfortune that Western nations, and in particular Western institutions, engage with as benevolent, generous saviours. There is, understandably, a dearth of trust in institutions, mechanisms, and technologies that purport an ethos of liberalism and saviourism, while being inescapably complicit in the death of over 40,000 refugees and migrants[3] in Europe (United Against Refugee Deaths 2020). In the United States, between 2014 and 2019 alone, nearly 2,000 individuals died along the US-Mexico border (IOM), while 210 individuals have lost their lives in the custody of US Immigration Customs Enforcement[4] (ICE 2018; Shoichet 2020). Global flows of human movement are animated by these numbers, which show that not all movement flows equally. Communities fleeing dire circumstances of various kinds are required to pay with their movement; at the same time, their movement is relied upon by aforementioned industries for profit (what Todd Miller has called the Border Industrial Complex) (Miller 2019).

The extent to which new technologies have been built on the back of "subaltern" suffering has been omitted until recently. As late as November 2020, the UN Special Rapporteur on contemporary forms of racism, racial discrimination, xenophobia and related intolerance, released her report on race, borders and digital technologies, urgently noting that:

> '[…] the resurgence of ethnonationalist populism globally has had serious xenophobic and racially discriminatory consequences for refugees, migrants and stateless persons […] digital technologies are being deployed to advance the xenophobic and racially discriminatory ideologies that have become so prevalent, in part due to widespread perceptions of refugees and migrants as per se threats to national security' (Achiume 2020: 3)

[3] Between 1993-2019. This number reflects known and documented cases. The actual number is likely much larger.
[4] Since 2003

Achiume's report underscores the task at hand: the need for a thorough interrogation of the extent to which these initiatives exclude, adversely include, or empower displaced communities. Are they even used by the intended communities? If not, why do they endure? These developments hint at an emergent consensus between technology actors and cities to share in the management of migrant life and survival in the city.

My interest in these developments is predominantly motivated by two lines of inquiry: first, how such technological interventions are seen as a way of bypassing the politics of migration and integration (meanwhile deferring power to but a few large tech corporations), and secondly, how inequities and discrimination resulting from these interventions have been defined as technical questions, with mounting voices calling for greater representation along the supply chain of engineers and technologists in general. Partnerships spearheaded by technology giants in service of humanitarian and international organisations, in particular, backed by massive philanthropic institutions, have experimented with interventions ranging from digital blockchain-based identity systems to algorithmic resettlement schemes. Yet, these very actors have turned around and provided the same technological infrastructures that they are using to purportedly enable mobility in one place, to facilitate the detention, deportation and separation of families in another, e.g. the US (Frenkel 2018). Following these motivations, this dissertation expands our conventional understanding of the border to encompass the urban, where new forms of digitally-mediated enclosure are utilised under the auspices of migration control, and to the effect of justifying the experimentation and development of technology products on the back of vulnerable displaced communities. I argue that race, border and migrant entanglements have intensified in the digital age, with urban-entrepreneurial initiatives, in particular, giving way to new modes of value extraction and containment of marginalised bodies.

1.2. Research Questions

In this dissertation, I grapple with how conventional notions of migration governance and the border are changing through digital urban technologies. The recent "refugee crisis" and its responses are global phenomena crucially 'interconnected with rhythms of planetary urbanization' (Schmid and Brenner in Gandy 2011). Despite this, most scholarly work on the intersections between borders, race and digital technologies have centred around the physical border, are predominantly focused on biometric ID systems, and are situated within critical security and border studies (Broeders & Hampshire 2013, Amoore 2006 and 2009, Balzacq 2007, Broeders 2007, Dijstelbloem 2011, Muller

2010, Vaughan-Williams 2010, Dunleavy 2006, Prins et al. 2011). This literature has been chiefly concerned with border security and migrant interception, often taking refugees camps or borders as the sites of analysis (Latonero et al. 2019; UNHCR 2016). Sociologists and geographers, particularly from the emergent tradition that can broadly be labelled as 'critical geographies of migration' (Gilmartin and Kuusisto-Arponen 2019), have interrogated the manifestations, expressions and experiences of the border beyond its physical demarcation (Mbembe 2019; Vaughan-Williams & Pisant 2018; De Genova 2016; Salter 2012; Paasi 2012; Bauder 2011). Yet little attention has been paid to how digital technologies (such as those available on our smartphones or in urban environments), and in particular, digital urban infrastructures, interface with similar and extended forms of bordering, with implications for vulnerable migrant populations. The argument I advance is threefold: practices of digital bordering follow a long tradition of racially underpinned enclosure, containment and value extraction; practices of digital bordering go beyond material borders, and seep into the realm of the mundane, the everyday; and, practices of digital bordering are *not* unintended externalities or ethically rectifiable processes, but colonialities of power. Taking these arguments together, the contribution of my dissertation is to reveal how alterity, and race, in particular, are constituted, innovated, and weaponised in service of racial capitalism.

Taking a point of departure in rapidly digitalising migrant-receiving cities, I examine the following primary research question: *How are urban migrant environments and subjectivities 'datafied' and commodified under technology-augmented racial capitalism?* Through ethnographic case studies, this dissertation documents encounters of self-identifying immigrant communities with digital urban technologies initiatives developed in their names and advances grounded and critical insight into conventionally aggrandized interventions. Drawing on an analytical lens rooted predominantly in the Black radical tradition, critical development and migration studies, and Science and Technology Studies (STS), I contribute to critical and emergent debates on migration technologies. I introduce and develop the concept of *the digital periphery* to demonstrate how practices key to the development of racial capitalism, namely 'categorisation' and 'containment', work together on peripheral subjects to form enclosures for value extraction. Through ethnographic case studies in New York City and Berlin, I trace how the digital periphery allows for the hegemonic hierarchy of knowledge producer vs. subject to be maintained, by enabling tech actors to claim ownership over how displaced populations seek information, work, find housing, et cetera.

The digital periphery operates in three major ways, namely through techno-development, techno-space, and techno-government, which can be thought of, by analogy, as three distinct vignettes of bordering. The digital periphery operates techno-developmentally*;* that is, it operates through the

instrumentalisation of modernisation tropes by tech actors, inherited from a long tradition of mediated representation of the needy subject in humanitarianism and development (Mutua 2009; De Laat in Bennett 2016). In this way, it carries forwards existing colonialities of power (Quijano 2000), through control of subjectivity and knowledge. Techno-spatially, I show how “digital infrastructures” (Georgiou 2019) layer physical infrastructure with symbolic space, which in turn has consequences for the material re-ordering of both (Lefebvre 2011). The digital periphery matters in spatial terms, due to how its subjects are conditioned for persistent precarity through surveillance and contained in physical and virtual space for continued tech deployments – – in service of racial capital. Finally, the digital periphery matters techno-governmentally. Governments and institutions rely on technology actors and their digital urban interventions, symbiotically, to identify, exploit and control immigrant communities. Easterling has shown that this symbiotic exercise of governance is possible because urban space is often a site of ‘multiple, overlapping, or *nested* forms of sovereignty, where domestic and transnational jurisdictions collide’ (2014: 54). This follows an urban tradition of governments providing corporations with ‘[...] a cocktail of enticements and legal exemptions that are sometimes mixed together with domestic civil laws’ e.g. in free ports and export processing zones (Ibid). Such provisions have historically come at the expense of migrant labourers, by eg. prohibiting strikes, lowering minimum wages, et cetera. The digital periphery is similarly afflicted, allowing for liberties to be granted to technology corporations in exchange for enabling and sharing in governance.

While debates on migration technologies are predominantly housed within critical border and migration studies, critical race & digital studies (CRDS) is home to the most incisive critical contributions to our understanding of race and technology (Benjamin 2019; Nelson 2016; Noble 2018; Brock 2020; Mcilwain 2019; Richardson 2020; Nkonde 2020). This dissertation’s contribution to the literature is two-fold: 1) it contributes to CRDS through its migration lens, demonstrating the centrality of migration and the management of mobilities to digital manifestations of racial capitalism; 2) it contributes to critical migration studies, through its CRDS orientation, demonstrating how practices of bordering, migrant surveillance and exploitation play out through technology production.

In a moment when sanctuary cities are once more becoming relevant spaces for organising, against the backdrop of rising anti-immigrant sentiment, the research question at the core of this dissertation helps unveil how digital urban infrastructures interact with the practices of racialised bordering. Rooted in a methodological approach that foregrounds the epistemological standpoint of communities subjected to these systems, this dissertation highlights how migrant bodies become contested spaces in the battle for racial capital. They become frontiers in which technology actors are chiefly concerned with reconstituting conceptions of race (often in service of governments and

institutions), and in so doing, moving the needle of permissibility in acts of experimentation, exploitation and violence. This dissertation, in other words, sketches how urban processes are intertwined with constellations of global human movement and the imperative to govern and profit from it.

As such, it is also important to note that conventional – and especially, legalistic – understandings of what constitutes a "refugee" vs. a "migrant" are insufficient and inappropriate, in tackling the subject matter. Instead, this Hobson's choice elucidates the centrality of Cedric Robinson's 'racial regime' to capitalism; a mystification or construction which enables profiteering by the border industrial complex (Miller 2019). The institutions undergirding the border industrial complex turn certain moving populations into "refugees" and "migrants", and other interstitial categories such as "irregular" and "undocumented". However, as Robinson teaches us, those fleeing racial regimes are fugitives (Robinson in Johnson and Lubin 2017); the insistence on framing their fugitivity in institutionally permissible terms, in our case "refugees" or "irregular migrants", is a 'reformulat[ion] so that it could capture all these fugitives' (Ibid). I, therefore, draw on this understanding of fugitivity, to give broader scope to the populations included in my analysis, beyond strictly delineated categories. At the height of the so-called refugee "crisis", a 2016 UNHCR report stated:

> 'The digital revolution is transforming the world but refugees are being left behind […] A lack of connectivity constrains the capacity of refugee communities to organise and *empower themselves, cutting off the path to self-relianc*e.' (UNHCR 2016: 8).

And thus, the world's premier refugee rights' organisation had rubberstamped the alignment between the tech sector and the refugee rights. While it is undoubtedly true that there are a great many benefits of digital technologies to displaced communities (as shall be explored to some extent), the UNHCR framing all but confirmed that the plight of refugees is rooted in a technical problem, as opposed to a political one. This bolstered the companies involved in the border industrial complex and legitimised technological interventions in all aspects of the lives of displaced communities. Some have referred to the process by which 'many specific aspects of human life [including] the grid of judgment and direction that we call "governance"' are appropriated as "data colonialism"', in particular, because it enables an externally-driven 'appropriation of data on terms that are partly or wholly beyond the control of the person to whom the data relates' (Couldry and Mejias 2019: 5).

1.3. Methodology

The epistemological basis of this dissertation is in a critical interpretivist approach to knowledge production, with the intention to understand the social realities experienced by research participants on their own terms. To carry out empathic and contextually appropriate research, I took a qualitative approach to my work, specifically deploying a multi-sited mini-ethnographic case study design, driven by participant observation (Fusch et al. 2017). I found participant observation as a method to be the most appropriate for understanding 'the nature of the sociocultural system that emerge as migrants move,' or, as I shall argue, are kept 'between places' (Olwig 2003: 788). As I seek to observe systems of meaning, I invoke the critical orientation of the ethnographic tradition. I worked in active solidarity with my participants in uncovering and getting 'beneath the surface of oppressive structural relationships' (Harvey in Mathers and Novelli 2008). In other words, the predicaments under the purview of this dissertation are understood to 'function to serve particular interests' (Schwandt 2007), underpinned by the ideology and system of racial capitalism (May 1997; Robinson 1983). This invocation of critical ethnography enabled me to study mundane everyday digital infrastructures that have relevance to aspects of urban life among displaced communities in New York City and Berlin, in order to develop a better understanding of how social exclusion is experienced and contested. This blended design approach allowed me to engage in predominantly short-medium term "bursts" of fieldwork, during which a variety of both longer-term participant observation (4-5 months in each site, documenting everyday interactions, conversations and observations using field notes), and short-term engagements, such as one-off interviews, workshops and other events, informed my research.

I spent the months of August 2018 through January 2019 in New York City, where I was embedded within CAMBA in Flatbush Brooklyn – a resettlement and economic development organisation with a particular focus on immigrant communities. At CAMBA, I assisted caseworkers in providing support services, including resettlement and workforce development support, while researching available housing options amidst a deepening crisis of space in the city. I was primarily tasked with setting up a centralised resource for alternative — including community-based and informal — forms of housing, to aid CAMBA in making the case for continuing their provision of Resettlement and Placement and advancing their goal of achieving 'self-sufficiency within first 6 months' for refugees. CAMBA was interested in potential technology solutions for this. Through the prism of this objective, I came to encounter the depths of hostile immigration practices in New York City, and how they were digitally enforced (what I have subsequently referred to as the *digital anti-sanctuary*). Through my everyday engagements with CAMBA, 30 semi-structured interviews across

six additional immigrants' rights organisations (Human Rights First, Brooklyn Defender Services, International Rescue Committee, RIF, RDJ Shelter, RUSA LGBT, and the Darfur Peoples' Association of New York), technologists (including with the Google sister company Intersection, and Good Call NYC) and the Mayor's Office for Immigrant Affairs, I repeatedly came up against anxieties, among refugees, asylees and undocumented immigrant communities, related to information sharing, surveillance, and retrieval — what I've referred to collectively as *information panics.*

I was based in Berlin between February and June 2019, where I divided my time across two organisations, namely Refugio and the Berlin chapter of Techfugees. I became a volunteer with Refugio, which is a collective built in the image of "South African Sharing Houses", originally intended to house marginalised Black populations and support them in their activism. For Refugio, this was envisioned for refugees and newcomers. Housed in a building between Kreutzberg and Neuköln, originally inhabited by the Stadtmission (the city church mission), individuals and young families from Sudan, Somalia, Iraq, Afghanistan, Syria and Iran live in the building's upper floors, while the ground floor is used as a café and event space, to make up the cost of living. Techfugees was launched by TechCrunch's Editor-at-Large, Mike Butcher, who founded and chaired the organisation in the wake of Europe's "refugee crisis" in an effort to bring 'the tech community together, at least in Europe, to address this situation in the ways I know they are capable of' (Bhattachariya 2016). In Butcher's vision, areas ranging from housing, integration, and education, were to be tackled through technology expertise, delivered at the different "chapters" of Techfugees (Bhattachariya 2016). The organisation purports to exist 'to empower the displaced with technology' (Wasik 2017). I also relied on the partnership of Betterplace Lab to develop a comprehensive overview of digital technology interventions for refugees, and the newcomer-led research initiative G100, to map said interventions against newcomer priorities. I joined the Berlin chapter Techfugees as an in-house researcher, during which time I both observed and documented the practices and logics of the organisation, and in return advised to the extent my limited knowledge of the space at the time allowed me. Combined with my everyday engagements across these organisations, I conducted 27 semi-structured interviews across 10 so-called "refugee tech" initiatives (including RefugeeText, Jobs4Refugees, Integreat, RefugeesWelcome, Singa Berlin, Taqanu, Refugee.info, Bureaucrazy, ReDi School and Make It German), and research and refugee rights organisations (Migration Policy Institute, iRights, Digital Freedom Fund, the Gesellschaft für Freheitrechte).

The selection of field sites was driven in large part due to the situatedness of both cities as migrant-receiving/sanctuary cities. New York City is one out of 20 cities with over 1,000,000 foreign-born residents (Price and Benton-Short 2007). The Migration Policy Institute (MPI) also counts it as

one of the most 'hyperdiverse' cities, next to cities such as Toronto, under the following criteria: 'at least 9.5 per cent of the total population is foreign-born (this is the average per cent of foreign-born stock for developed countries according to the United Nations)', 'no one country of origin accounts for 25 per cent or more of the immigrant stock', and; 'immigrants come from all regions of the world.' (Ibid). Moreover, New York City's rich history of immigration sets it apart from other hyperdiverse cities. In many respects, New York City is the polar opposite of many European cities — even in the 17th century, under Dutch rule, purportedly '18 languages were spoken in the streets' (Foner 2014). Beyond this, the city is an entrepreneurial hub, which saw $4.227 billion invested in its startups in late 2017 — surpassing its previous American superior, San Francisco (Peterson 2017). Historically known for deep collaborations between the state and the tech sector, as well as its commitment to realising itself as a "smart city",[5] New York has been known to use big data and algorithmic decision-making in everything ranging from Wall Street to social welfare bureaucracy.

Similarly, Berlin has historically been a meeting point for many migrant pathways, though at a somewhat expedited pace since 2015. By then, 81% of the distribution of asylum applications in Europe amounted to the following: 35.2% in Germany, 13.9% in Hungary, 12.4% in Sweden, 6.8% in Austria, 6.6% in Italy, and 5.6% in France (Altemeyer-Bartscher et al 2015). In addition to hosting the largest number of asylum applications, Germany boasts a booming tech sector, which saw an aggregate investment of €4.3 bn in 'newly-launched companies' (Buck 2018) in 2017. As 'a magnet for founders and investors' (Buck 2018), Berlin is on track to succeed London as Europe's tech capital, especially as it is 'starting to close the gap for tech talent moving within Europe' (Turk 2017). It is therefore unsurprising that Berlin also hosts a growing number of digital technology interventions geared towards refugees and asylum seekers, specifically.

Importantly, the variation in terms of the relationship between the market (and the tech sector in particular) and the state, and how this is potentially transformed as a result of the digital urban infrastructures at the core of this dissertation, also drove this selection. The rapid digitalisation of cities has implications for the distribution of power between city and technology actors. As my research shows, these interventions have led to a greater centralisation of control and surveillance powers with authorities in New York City (including at the federal level), inserting technology actors in the business of governance. Conversely, in Berlin, technology actors have been left somewhat to their own devices in the context of technology interventions for refugees in particular, with state actors getting involved only as potential funders — this roll-back of the state, as it were, enables

[5] See the website of the Mayor's Office of the Chief Technology Officer)

experimentalism with vulnerable populations and renders oversight particularly difficult. By cutting through the red tape associated with the German bureaucracy, and authorities either remaining ambivalent or actively opting-in to the intervention, the technology sector occupies not only significant agenda-setting power but also positions of authority in relation to refugee integration. In both cities, technology actors benefit from extended powers, whether by direct centralised means or in indirect decentralised ways.

This research comes with its share of challenges in terms of ethics and positionality. In recognising the power researchers hold when writing accounts on behalf of marginalised communities, and the need to break with how ethnographic work, in particular, has been wound up in perpetuating a colonial gaze, I took measures to ensure that the epistemological standpoints of the research participants were included to as great an extent as possible. Reflexivity in terms of the positionality of the researcher is crucial. This warrants some disclosure, as to the physical, socio-economic, and political status that I occupy as a researcher, as these will undoubtedly have implications for how I see, and what I am granted the ability to see, in addition to the obvious risks of confirmation and characteristics bias.

Several degrees of separation exist between myself and the communities included in this work. As an individual raised in the hybridity of a household of Iranian refugees in Denmark – having furthermore been schooled in a homogenously white district – I occupy a racially and nationally ambiguous identity, which might generate challenges vis-à-vis reflexivity and bias. Similarly, my stake in the struggle against technology-augmented racial marginality is also in part personal. After all, in the so-called "field", I was reintroduced to structures of oppression and exclusion that felt all too familiar – displaced families such as my own and our neighbours grew up in the Denmark of the 1990s, in disenfranchised "ghettos", under conditions of significant labour precarity and racial discrimination, forcing residents to resort to gig-economy jobs. By 1983, my father was one of the thousands of refugees fleeing torture at the hands of the Iranian regime. In Denmark, these traumas were further compounded with an impossible insistence on assimilation and ostracism of migrant success, simultaneously, leading to the othering of my family and many others like it. As an example, I was a teenager before my father had a "career"; while educated as a maths teacher, and then again in Denmark as a technician, successive job rejections meant working in pizza joints and as a cab driver for most of my childhood. My mother, similarly, was in language school for most of my childhood, working odd jobs in elderly homes.

I think the predicament of the Brown Dane with a complex relationship to the border can best be described by analogy of walking through border control upon returning "home" through Copenhagen Airport:

> I dread going through border control. Not because I've ever had any particularly violent experiences per se, but because of the environment that creates an eerily othering experience; a condition under which my very personhood is questioned. It would not be a stretch to claim that the passport control booth in airports remain the spaces in which this is experienced most virulently. The minutes spent wondering whether you should smile or keep on the awkward blank look that even you, within yourself, find utterly suspicious. The set of cyclical thoughts that ensue the lack of response to your practised greeting, delivered to the exact time of the day (to demonstrate that you are in fact literate and therefore more of a citizen than your skin might otherwise reveal), and in as formal way as possible (to show that you are not a "perker"[6], lest they catch you out for being too "ghetto"). The minutes that pass while you practice your defence to a yet-unknown offence, while the officer inspects your passport as if to emphasise his dismay with how atrociously different it looks from the passport he inspected just a little while earlier (it does not). Then the "hold up"; when he holds up your passport next to your face, puts it back down to re-examine not only if the passport photo fits your face, but if the passport is real (despite having swiped it through the system successfully). And then, the elusive "surprise" stage: when the officer behind the desk – white-bearded man – reaches out for your passport, barely sees the passport and says "welcome *home*". In the surprise stage, welcoming someone home is an act of political defiance from the side of the border officer, and an experience of civic exceptionalism for me and people from my community.
>
> *Matthew S. Mahmoudi,*
> *2 October 2019*

Having lived through processes of coerced self-segregation through my own family and immediate community's struggle to "integrate" into Danish society after refuge, witnessing the struggle of newcomers in New York carried an eerie familiarity. I recognised the shielding power of urban concealment; that is, the anonymity afforded via the 'messiness' of the city, as a survival strategy.

[6] Racially derogatory Danish term used against people of predominantly Middle Eastern origin.

While this is an undeniable component in my epistemology, which arguably strengthens my ability to forge particular connections with communities and illicit trust around issues of race, class and migration, there are yet significant limits to my relatability. As a social scientist based out of an enormously privileged higher education institution, with considerable international exposure and symbolic capital – frankly, as someone who has any business in an airport – I am in many respects an *outsider*. Furthermore, the class I have come to occupy, at least in part, my gender, perceived sexuality, and lighter complexion means that my experiences with authority in places like New York City were much different to those of my participants.

However, guidance on approaching qualitative research as an outsider and as an *other* was hard to come by. Though ethnographic literature assessing the intersection of race and writing about culture was consulted (Clifford 2010; Davies and Spencer 2010; Todorov and Mack 1986), established research seemed mostly concerned about reflexivity as a function of writing about "otherness" as a white researcher (Davies and Spencer). To mitigate this, I relied on partnerships with facilitators in my field sites, who possessed existing bonds of trust and cultural knowledge, and helped advise on risks and vulnerabilities, including but not limited to signalling when certain methods or communities of interest were misguided, inappropriate or risky (Jensen and Laurie 2016). While fully-fledged participatory action research (PAR) was not possible as a part of this research project given financial and time constraints, collaborative interpretation of collected data would have been by far preferable as a method of analysis (as per McFarlane and Söderström 2017). With that said, afore-mentioned facilitators in both cities were regularly consulted regarding my emergent findings whilst in the field.

Irredeemable as they may be from their role in reinforcing ethnocentric and orientalist imaginaries, ethnographers, scholars of sociology, geography, and anthropology are in a position to bring to the fore the manners in which developments and power relations, such as the ones outlined in this work, are experienced in the everyday of affected communities and contexts. In this work, I develop my research around privileging othered epistemologies (Costanza-Chock 2018) through a blended participatory and critical ethnographic approach (Brock 2016; Eubanks 2009). Through my dissertation's critical interpretivist orientation, I align myself with scholars such as Scheper-Hughes, in understanding my act of writing as an act of advocacy, which is therefore bound by certain obligations and expectations from the communities included. In following with this, I am more interested in "data settings" rather than datasets (Loukissas 2019; Stanfill 2014), documenting how participating communities experience technology-driven surveillance, experimentation and commodification. I advance this approach in an attempt to generate more complete, representative

and inclusive visions of knowledge production, and in so doing, challenging the flawed premise of the very technology interventions that are underpinned by neocolonial literatures.

1.4. Dissertation overview

This dissertation first looks to the core debates in technology and society, giving particular weight to the genealogy, form, and objective of technology interventions used in migration contexts. By drawing out the logics of these technologies, against the backdrop of racial capitalism, it subsequently provides a framework against which digital urban infrastructures can be analysed and considered constitutive of a broader site of enclosure; a site I have referred to as the digital periphery. The digital periphery ties together processes of technology development across New York City and Berlin, and places them in conversation with technology production at, within, between and beyond the border.

Chapter 2 traces the core debates underpinning this technological moment, and reviews scholarship on techno-capitalism, ICTs for Development (ICT4D), Information Society, Sharing Economy literature, Science and Technology Studies, as well as Big Data and AI discourse. I draw on the seminal works of Noble, Suarez-Villa, O'Neil, Cheney-Lippold, Heilbroner, Madianou, Eubanks, Benjamin, which have begun to popularise the interconnectedness between capitalism and state-sanctioned security and insecurity. I synthesize this literature to reveal how technology deployments in marginalised contexts are situated within the fraught and inextricable relationship between technology and capitalism, with historically devastating outcomes for communities living under poverty and communities of colour. Yet, there remains a gap in the literature on the interconnectedness of racial capitalism, migration and technology. Chapter 2 sets the scene for the conceptual framework that tackles precisely this problem, in Chapter 3.

In **Chapter 3,** I draw on the Black radical tradition to put forward a conceptual framework for interpreting how racial capitalism works in the digital age. First, I describe how racial capitalism has evolved into the digital age, assuming two key characteristics: categorisation and containment. I trace how, from formation through to its current iteration, racial capitalism has been contingent on the utility of categorisation and containment to capture the subjects and sources central to the production of wealth. Second, I provide a non-exhaustive overview of the ways in that displacement has been datafied over the last two decades, synthesising a string of recent reports and scholarly work on technologies deployed in refugee and migration contexts. I designate these technologies according to two broader functional categories of technology, namely information *solicitation* and *dissemination*, which I will collectively refer to as *information control technologies* (ICoTs). I outline

ICoTs as contemporary digital expressions of categorisation and containment practices. Finally, I sketch the conceptual lens emerging from tracing this lineage, the *digital periphery*, and delineate how it matters in three major ways, namely in terms of 1) techno-development, 2) techno-space, and 3) techno-government.

Chapter 4 introduces the historical context to my two forthcoming empirical chapters. I outline anti-immigration laws and policies in New York City, to deconstruct Ellis Island as the romanticised ideal of sanctuary. Specifically, I unravel how processes of assessing arrivals into the port were subsequently disaggregated into everyday urban life – a condition that made the city ripe for the digital anti-sanctuary. The chapter also broadly explores the changing immigration policy landscape in Berlin and Germany, drawing attention to what is concealed by the much popularised "Wilkommenskultur" (culture of welcome). In particular, it notes the shift from "foreigners' law" to "immigration law" in Germany, against the backdrop of an ageing workforce. It also notes the emergence of the "Digital Skills Crisis" in the EU, and the push for competitive leadership in AI and technology in general, as crucial moments leading up to the refugee-tech "boom".

In **Chapters 5 & 6**, I present my empirical findings. In **Chapter 5,** I explore New York City as a site of mundane border enforcement beyond the border, demonstrating how urban migrant environments are commodified and datafied. Short and long-term ethnographic encounters elucidate how the emergence of digital forms of urban migration control – observable through experiences of technology-driven fear and precarity in vulnerable migrant populations – demarcate the digital periphery. The deference of cities to technological solutions in realms crucial to everyday life, such as access to information, identification, and housing, permits technology giants to play a subtle yet increasingly active role in the control of undesirable migrant bodies. In exchange, cities such as New York can continue posturing as "sanctuaries", while facilitating the rapid and lucrative entrenchment of Silicon Valley in the fabric of urban governance. Here, I argue that the city is a legitimising ground for the Valley and a techno-purgatorial containment zone for those fleeing persecution and hunger.

Chapter 6 explores refugee-tech in Berlin. Contrary to New York City, these interventions do not necessarily sustain surveillance structures related to immigration enforcement in the city; nevertheless, they commodify and datafy subjectivities. The increased availability and usage of apps to access information, services, work, and housing potentially transforms the ways in which refugees access life in the city. With little to no oversight and accountability, this neoliberal approach to urban refuge in Berlin risks perpetuating the deep-seated myth that refugees and vulnerable migrant populations are made of fundamentally different matter; that their needs, literacy, and even desires around flexibility and stability, are distinct and by nature more precarious. This, in turn, gives rise to

digital refugeeness. Digital refugeeness does not depend on demonstrating relevance or benefit for the communities it encompasses in order to exist; in fact, it exists almost purely for the enjoyment of experimentalism and the solicitation of technical and financial capital between urban-entrepreneurs, larger tech companies and governmental as well as non-governmental institutions. While in New York, the digital anti-sanctuary was fundamentally about disciplining physical movement, digital refugeenees is about exploiting the subjectivities of moving bodies. These encounters shed light on the workings of the digital periphery, and how seemingly disparate and decentralised forms of digital socioeconomic interventions convert the refugee's predicament into a laboratory.

In **Chapter 7**, I discuss my empirical findings, outlining how technology initiatives in both cities worked through modernisation logics, space, and governments, to categorise and contain displaced subjects. The variation across each city is emblematic of how the modes of subjugation central to racial capitalism – categorisation and containment – continue to play a role today. In New York City, refugees, asylees, and undocumented immigrants alike are kept in a political state of flux through their permanent containment in the bureaucratic process of immigration. The digital interventions purporting to mitigate these circumstances have given rise to information panics and system aversion, further compounding precarity and insecurity. Notably, ICoTs, such as LinkNYC and IDNYC, contain individuals either through detention and incarceration or by keeping them fixed in urban space through information panics, categorising them for subsequent deportation. In Berlin, newcomer identities have been exploited to keep start-up capital in circular motion between funders, the state and technology initiatives, at the expense of reinforcing a racialised assimilationist framing around "refugees". Here, information dissemination technologies generate an abstract category for newcomers – a container for digital experimentation with newcomer populations that is financially rewarded.

This chapter also takes stock of strategies of refusal, giving particular weight to how tactics used to navigate refuge in the digital periphery provide novel insights into what a decolonial neo-Luddite approach to digital technology interventions in the 21st century might look like. These examples go some way in explaining why we must conceptualise survival efforts – in the context of the marginal immigrant – as in fundamental opposition with the dominant information regime, and as an abolitionist undertaking. While both cities have been sites through which the experimental logics of the digital periphery have been especially revealing, they have also set the stage for an accentuation of modes of techno-racial resistance. Through a reconciliation of practices of refusal documented throughout this chapter, it is apparent that alternative emancipatory decolonial imaginations in relation to technology are possible.

Finally, **Chapter 8** discusses the insights drawn from the complete dissertation and concludes by arguing that race, border and migrant entanglements have intensified in the digital age, with digital urban initiatives, in particular, giving way to new modes of value extraction and containment of marginalised bodies through the digital periphery. It also suggests a future research agenda emerging from this work, suggesting a renewed focus on cities, interstitial geographies and global movement as constituent sites of the digital periphery, before briefly exploring possibilities for dismantling it, and how I have navigated this with my own praxis.

Chapter 2 | Literature Review

This chapter critically reviews literature that has made contributions to knowledge about the interrelatedness of technology and capitalism. I draw on work in STS, technological capitalism, critical development studies, and AI & Big Data discourse, to sketch the state of tech, relevant for my subsequent efforts to situate race, border and migrant entanglements in the digital age in the broader epistemic debate. This chapter reveals the gap in the literature on the interconnectedness of racial capitalism, migration, and technology production, setting the stage for the conceptual framework introduced in Chapter 3.

2.1. Reviewing the State of Critical Technology Discourse

Over the past few decades, concepts such as *information society*, *technocapitalism, technocolonialism, digital coloniality, decolonial computing* and so on, have taken the centre stage in a global effort to make sense of how sophisticated technologies are used in regimes of control. Most recently, Harvard Business School's Zuboff gained notoriety for repackaging these terms within the framework of 'Surveillance Capitalism', relying heavily on seminal work by Noble, O'Neil, Eubanks, and Benjamin, in particular. Yet, 'surveillance capitalism', as a framing, falls short of adopting central tenets of afore-mentioned authors' arguments, which situate concepts such as the racial logics underpinning search engine algorithms (Noble 2018), pre-existing socioeconomic inequities (O'Neil 2016; Eubanks 2018), and the carceral design of digital technology at the core of the technology sector (Benjamin 2019). While Zuboff's framing considers the current epoch of technology-augmented capitalism a perversion of "regular" capitalism (Zuboff 2019), the afore-mentioned more race-critical orientation towards technology – recently referred to as Critical Race and Digital Studies (CRDS) (Hamilton 2020) [7] – understand this to be very much a historically contingent feature (not a bug) of racial capitalism (Robinson 1983).

This review begins by tracing the interconnectedness between capitalism, technology production, and state-sanctioned security (and insecurity). The past decade has brought with several critical interrogations of technology deployment made under the auspices that technology could surmount complex social, political and economic problems, what has been referred to as 'techno-solutionism' (Morozov 2013); or, under the rationale that technology is superior to human intervention – what Broussard has referred to as 'techno-chauvinism' (Broussard 2019). This has also

[7] The Center for Critical Race & Digital Studies at NYU: https://criticalracedigitalstudies.com/

included limited foray into migration governance, e.g. digital or e-bordering in Europe and beyond via EURODAC and EUROSUR (Latonero and Kift 2018; Madianou 2019), and; the technologically-mediated counting, management, and experimentation with undesirable bodies via biometric technologies in camps. Yet, there remains a gap in the literature on the interconnectedness of racial capitalism, migration and technology.

To arrive at a conceptual framework that does exactly this in Chapter 3, the following sections trace core debates underpinning this technological moment, and reviews scholarship on Technocapitalism, ICTs for Development (ICT4D), Information Society, Sharing Economy literature, Science and Technology Studies, as well as Big Data and AI discourse. The following sections demonstrate how technology deployments are rooted in a fraught and inextricable relationship between technology and capitalism, often at the expense of communities living under poverty and communities of colour. This review sheds light on how literature in seemingly disparate disciplines can help academic inquiry about technology and power in migration studies

2.2. The Prevalence of Technocapitalist Ontologies

The digital revolution is often treated as a development in countenance of social and political inequities (Alston and Gillespie 2012). The techno-optimistic narrative of the day distinguishes new technologies as somehow capable of extending agency beyond the existing power paradigm; of undercutting the powerful. Nevertheless, this insistence has to be placed within the larger contemporary technocapitalist narrative (Franklin 2015; Suarez-Villa 2012; Heilbroner 1997; Estabrooks 2017). Nowhere have these technologies been more pervasive than in the urban, where there has been a clear attempt to produce ‘a particular kind of city and urban poor that conforms to a risk-taking ideology’ (McFarlane 2012: 2811). With that said, the aspirations of this project are not to denounce technology as a whole, nor to claim that it is “unnatural” or nefarious in a vacuum. Though indisputably constitutive of values and political agendas, the disposition of technological power is entirely dictated by the economic and political environment within which it is embedded (Easterling 2014). Thus, this review takes technological capitalism, or *technocapitalism* (Suarez-Villa 2012), as point of contention, and explores the unequal infrastructures of exchange, economic, social and political relations that technocapitalism has given rise to over recent decades. As per Heilbroner, ‘forces of capitalism endow technology with a sociopolitical importance far exceeding any it had previously enjoyed’ (1997: 1324). This also mitigates some of the expounded critiques of scholars — particularly from anthropology (see Birkbak 2013; Latour 1996) — who insist on *interobjectivity*, i.e.

the relatedness of technology and human evolution. This proposed symbiotic relationship, traceable to the Early Stone Age, omits to examine the discourse on technology from within the framework of capitalism, instead vociferously confronting Sherry Turkle's critique of the alienating effects of some technologies in her 2011 book, *Alone Together,* through obscuring the lines between technologies throughout human history:

> 'Before social media, printed media played a similar role of circulating experiences across space and time. Before printed media, spoken language mediated out relationships, making it possible to coordinate action across space and time' (Birkbak 2013: 132)

Drawing on Dewey and Latour, Birkbak makes a case for technology as 'inquiry' (Birkback 2013) and effectively dispels the idea that technology – or social media specifically – can be considered unnatural. Natural or not, this argument is largely detached from larger structural considerations, and appears void of considerations around power and technology. Though this project does not endeavour to advance Turkle's proposition, it does make a point out of unveiling the power structures and dynamics surrounding technology. As such, it is not enough to merely state that technologies have always mediated social relations. As the 'Technologization of everyday life is as inevitable in developing countries as it is unavoidable in the developed' (Fejerskov 2017), scholars must endeavour to bring to the fore the manners in which technological capitalism subjects knowledge production 'to corporate power and to its commercial ends […] for the primary objective of extracting value [rather than] for society's sake' (Suarez-Villa 2009: 13). After all, capitalism is a 'social formation' (Marx in Heilbroner 1997: 1321) with a 'bifurcation of power into two sectors, one public, and one private' – a distinction that is increasingly blurred under technological capitalism (Ibid). Technocapitalism is especially idiosyncratic of the 21st century, in the manner in which it has come to shape urban life. It has manifested itself in terms of *extrastatecraft* — a negotiated space where '[…] a cocktail of enticements and legal exemptions that are sometimes mixed together with domestic civil laws can be provided' (Easterling 2014: 54). Easterling (2014) and Eubanks (2018) trace the history of the city, from free ports and export processing zones, where liberties were granted to corporations and foreign actors (at the expense of migrant labourers — prohibiting strikes, lowering minimum wages, flexibilising labour — arguably to the end of technological capacity building and thus the development of technocapitalism) to the establishment of poor houses. As a result, engineering has invariably become the ubiquitous solution to all matters pertaining to poverty and inequality, given 'the strong belief' of especially philanthrocapitalist actors '[…] in the potential for technological innovation to progress society' (Fejerskov 2017: 949). Accompanied by large tech

corporations, international institutions and governments, these actors proudly wave a flag with the words 'There's an app for that' (Chen 2011) at issues as diverse as unemployment, marginality, hunger, education, and discrimination. As states continue to invest heavily in smart-cities (hereunder, big-data and sharing-economy initiatives), the emergence of a de facto doctrine of 'smart-urbanism' in development theory and practice becomes inevitable (McFarlane and Söderström 2017). Suarez-Villa contends that these developments are premised on 'experimentation' as a driving force of technocapitalism, which, today '[…] contributes features that set the emerging paradigm apart from prior stages of capitalism' (2009: 8). In many ways, then, the production and deployment of technology is wound up in ideas about 'progress' and modernisation.

2.3. ICT4D and Modernisation Theory

Development plays a central role in technology discourse, with the former being situated as a fundamental pre-requisite to, and a sign of, progress. This is as true for western states who strive for endless innovation in pursuit of technological sophistication, as it is for formerly colonised states, within which technologies are often tested. Whilst literature in development studies has steadily moved on from the modernisation paradigm, there remains a developmental 'hangover'; imperial 'debris' (Stoler 2013), following the postcolonial "breakup", which continues to shape how technology deployments are conceptualised. Applications of Information Communication Technologies for Development (ICT4D), for example, 'remain faithful to a linear, experimental, techno-hegemonic notions of how technology should aid societal progress' (Guenette Thornton, McPherson and Mahmoudi 2018: 8, *forthcoming*). Fejerskov also refers to the tendency of 'development technologies' to treat 'the developing world as a living global laboratory' (Fejerskov 2017: 949), with philanthrocapitalist actors, in particular, deploying product tests in the Global South with an expectation of failure — which in and of itself, is merely seen as being part of the data-collection effort: 'failure of technical and social experiments is not in itself problematic' (Fejerskov 2017: 955). Meanwhile, the fabric of society and social relations are in harm's way, without much consideration for the implications of this (Fejerskov 217). The insistence on technologically advanced solutions to issues such as hygiene (innovations in the development of toilets), reproductive health, and agriculture (cultivation and privatisation of genetic wealth), often builds on a logic not far removed from Rostow's stages model; that a high enough investment in capital will inevitably launch the country in question into the 'take-off' stage (Thompson 2014); nevertheless, they fail to take contextual appropriateness into account (including addressing rudimentary elements, such as how

costly any given innovation is to the final consumer), despite early calls for participatory design, co-creation, and context in early literature on ICT4D from the 90s (Walsham 2017; Granqvist 2005). The promise and myth of *access* (to services, prosperity, and development), is often advanced as the inevitable gift of ICT4D; once seized, the quality of peoples' lives would naturally improve (Granqvist 2005). As such, the digital divide is often identified as the root cause to a lack of access, even as the 'uneven global distribution of material wealth' is an age-old phenomenon that can't be 'isolated from the economic system that [...] perpetuates such inequalities' (2005: 286). In other words, ICT4D often distracts from the political question of material distribution, and grounds inequity in unfortunate, but nevertheless "natural" causes, such as the inherent "backwardness" of a country, and its "natural" lack of technology as a result.

Granqvist, therefore, argues that it's necessary that more effort is spent on developing critical assessment framework for understanding how ICTs are socially embedded, and as such incredibly problematic to simply just laterally migrate from one context to another. Rather, the space should reorient around the understanding that 'if and how citizens of marginalised communities should use ICTs are decisions that have to be made by these people themselves' (2005: 296), calling for the end of the assumption of 'excellence of Western technology' (Ibid). The tragedy, nevertheless, remains that 'investigators, users, and average citizens' are often powerless in challenging the conditions 'of ownership, design processes, and technological outcomes' (2005: 290).

Meanwhile, in ICT4D, supply is often assumed to create its own demand (Sowell 1972); this is apparent from the deficit in local knowledge input and production (Fejerskov 2017). This logic should sound familiar, as it is arguably inspired by Say's Law (Sowell 1972). This insistence on – and elation about – ICT4D has its origin in the field of Information Systems going back to the 1980s (with the Information Technology for Development Journal launching in 1986), though it's not until the 90s that major interdisciplinary interest emerges, giving rise to — amongst other things — the World Development Report from 1998/99, titled 'Knowledge for Development' (Walsham 2017). Citing Gutenberg's bible, the report hails this first significant innovation in communication as the catalyst to what today — or at the time, in 1999 — was being seen as 'a new revolution made possible by new technologies that can shift vast amounts of information almost anywhere in the world in mere second' (World Bank 1999: 56). This report represents early forays into using information communication technologies under the ICT4D banner, quintessentially positing 'efficiency gains' and the opportunity presented for 'firms [to] reap the advantages that come from a vastly expanded potential clientele' as the primary desired outcomes (Ibid). The report continues:

> 'In most developing countries, however, the use of the new technologies, although growing rapidly, is still limited. Low income, inadequate human capital, and weak competitive and regulatory environments slow their adoptions. Sociocultural difference also pose barriers [...] this often means that *modern* knowledge enter a *traditional* society through *traditional* channels' (1999: 56)

The report taps into discredited modernisation tropes as it establishes the dichotomy between the information-rich "modern" world, versus the information poor "traditional" world (Ojo 2016). The report goes on to admit the effectiveness of said "traditional channels", yet insist that modern technologies hold the keys to greater market competition, helping 'unleash the private sector' and 'expand the use of new communications technologies in developing countries' (one wonders why the emphasis was not on mitigations for 'low incomes, inadequate human capital, and weak competitive and regulatory environments' before pursuing the diffusion of new technologies) (1999: 56). There are indeed early accounts questioning 'that ICTs are an instrument for economic and social gains *only within the context of a market regime*' (Walsham 2017: 22). Or pointing out the curious equivalence '[...] made between "ICT in developing countries" and "ICT for development"' (Ibid). Does this suggest that development is reserved solely for the developing world? Against the backdrop of designations such as "traditional" and "modern", ICT4D was a powerful instrument providing justification for — and giving further impetus to — the ideology that treated nations of the postcolony as historically backwards. Modernisation theory was, in other words, alive and well under the guise of ICT4D.

Today, the World Bank has slightly rebranded ICT4D, calling it the 'Digital Development Revolution'. Regardless, the contemporary ICT4D project does not stray far from afore-mentioned logics, although it is important to appreciate the newfound breadth of the space and the technologies it employs. This now compromises initiatives that facilitate connectivity in particular (public WiFi infrastructures), big data & artificial intelligence (see Eubanks 2018; Elish & Boyd 2018; Cheney-Lippold 2017; Byrnes 2016; Franklin 2015), digital identification technologies (biometric systems including finger-print and iris-scan based technologies) (see Stenum 2017; Latonero et al 2019; Kaurin 2019), and blockchain, to name a few fairly large buckets, all in the name of "social good" and "development". The World Bank now coordinates at least 150 projects related to the SDGs, while the UN Global Pulse houses three innovation labs in New York, Kampala, and Jakarta, looking to harness Big Data for sustainable development.

Franklin underscores the role of control as an end of ICT, drawing attention to how technology is connected to 'a far wider set of socioeconomic logics and practices undergirding the characteristic impositions of the current stage of global capitalism' (Franklin 2015: 27). These differential practices

‘[…] in turn, affect the ways science, technology, and knowledge are developed and how they are used and applied throughout society' (Estabrooks 2017: 38) — a recurring cycle that perpetuates the production of technologies with accompanying social structures, and vice versa, gradually expanding the reach of technological capitalism into all aspects of modern society. This is especially contentious when governments of poorer countries are compelled to comply with these external demands for ICT4D, to avoid ‘appear[ing] as backward’ thus ‘readily joining in [...] with the help of development banks and multinational companies on the lookout for new markets’ (Granqvist 2005: 285). The pressure to perform according to the role prescribed to especially formerly colonised nations as ‘“know-nots” [...] in need of Western structures and infrastructure’ reaffirms the enduring modernist nature of development practice (Granqvist 2005). The historical processes underpinning these developments must be excavated, especially as the socioeconomic dimension of ICTs, amidst the current epochal narrative on artificial intelligence, machine learning, etc., are often understated, in favour of narratives that take root in security discourse. This despite the grave role of technology in regulating socio-economic institutions and provisions for the better part of the 20th century and beyond.

2.4. Information Society and the Scientific Charity Movement

It is also worth including academic discourse related to information Society and the intersection (or conflict) with literature on technocapitalism. According to Buckland, the literature on information society largely addresses transformation in the ‘interdependence of people and institutions’ (2017), and what this means for the division of labour. A narrative that emerged largely in the 1980s, the idea of information society was marked by several different overlapping labels at the time, including ‘Computerized society, digital society, information society, knowledge society, knowledge-based society, network society, ICT society, internet society, communication society, cybersociety, media society, post-industrial society, postmodern society, virtual society’ (Fuchs 2012: 414); all attempts at describing Western political structure and society. Though there have been varied debates surrounding the extent to which the contemporary moment is marked by information society or technocapitalism, Fuchs attempts to reconcile these debates:

> ‘For Marx, the rise of informational productive forces was immanently connected to capital’s need to find technical ways to accumulate more profits. That society has to a certain degree become informational is, just like the

> discourse about this circumstance, a result of the development of capitalism' (Fuchs 2012: 431)

In other words, the contemporary moment can be said to be marked by forces of production that are informational – or driven by information technologies – while the 'relations of production' are still capitalist (Ibid). An example of how we might understand information society is through the Scientific Charity Movement described by Eubanks in her seminal book, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor.*

Eubanks traces 'the Scientific Charity Movement' (SCM) to before the Great Depression — a practice that emerged to the ends of 'more rigorous, data-driven methods to separate the deserving poor from the undeserving' (Eubanks 2018: 22). Following heightened anti-pauperism and 'elite anxieties [and] beliefs that African Americans were innately poor' (Ibid), new technologies were deployed under the conviction that aid distribution needed to be done more efficiently (Ibid) — the poorhouse was increasingly observed as a burden on the state. Albeit an uncomfortable reality today, Eubanks argues that the approach was a close cousin of eugenics, which marked the first effort to construct a 'database of the poor' (Eubanks 2018). Fast forward to the 1980s, incidentally, when New Public Management was in its nascence in the UK[8], public assistance recipients came under the scrutiny of SCM-based 'punitive poverty management strategies' (Eubanks 2018), as computers increasingly 'collected, analysed, stored, and shared an extraordinary amount of data on families receiving public assistance' (Eubanks 2018: 34). These 'higher-tech' methods of addressing the problem of poverty were predominantly based on identifying fraud, rather than delivering services. In 2009, $1.3 billion was invested in the automation of the mechanism that determines eligibility for Indiana state's welfare programme (Eubanks 2018: 40) (Kusmer 2009), a public-private partnership that received national attention for the magnitude of its human cost (Ibid). As Eubanks points out, the problem was not on the delivery front, but rather that 'the state and its private partners refused to anticipate or address the system's human costs' (Ibid). These programmes were outsourcing judgment and laterally migrating 'discretion from frontline social servants […] to engineers and private contractors' thus 'supercharg[ing] discrimination' (Ibid). Increasing pressures to reduce public expenditure was partly to blame for the turn to '[…] expansive new technologies that promised to save money by distributing aid more efficiently', though, in fact, systems of welfare control served as '[…] walls, standing between poor people and their legal rights' (2018: 33)

[8] NPM was also very much an attempt to measure worthiness as a function of performance against quantifiable performance indicators — in the name of evidence-based policy making

The literature on ICT4D and Information Society also demonstrates how experimentation has featured prominently over the last century in the development of technological capitalism. Though the subject of this research focuses predominantly on successors to scientific charity, both examples are important. The interaction between development discourse, scientific charity, and technocapitalism, informs our understanding about the ontologies of this particular moment of capitalism, and how this has come to capture the *socio-technical imaginaries* — explored later in this chapter — of institutions, corporations, NGOs, civil society and beyond (Jasanoff and Kim 2015). The language of "disruption" looms large in the digital era — not just in algorithms of complex databases — but increasingly through mobile apps that cover everything from dating to food delivery, banking, finance, and social services.

2.5. The Rise of the Sharing Economy

The regulation of life and labour is no longer constricted to physical space, but increasingly to algorithms and digital urban infrastructures, which govern how, when, and who can access public goods and services (Ibid). As per Elish and Boyd:

> 'Vast and consequential resources are being mobilised around Big Data and now AI. The resultant technologies are frequently invoked as the solution to other intractable social, political and economic problems' (Elish and Boyd 2017: 22).

Often heralded as "garage" startups — or 'the gig economy' — these experimental technologies replace conventional forms of service provision, purportedly connecting people with jobs, housing, and other forms of social inclusion. Their logic is based on the promise of new technologies for 'a future that is scientifically perfectible' (Elish and Boyd 2017), and can largely be seen as a continuation of practices in Scientific Charity Movement, and ICTs for Development. The decreasing costs of mobile technologies are affording new ways of connecting with communities (a development which has been particularly emphasised amongst scholars of media studies, researching activist networks, as well as governments). Coupled with leaps made over the past decade and a half on the internet, platforms are now able to 'offer sophisticated and complex commercial services [playing] the role of professional intermediaries, bridging producers and consumers connecting service or product providers and consumers, and mediating payments and conflicts.' (Finck and Ranchordas 2016: 1310).

In enabling peer-to-peer communication and exchange, digital platforms — which 'fill in 'structural holes' in networks […] that would otherwise be disconnected' (Finck and Ranchordas 2016: 1311) — play the role of digital brokers (Ibid). What once appeared to be novel and organic initiatives, have become ubiquitous, and are now comprised of household names such as AirBnB, TaskRabbit, RentTheRunway, HelloFresh, Uber, Lyft, Gigwalk, Fiverr, Instacart, HomeAway and Deliveroo, which 'have become convenient technological intermediaries that connect supply and demand' (Ibid). In a European Commission JRC Science for Policy Report on 'The Future of Work in the Sharing Economy' from 2016, Codagnone, Abadie, and Biagi pose the question 'Market Efficiency and Equitable Opportunities or Unfair Precarisation?' (Codagnone et al. 2016) — a question that has given rise to some discourse, especially in the wake of promulgation of flexible modes of employment following the financial crisis — and 'to an access-model of consumption', where ownership is not prioritised (Finck and Ranchordas 2016: 1311). To what extent is labour flexibilisation a prime feature of the gig economy, and what might this tell us about the more recent wave of applications, which more specifically target vulnerable populations, such as refugees or asylum-seekers?

The debate on the sharing economy is largely divided into two camps: 'techno-meritocrats' or techno-optimists, who believe it to be 'empowering millions of individuals […] especially for those segments of human capital that escape institutionalised employment [such as] stay-at-home parents, retirees, students [and] under-employed and/or unemployed' (Codagnone et al. 2016: 12), and; 'techno-pessimists', who perceive these as avenues for the creation of 'a new class of networked precariat with no benefits and social protection, contributing to the steady erosion of the 'labour contract' and to increasing inequality' (2016: 13). At the risk of universalising and generalising assumptions about all technology deployments, it is important to distinguish between the different types of tech initiatives available. Amidst the diffusion of a plethora of initiatives, Finck and Ranchordas (2016) and Fejerskov (2017) emphasise that it is difficult to distinguish between sharing-economy 'apps' with the underlying notion of sustainable consumption ('collaborative platforms that facilitate genuine sharing') versus 'purely commercial platforms'. Uber is, for instance, illustrative of this difficulty; treading a grey area in which collaborative exchanges can occur through the UberPool service (Ibid), it also houses a strong business-oriented model, which is premised on a 'surge-pricing' algorithm.[9]

[9] Which, according to Cohen et al. (2016), has enabled the construction of the first observable demand-curve.

Whilst Finck and Ranchordas argue that these two types of apps are fundamentally opposed, Fejerskov (2017) addresses both the structure and the agency side of the coin, contending that the introduction of innovation in a system which is already structurally unequal, is likely to lead '[…] to even greater inequality in the form of a wider socioeconomic gap' (Fejerskov 2017: 61). On the consumer end, this is further supported by the transformative practices of corporations in the past almost 40 years, in the form of the cooption of consumer creativity towards marketability; an approach inspired by Edward Bernaise, and that is more officially known as *The Prosumer Movement* (Kotler 1986), productive consumption, or co-creation in the business and marketing literature. On the workers' side, digital labourers serve as the embodiment of nearly four decades of increased 'managerial prerogative' over the division of labour (Standing 2016). As a 2018 case study by Privacy International will attest, 'there is no official employment contract between employees and employers, employees have fewer rights and protections to challenge their employers' (Privacy International 2018). Corporations and initiatives in the business of creating gig-economy platforms 'emphatically disavow any suggestion that they are employers of the workers' (Riley 2017: 62), whilst leveraging digital technologies to 'optimize labour flexibility, scalability, tractability, and its fragmentation' (van Doors 2017: 901); for example, Uber drivers are subject to both varying fees, and being 'blocked' (prevented from working), without prior notification (Riley 2017).

While there is a lack of scholarship that investigates consequences of the 'rapidly transforming global landscape of digitally mediated labour' (van Doorn 2017: 908), there is an emergent critique that these technologies rely on 'the gendered and racialized subordination of low-income workers, the unemployed, and the unemployable' (Ibid). This further complicates the question of the affordances of these technologies in activist or more resistive contexts, e.g. as a means to counter inequality, marginality, poverty, and oppression; where do we draw the line between technologies of control and technologies of resistance? As per Healey et al. 2017, solutions to this conundrum will in large part depend on the responses and responsiveness of 'traditional unions' (Healy et al. 2017). Nevertheless, the EC report also reveals that concluding evidence is yet to emerge that proves that these new digital labour markets are democratising 'employment opportunities' (Codagnone et al. 2016). The suggestion by globalist scholars that these developments are accelerating global convergence omit how these platforms define and flexibilise labour, in service of global capital.

2.6. Science and Technology Studies

Suarez-Villa recognises that the internal processes of technocapitalist production and research are different from those of industrial capitalism, but nevertheless 'share a common effect', namely, 'alienation' (Suarez-Villa 2012). Equally, Butler (2009), and later on Standing (2016), deconstructed the concepts of the *Precariat* and *Precariousness,* emphasising that this mode of life '[…] implies living socially, that is, the fact that one's life is always in some sense in the hands of the other' (Butler 2009: 14). As themes that have been particularly recurrent in Political Sociology, and Science and Technology Studies (STS), connections must be drawn between the concepts of precariousness and alienation, particularly in the context of online social networks and the internet infrastructures that foment economic and social relations. The field of STS also provide methodological insights helpful in assisting the analysis of these infrastructures, as will be discussed in the latter part of this as section.

As online platforms have become more sophisticated, there has been a tendency to rely on the particular platform's 'brokerage services' for generating trust and social capital in online space (Finck and Ranchordas 2016); a cyber-prosthetic relationship with vast implications for how power is exercised through technology deployments. The following paragraphs delineate the ways in which the combination of the commodification of the digital self, and the rise of the gig economy, further aggravates the process of precarisation and alienation.

With the proliferation of social media profiles, and profile-based login infrastructures on third-party sites (popularised by Facebook and Twitter trust in transactional environments has changed profusely. Miguel points to the creation of, and increasing dependency on, social media profiles: 'Creating a profile, as observed by different scholars (e.g., Baym, 2010; Johnson et al., 2011; Thumim, 2012), is a necessary precondition to participate in social media' (Miguel 2016: 1). These profiles then, come to contain images and other 'user-generated content' (UGC) (Grabner-Kräuter and Bitter 2015) — usually in the form of 'intimate stories about their family, their travels, or their parenting experiences' (Miguel 2016: 1). As each social media profile is tied to some form of 'intimate storytelling' (Ibid), participation in online conversations is observed to be wholly different from earlier more conventional forms of exchange (bulletin boards, chatrooms, etc.) (Ibid), as self-disclosure is an inherent voluntary aspect associated with each post, comment, and log in. Furthermore, the proliferation of Facebook Graph-based Login APIs for third-party sites and applications, render the digital footprints of individuals ubiquitously available and visible in several different contexts; whether one is logging into a site using Facebook credentials to book a room, or to a service exchange like fiverr.com. These features have been disseminated widely, and since reached such critical mass, that they are now eliciting concerns vis-à-vis their potential to:

> '…blur the discourse genres of commerce and communication by defining community in commercial terms and making consumers comfortable with these terms *through the discourse of sharing and like-mindedness*' (Fernback 2007: 325).

Fernback's grievance is with the unaccountable nature of community co-creation in proprietary online spaces, where the fabric of the community is already necessarily - first and foremost - of that of a marketplace. Profiles potentiate the exercise of biopower through the illusion of community, whilst 'normaliz[ing] discourse about community […] as a means ultimately to traffic in a saleable commodity', running the risk of community members 'ignor[ing] impulses toward privacy in favour of membership in a community' (2007: 325). It is, in other words, near inescapable that online transactions today are of a personal character, as the proprietors of these spaces have designed them in such a way.

However, there is a case to be made here for how commercialised technologically-mediated platforms (particularly in the context of apps for work and housing) paint an aesthetic of trust while suggesting more hollow social relations; a phenomenon that has been widely documented particularly amongst more vulnerable marginalised communities who rely on corporeal interactions, e.g. to bargain with bureaucracy (Eubanks 2018). In these contexts, the *precariat* is *alienated*, through what can best be described, in a Foucauldian sense, as an exercise of two modes of power: disciplinary power and pastoral power (Foucault and Ewald 2003). Especially in the contexts of digital urban infrastructures that connect users with socioeconomic provisions, there is arguably a case of *pastoral power* (subjects rely on the system for welfare funds, and thus act according to its judgment), simultaneous to persisting *disciplinary power* (its judgment necessitates subjecting oneself to surveillance) which features in the measuring nature of these same technologies. Cooper outlines how the centralisation and ubiquity of technology, through which social relations are increasingly mediated 'renders intangible not only the other but also our relation to ourselves, particularly to our bodies' (Cooper 2002: 126). Drawing on Zizek's distinction between pornography and sex, versus e-democracy and democratic participation, he draws an allegory that describes seduction as an act in search of the *sublime thing*, while the fullness of pornography hollows out this sociocultural process; in other words, 'both are simulacrums whose very transparency undermines the possibility for meaningful engagement' (Cooper 2002: 145). This chapter picks up on the importance of the corporeal in the context of the city towards its end.

Invoking Tsing can help shed a more nuanced light on the digital 21st century 'precariat' (Standing 2014). In her analysis of precarity, Tsing carves a space for the reclamation of community ties; and emancipatory moment in an otherwise bleak context:

> ‘[In precarity] We can’t rely on the status quo; everything is in flux, including our ability to survive. Thinking through precarity changes social analysis. A precarious world is a world without teleology. Indeterminacy, the unplanned nature of time, is frightening, but thinking through precarity makes it evident that indeterminacy also makes life possible.’ (Tsing 2015: 20)

While this is not explicit in her writing, precarity, in other words, affords the possibility for resistance. We needn’t go further back than the 2017 Junior Doctor strikes of the National Health Service in the United Kingdom. In even more marginal circumstances, it was also in 2016 and 2017 that refugees in Calais, Athens, Lesvos, initiated a hunger strike in calls for relocation (Strickland 2017). Crucially, even under these most deprived conditions, the individuals in question had access to solidarity ties of sorts; fellow travellers and refugees. What happens when people are individualised to the point of complete disembodiment from surrounding communities? Intergenerational solidarity ties have historically facilitated political mobilisation, resistance, and celebration across diaspora communities in urban contexts (e.g. New York City, Detroit, Toronto and LA) — a fallback mechanism, crucial for survival, now threatened by the proliferation of lucrative technologies of control.

Science and Technology Studies literature, however, holds within its corpus many important and useful methodological approaches to negotiating between the structural and the agentic, methods that are especially helpful in terms of locating power. One such tool is Jasanoff and Kim’s ‘Sociotechnical Imaginaries’ (Jasanoff and Kim 2015). Sociotechnical imaginaries are:

> ‘Collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology’ (Jasanoff and Kim 2015: 19)

From within the framing of sociotechnical imaginaries, it is, for instance, possible to uncover the ‘subjective and psychological dimensions of agency’ against ‘the relative harness of technological systems, policy style, organisation behaviours, and political culture’ (Havard STS). In other words, the approach allows the researcher to uncover visions of desirable technological futures both institutionally, and at the more individual level, for instance:

> ‘The workforce-as-a-service model that currently dominates corporate ‘future of work’ imaginaries promotes a technocratic ideal of flexible labour market optimization organized and managed by platforms, which are thereby becoming increasingly important institutional actors in the exceedingly privatized spheres of policy and governance’ (van Doorn 2017: 908).

Jasanoff and Kim's method is interesting and novel but must be combined with an understanding of the forces that shape these imaginaries (technocapitalism, information society, the sharing economy, as well as Big Data and AI discourse; i.e. the literature covered in this chapter). Embedded within a critical understanding of the technological moment within which we exist, sociotechnical imaginaries could, for instance, be used in capturing attitudes in vulnerable migrant populations towards digital urban infrastructures, on the one hand; or it could be used at a broader level to understand how ontologies of technocapitalism are manifest in those who insist on the production of these technology deployments (e.g. the UNCHR's Innovation Service who have insisted on 'self-reliance' as the primary plight of the refugee, and called for market-based technical solutions to the problem). What technological futures and desires do these reflect? What other (and *othered*) futures do they foreclose? And what do they tell us about power?

2.7. Big Data & AI Discourse

The literature on Big Data and AI often emphasise 'a devotion to the measurable type', in the words of Cheney-Lippold;

> '[…] a belief that data both speaks without impediment and with a lifesaving eloquence that describes the human condition better than any doctor or scientist could have. But patterns in data are not truth. They are constructed, algorithmically-produced "truths"' […] big data represents a shift toward an algorithmic production of knowledge that is regarded as more true, and more efficacious, than non-algorithmic, non-big-data forms.' (Cheney-Lippold 2017: 66)

With the accelerated rate of adoption of Big Data, AI, and Machine Learning techniques in various aspects of social and civic life, governance, education, health and beyond, there is certainly a narrative of optimism amongst policy-makers and practitioners; that our most pressing issues of the day, from the SDGs and human rights, to policing and welfare could be solved with a technical fix, was a profound idea (Meier 2015). However, even the most enthused have had to take a step back and re-evaluate; in May 2018, AccessNow and Amnesty International launched 'The Toronto Declaration' at the annual RightsCon event (AccessNow 2018), amidst an audience of technologists, technology companies, human rights organisation, and others in the 'tech for social good' community. The Declaration, which aims to protect 'the rights to equality and non-discrimination in machine learning systems', is rooted in International Human Rights Law, and calls for algorithmic accountability. It is

one of many non-binding efforts to start a conversation around the more nefarious consequences of these technologies. Nevertheless, without much by way of an enforcing mechanism, the status quo remains, as tech corporations maintain their positions as arbiters of ethical flexibility.[10] It also remains to be seen whether the Toronto Declaration will serve as a tool for corporate virtue signaling, or a modest nudge.

The fetishisation of Big Data and AI has led to a form of control manifest in the individual's 'self-regulation, distribution, and statistical forecasting [that] describes the episteme grounding late capitalism, a worldview that persists beyond any specific device or set of practice' (Franklin 2015: 28). Algorithms are best known, given recent scandals involving Facebook, as particularly useful for scanning meta-data to create measurable-types (micro-state details used to extrapolate [and simplify] macro-states about users) (Cheney-Lippold 2017). So valuable is this information, that a recent EU project seeks to leverage public social media data for "the public good".[11] However, the same categories that enable measurable-types to produce norms of the "average user" also allow for the generation of it what perceives as the "deviant" other. As users browse social networks or the internet, they unknowingly accept a prescribed identity, which they help reproduce, through the consumption of ads, joining of Facebook groups, liking of pages, etc. (Elish and Boyd 2018).

There is, in other words, a strong link between algorithmic identity and subject formation. This is especially true when technologies become keys for accessing certain spaces; spaces that are inaccessible unless the user behaves in a "desirable" manner. One must, in other words, perform, for example, more white, and more male (and more rational), in order to access certain online (and offline-through-online) social spaces, without being red-flagged (Eubanks 2018: Cheney-Lippold 2017). What is far more concerning is how 'states manipulate social norms via haphazard rubrics of categorical simplification, and ongoing "project of legibility" that connects populations to power' (Cheney-Lippold 2017).

When some individuals can be algorithmically more white — and algorithmically more male — than others, deviant social media users are faced with a de facto institutionalised disadvantage. One famed example of this is Sweeney's research of Google AdSense ads, where she looked at 'ads that came up during searches of names associated with white babies (Geoffrey, Jill, Emma) and names associated with black babies (DeShawn, Darnell, Jermaine) […] containing the word "arrest" were shown next to more than 80 per cent of "black" name searches but fewer than 30 per cent of "white" searches' (Sweeney 2013; Byrnes 2016). Behind the safety of the keyboard lies an unsafe process of

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[10] See for instance partnershipforai.org, an initiative set up entirely by the corporations themselves
[11] See decodeproject.eu

disciplining individuals into mere ‘dividuals’ (Deleuze 1992). This, however, animates the hazards present in the increasing uptake of algorithmic systems in e.g. law enforcement as neoliberal cost-cutting sold under the auspices of “progress” (Brayne and Chrisin 2020). As Navarro-Remeal and Zapata put it: ‘We must situate ourselves within the production and consumption of technology and technological devices and assume our responsibility in the consequences of these processes’ (2018), prompting the need for especially critical ethnographic inquiry to interrogate how these systems are experienced by communities on the receiving end of them.

2.8. Conclusion

In this chapter, I explored how technology production and deployment have been historically wound up in perpetuating neo-colonial relations under the auspices of “development”, anti-pauperism, the precarisation and emergence of flexibilised class of gig workers, disempowerment, and racism. While technology, and technocapitalism in particular, relied on the justifications provided by the pre-existing social problems of the day, critical technology discourse has only recently turned its attention towards racial dimensions in particular. The bourgeoning field of critical race and digital studies (CRDS) has been a seminal source of knowledge production at this intersection. Even here, however, there remains a gap in the literature on the interconnectedness of racial capitalism, migration and technology, as explored in the next chapter. The conceptual framework introduced in Chapter 3, advances the idea of the *digital periphery*, to make sense of how technology deployments are fused with modes of subjugation inherited from – and in perpetuation of – racial capitalism, and how this works together to discipline mobilities across displaced communities.

Chapter 3 | The Making of the Digital Periphery

In this chapter, I draw on the Black radical tradition to put forward a conceptual framework for interpreting how racial capitalism works in the digital age. By attending to the frontiers of racial capitalism and increasing technology deployments, I advance the idea of the 'digital periphery' to make sense of how migration is commodified and 'datafied', and how bodies are kept in place or perpetual movement.

First, I describe how racial capitalism has evolved into the digital age, assuming two key characteristics, i) categorization, and; ii) containment. Herein, I will trace how, from formation through to its current iteration, racial capitalism has been contingent on the utility of categorization and containment to capture the subjects and sources central to the production of wealth. To understand this evolution, I employ Walia's examination of 'Border Imperialism' (2014), Quijano's coloniality of power (2000), Robinson's oft-neglected use of 'racialism' (1983), Benjamin's New Jim Code (2019), and Appadurai's observations on numbers in the colonial imaginary (1996), whose work brings to light the genealogy of categorization and containment under racial capitalism.

Second, I provide a non-exhaustive overview of the ways that displacement has been datafied over the last two decades, synthesizing a string of recent reports and scholarly work on technologies deployed in refugee and migration contexts. I designate these technologies according to two broader functional categories of technology, namely information *solicitation*, and *dissemination*, that I will collectively refer to as *information control technologies* (ICoTs). Cognizant of digital articulations of race as reflections of 'offline […] racial identity' and 'technocultural representations of Whiteness in code' (Brock 2016: 1016), I outline ICoTs as contemporary digital expressions of categorization and containment practices.

Finally, I sketch the conceptual lens emerging from tracing this lineage, the *digital periphery*. My development of the idea of the digital periphery demonstrates how practices of 'categorization' and 'containment' work together on peripheral subjects and via discursive terminologies like 'refugees', 'Black', 'development', and 'big data'. In doing so, ICoTs use the digital periphery to produce sites of control and value extraction. The digital periphery matters in three ways, namely in terms of 1) techno-development, 2) techno-space, and 3) techno-government.

Techno-developmentally, the deployment of modernization tropes by technology actors legitimates their interventions in the lives of the deserving *others*. Herein, categorization occurs through the iconography of an essentialized and non-agentic grouping of people, in which experimental digital interventions are iterated. The political grouping is hence virtually contained —

or ‘sandboxed’ — through the intervention itself. The intervention enables the tech actor to extract the raw materials needed to develop further products, i.e. data (Fejerskov 2017; Thatcher 2016; Benjamin 2019; Zuboff 2019), and; it drives financial capital from philanthropic actors, venture capitalists, humanitarian actors and governments to the tech actor, who intercedes on their behalf. In other words, the digital periphery justifies the circular movement of capital between the same group of actors, on the back of marginalized *others.*

Techno-spatially, the digital periphery is an attempt at transcending the spatial bounds drawn around ‘peripheral’ geographies (Wallerstein 2004; Amin 1974; Rostow 1959), by identifying people marginalized by borders and layering a digitally-mediated symbolic enclosure on top of them.

Techno-governmentally, governments and institutions rely on these interventions, symbiotically, to identity and control said *others*, who are in turn made dependent on such systems for access to a bare minimum of information, goods and services. Consequently, practices of categorization and containment weave together as disparate places as refugee camps — now rife with apps, digital and biometric ID and surveillance systems — with smart cities and transform them into the digital periphery. This not only sustains technological experimentalism, data extraction, and the mobilization of vast amounts of capital for profit but importantly drives symbolic and political capital from governments and humanitarian actors to the tech actor (in exchange for its products), who is now increasingly engaged in governance.

As a concept, the digital periphery allows for the rapid advancement of technology upon displaced populations to be disaggregated. It reveals an inseparable and mutually constitutive entanglement of race, borders, and migration, advancing racial capitalism beyond its physical and spatial limitations. In lieu of mitigating conditions of displacement, these practices compound analogue borders by engaging in a practice of digitally fusing borders to racialised characteristics (sometimes even to individuals directly, as per Stenum and Mbembe), resulting in symbolic, material, and epistemic forms of technological marginalization.

3.1. Disciplining Mobilities Under Racial Capitalism

Critical discourse on technology has been largely de-centred from race and mobility. Over the past few decades, there has been no shortage of concepts that, to varying extents, feature a critical interrogation of technology and inequality — this includes concepts such as information society (Castells 2010), technocapitalism (Suarez-Villa 2012), technocolonialism (Madianou 2019), digital coloniality (Thatcher 2016). Most recently, Harvard Business School’s Zuboff gained notoriety for

summarising and repackaging findings from afore-mentioned works for a general audience, dubbing this a moment of ‘Surveillance Capitalism’ (2019). In short, the nexus between technology and capitalism has taken the center stage in a global effort to make sense of how sophisticated technologies are used in regimes of control. This vocabulary has certainly been useful in elucidating the mutually constitutive relationship between technological capitalism and state-sanctioned security, and with some attention being paid to its racial consequences. Nevertheless, these discourses have tended to be largely de-centred from race and have been decoupled from the literature on racial capitalism. As critical conversations around technology (and especially surveillance) move to the mainstream and become popular discourse, it is important to excavate what our technological moment tells us about race and power in the 21st century.

In this chapter, I show that Cedric Robinson’s molecular analysis of Racial Capitalism is pertinent for understanding, *not* how capitalism invented racialism (and how surveillance and technological capitalism reinvented it), but how racialism preceded capitalism altogether. That former structures of oppression were not in fact negated through revolution from feudalism to capitalism in the Marxist sense, as racialism survived and was made further sophisticated under capitalism. Robinson’s vital contribution here is to point out that capitalism depends on *racialised mystifications,* which enable its proprietors to continue extracting value from racialised groups of people. This was not a flaw but by strategic design. Applied back to the context of this dissertation, Ali (2019) argues that the novelty for critical scholars should not be located in algorithms being *racist*, but rather in how racism itself is programmatic or ‘algorithmic’, and how this gave (and continues to give) impetus to a series of logics that undergird global processes today. Historically, this has meant that the tropes that first justified slave labour and slave trade, have continued to also undergird the establishment of the so-called under-developed “periphery” in need of development. As this chapter will suggest – and as will be demonstrated throughout this dissertation – these colonialities have, today, given birth to the digital periphery. This digital periphery transcends conventional colonial geographies and asymmetries of power; it is a new mystification, fit for the contemporary supposedly post-racial era, which nevertheless depends on the existence of “under-developed”, “under-connected”, “undocumented”, and undesirable groups, for value extraction in service of capital.

In much of Black radical and critical migration studies literature, two key modes of direct and indirect subjugation have made up the means through which control over racialized subjects has been asserted, namely categorisation and containment; both reoccurring in studies of the early formations of racial capitalism. As modes that remain salient today, these can be understood as what Quijano refers to as colonialities of power, i.e. continuities of colonial expressions of hegemonic power

(symbolic, epistemological, economic), post-independence (Quijano 2000). Wound up in modernisation discourse, and the promise of greater prosperity or access to rights, categorisation and containment have been normalised into everyday life, in spite of its well-established historical ties to settler-colonialism.

In 'Undoing Border Imperialism', Walia argues that practices of bordering have long been central to the origins and expansion of capitalism, referring to how colonial expansion is a project of first 'transgressing' borders, before eventually 'fortifying' them (2013). Racial mystifications were constructed to justify the self-declared entitlement of the settler-coloniser to transgress and fortify borders — to *contain* bodies — that is, racial tropes around the alleged nature of subaltern peoples, which were subsequently made synonymous with servile positions in the global division of labour (Robinson 1983; Quijano 2000; Omi & Winant 1994). Changing practices of categorisation were utilised and adjusted over time, well into the contemporary moment, placing race at the core of how mobilities came to be managed.

This section traces practices of categorisation and containment in post-colonial, Black radical, and migration studies literature, to sketch out contemporary processes of mobility management as colonial continuities. It then suggests a conceptual analytical framework through which the digital periphery — that is, the racialised enclosure under which ICoTs discipline mobilities, today — can be mapped and interrogated.

3.1.1. Categorisation

As this section will demonstrate, the genealogy of racial categorisation is one that moves through mediums; through lore, numerical representation, images and iconography, and eventually through fully-fledged computational perversions (or 'apps'). Far from being simply a product of modernity, racial categorisation precedes racial capitalism. In medieval Europe, the idealised European subject 'emerges in part through racial grids produced from the 12th through 15th centuries', that gives way to 'the unstable entity we call "the west" and its self-authorising missions' (Heng 2011: 266). Heng's analysis of the mobility of race is especially significant towards developing a better understanding of how racialism has moved through media and socioeconomic systems throughout time:

> '…race studies after the mid-20th century […] encourage a view of race as a blank that is contingently filled under an infinitely flexible range of historical pressures and occasions. The motility of race, as Ann Stoler puts it, means that racial discourses are always both 'new and renewed' through historical time (we think of the Jewish badge in premodernity and modernity), always 'well-worn' and 'innovative' (such as the type and

scale of 'final solutions' like expulsion and genocide), and 'draw on the past' as they 'harness themselves to new visions and projects' (Heng 2011: 262)

Even before any particular discourse on the European subject, some of the earliest practices of categorisation can be traced back to the Carolingian family of the 9th Century and beyond. Contrary to a large body of critical scholarly work on race, including Quijano (2000) who identifies the roots of racial categorisation as justification for capitalist expropriation in the discovery of the "new world", Robinson (1983) argues that racialism predates capitalism and very much formed the 'social basis' of European civilisation. Taking its point of departure in what Romans initially referred to as 'barbarians', the term was used as 'a function of exclusion rather than a reflection of any significant consolidation among those peoples' before C11-C12 (Robinson 1983: 10). The expansion of European civilisation was indeed catalysed by the migration of these very Barbarians; 'North Africans, Italians, Poles [who] cross into Metropolitan France to look for work' (Robinson 1983: 11). This includes peoples of cultures and languages, some of which have since been lost or normalised into Europe's fabric, including 'Cornish, Prusai, Basque, Etruscan, Oscan and Umbrian' (Ibid). Indeed, during this time, assimilation of 'Barbarians' into the European slave labour force serves as the 'critical basis of production' for the expanding civilisation — a trend, which he notes, continues to our current day (with slave labour displaced by low-wage gig-economy driven work) (Ibid). Famously, Britain made use of and even engaged in the export of, Irish slaves 'until the arrival of sugar in the early 1640s, and the development of large plantations' (Robinson 1983: 34). Racial designations in Europe were marked by several variables, including, but not limited to, those that might define people as 'indentured peasants, political outcasts, [the] poor or orphaned females', or any number of other strata belonging to Europe's own "barbarians" (Ibid). Europe's inherent racialism, argues Robinson, was not eliminated as a consequence of neither feudalism nor capitalism (Robinson 1983). Quijano agrees that '[…] the early association of the new racial identities of the colonised with the forms of control of unpaid, unwaged labour developed among the Europeans the singular perception that paid labour was the whites' privilege. The racial inferiority of the colonised implied that they were not worthy of wages. […]' (Quijano 2000: 539). In the paragraphs that follow, some of the various media throughout which racialism has been sketched most virulently and historically, are summarised:

Through Folklore

Just as nations rest on cultural fictions to drive its imaginary constructions (Martone 2009), racism depends on categorical fictions of difference; mythologies, and iconographies — or as described below — folklore, to assert hegemony. In 'Racecraft as Witchcraft', Fields & Fields explore how the social construction and normalisation processes involved with witchcraft are parallel to that of racecraft. They argue that there are 'intellectual commonalities with witchcraft' in so far as 'circular reasoning, prevalence of confirming rituals, barriers to disconfirming factual evidence, self-fulfilling prophecies, multiple and inconsistent causal ideas, and colourfully inventive folk genetics' are concerned (Fields & Fields 2014: 198). Consequently, the inhabited social world for participants in racecraft is one in which 'racial differences are real and consequential, whether scientifically demonstrable or not' (Ibid).

Practices that maintain this world include folklore, communicated through oral storytelling or even visual art. Heng, for instance, details how racial tropes around Jewish people were so prolific in the 12th century, that it encompassed the scientific, medical and theological communities altogether, advancing the claim that 'Jews differ in nature from the bodies of Western Europeans who were Christian: Jewish bodies gave off a special fetid stench […], and Jewish men bled uncontrollably from their nether parts […] like menstruating women. Some authors held that Jewish bodies also came with horns and a tail' (Heng 2011: 259). Similarly, in the 13th-century encyclopaedia of Baetholemeus Anglicus, Heng found that white folk are seen to be produced out of colder climates, while 'hot lands produce black: white being, we are told, a visual marker of inner courage, while the men of Africa, possessing black facets short bodies, and crisp hair are "cowards of heart" and "guileful"' (Ibid). These tropes are not unique and reoccur in places ranging from 13th-century tympani in Rouen to illustrations in English psalters (e.g. depicting malevolent executioners, adulterers, and the possessed as having African phenotypes) (Heng 2011). Heng makes the case that our understanding of racialism would be severely limited if we were only to focus on 'canon law, chronicles, […] historical documents […], encyclopaedias' from England, Germany, France, and Spain, as they 'form only a minuscule cross-section of the cultural evidence across the countries of Western Europe' (Ibid). Heng importantly laments that:

> 'in spite of a system of knowledge and value that turns on a visual regime harvesting its truths from polarities of skin colour, and moralizings on the superiority and inferiority of colour and somatic difference – canonical race theory has found it difficult to see the European Middle Ages as the time of race, as racial time' (2011:261)

Here, Heng's critical contribution to our understanding of European cultural development (as one that is firmly rooted in racialism) is based on the basic premise that race, rather than having 'substantive content', is in fact 'a structural relationship for the articulation and management of human differences'. This is materialised socioculturally, as much as it is biopolitically, with theology and religious hegemony, in particular, as the driving force behind the construction of what came into being, simultaneously, as the interdependent *other,* and the idealised European subject.

Through Numbers

One particularly virulent and unambiguously reductive form of categorisation emerged through practices of numbering and counting colonial subjects. One of the most well-documented cases of this occurred through the 'enumeration strategies' of the British empire in India where quantification of colonial subjects was used as a mechanism of atomised social control (Appadurai in Breckenridge and van der Veer 1993). The Indian census, enumerating and categorising 'the vast ocean of numbers, regarding land, fields, crops, forests, castes, tribes' in the early 19th century was pivotal in the creation of 'countable abstractions […] at every imaginable level', propelling forth the deceptive notion that the British were indeed in control of 'indigenous reality' as a whole (Appadurai in Breckenridge and van der Veer 1993: 317). The mere belief that quantification was useful (indeed even a prerequisite to the survival of world powers), was essential in establishing immutable dependency with the party carrying out the numbering in the first place, while the actual 'significance of these numbers was often either non-existent or self-fulfilling' (Ibid).

Undergirding this 'colonial *imaginaire*', was a logic of not only translation of the so-called 'periphery' for the 'core', but an epistemic justification for violent efforts to fundamentally flatten and '[clean] up the sleazy, flabby, frail, feminine, obsequious bodies of natives into clean, virile, muscular, moral and loyal bodies that could be moved into the subjectivities proper to colonialism' (Appadurai in Breckenridge and van der Veer 1993: 355). Here, categorisation is a necessary political justification for colonial expansion in the name of civilising "unruly" racial subjects. As per Omi and Winant, to have recognised colonial subjects as one and the same as the coloniser would have been to afford the same treatments to them, thus raising a moral question around practices of 'expropriation of property, the denial of political rights, the introduction of slavery and other forms of coercive labour, as well as outright extermination' — through categorisation, colonial powers, and Europe in particular, have maintained their self-anointed position as 'children of God' (Omi and Winant 1994: 62).

Through Images

Throughout much of the 18-20th centuries, race was (and arguably still is) understood as 'a category of modernity' (Quijano 2000). Quijano argues that the most important colonised subjects of any given domain are typically the most exploited — and by extension, the most racially profiled and mystified — groups, given their centrality to the coloniser's economic prosperity. One of the most prolific technologies used to generate a spectrum of modernity mapped onto race has been the use of photographic images.

De Laat and Gorin interrogate the use of humanitarian photography by organisations as well as religious actors from the 18th century onwards. The photograph becomes the medium through which 'distant spectatorship' is made possible; as the industrial revolution paves the way for 'distancing people from what was previously considered unavoidable suffering', the suffering of 'distant others [becomes] more proximate'. Ironically, as technological and medical advancement reduced pain in some populations, the same advancements increased the volume and magnitude of violence (e.g. as a result of war) elsewhere; a new 'moral posture' emerges — following the wide dissemination of stories of 'far-away suffering' — that paints suffering and by extension those who suffer, fundamentally distasteful (Ibid). They describe:

> 'The distaste for pain also inadvertently contributed to a predilection for seeing the pain of others − the rise of the pornography of pain − and to the development of a moral righteousness on the part of spectators through their 'proper' responses to the suffering of others (Haltunnen, 1995). When attention turned to the suffering slave, these black bodies represented a mixed sign of human cruelty and exotic sexuality' (De Laat and Gorin in Bennett et al. 2016: 20)

It is not difficult to see how humanitarianism today, through the medium of photography, has ended up becoming more concerned with the *image* of itself (and what it communicates about itself through the photos curated, as humanitarian organisations), rather than 'with the events causing suffering' (Ibid). It has been well-established that humanitarian photographs, taken from e.g. missionary expeditions from the 1840s onwards, were central to the eugenics and scientific racism movements (Ibid). Because they served as an illusion of immutable difference between subject and saviour; because they made synonymous the suffer-*er* with suffer-*ing*. Ruha Benjamin also points out how camera companies, including Polaroid, directly profited from South African apartheid (Benjamin 2019). Even for photographers, companies, and organisations who may have been be good-willed, the economy involved with the humanitarian appeal of photography means 'easily recognisable stereotypical photographs will persist' (Ibid). The irony of this practice is the paradoxical nature of

it; for instance, though humanitarian and human rights organisations alike purport to report on the conditions of famine, causes are rarely addressed — instead, their inaccurately portrayed effects and symptoms are. This contributes to a noxious narrative in which the political dimension of a humanitarian problem is ignored, and the circumstances of the suffering *other* are essentialized to the point of synonymity with the *other* themselves, and the geographical region to which they may pertain. In other words, the so-called "periphery" is born. Photography, according to Benjamin (2019), 'helped to construct and solidify existing technologies, namely the ideas of race and assertions of empire, which require visual evidence of stratified difference' and carried with it the illusion of objectivity and neutrality, in stark contrast to e.g. medieval art with depictions of race, as discussed in the sections above (Benjamin 2019: 100).

3.1.2. Containment

Today, the continued function of 'containment' has been masked by largely universalised and taken for granted notions of borders as features of the western liberal model of nation-states. Walia's seminal work points to 'border imperialism' as a lens through which we can analyse '[…] the modes and networks of governance that determine how bodies will be included within the nation-state, and how territory will be controlled within and in conjunction with the dictates of global empire and transnational capitalism' (Walia 2013: 3) — in other words, while borders are absolutely about the physical demarcation of space, Walia suggests that border imperialism includes the 'conceptual borders that keep us separated from one other'. Understanding containment as a function of border imperialism helps us make sense of the ways in which the border continues to have salience, not just before and during refuge, but also after resettlement in the everyday lives of displaced populations. ICoTs are layered on top of these existing structures of containment and management of mobilities.

This section outlines patterns of how practices of containment have been deployed, historically, in service of the development of racial capitalism. Combined with the genealogy drawn from the previous section on categorisation, this section shows that from its formation through to its current iteration, racial capitalism has been contingent on the utility of these two afore-mentioned modes of subjugation to capture the subjects and sources central to the production, accumulation, and protection of wealth.

Practices of containment follow on geographies resulting from practices of categorisation; once racialised, populations can be cordoned off to generate states of migratory exception around the 'unruly' mobile — or in other ways, displaced — body, in service of racial capital (Walia 2014;

Tazzioli 2018). Robinson (1983) and Kelley have referred to the process by which these geographies of violence are created — through which the possibility for Europe arises in the first place — as 'the Black Mediterranean'. The Black Mediterranean is constructed internally (e.g. through racialised "integration" politics) (Rajaram 2018), as much as it is externally (through border imperialism) (Ibid). Tazzioli defines containment 'through mobility' as 'administrative, political and legal measures that use (forced) mobility as a technique of government', referring specifically to 'the ways in which migrants' movements and presence are troubled, subjected to convoluted or hectic movements and to protracted moment of strandedness' (2018: 2765). As per Walia, Tazzioli stresses that these policies are necessarily as much about spatiality as they are about temporality. Drawing on Foucault, we are reminded that containment strategies are not, in fact, reliant on a 'preconceived notion of a carceral space to the detention mechanism' (Tazzioli 2018: 2), but could, in fact, consist of a mixture of policies, including those that render conditions of displacement hard to escape or make it impossible to reach intended destinations or even those that disrupt how information about the process of immigration is obtained (Ibid)

As per Rajaram, refugees (and marginalised migrant populations in general) have great difficulty 'valorising their body power because of their sub-powers that privilege a specific idea of labouring' (Rajaram 2018: 627). This is in line with Walia's definition of her fourth *structuring* of border imperialism, namely 'the state-mediated exploitation of migrant labour, akin to conditions of slavery and servitude, by capitalist interests' (Walia 2014) — which made possible through the artificial construction of the "undocumented", "ungrateful", and in other ways, "irregular", migrant, named so for political expediency (Ibid). This is what Walia calls the process of 'ilegalisation', through which the neoliberal 'conditions of permanent precarity' are created and maintained (Ibid), while at the same time 'legaliz[ing] the trade in their bodies and labour for domestic capital' (ibid). States and non-state actors tend to deploy migration-entered political strategies, such as the afore-mentioned, during times of crisis; whether through establishing an existential threat (e.g. the so-called threat of terrorism), or a socioeconomic one (e.g. unemployment, austerity, and staggering wages), European containment practices are usually political technologies used in response to manufactured political crises, intended to reorder and rally the body politic around the idea of the cohesive nation-state (Rajaram 2016). In the words of Kelley, 'the Black Mediterranean is about the fabrication of Europe as a discrete, racially pure entity solely responsible for modernity, on the one hand, and the fabrication of the Negro, on the other' (Kelley in Smythe 2018: 8).

One immediately obvious invocation of a state of migratory exception could be the makeshift refugee camps set up on the Greek 'hotspot islands' facing Turkey, following the 2016 EU-Turkey

deal (Tazzioli 2018). Here, said hotspots serve ‘a containment function as migrants’ temporary detention sites, in an effort to prevent them from reaching Athens’ (2018: 2765). Nevertheless, as Tazzioli and Garelli note in their 2018 study, the experience of strandedness, coupled with invasive identification procedures (e.g. they document having encountered migrants in Lampedusa who fled the island, having been forcibly fingerprinted) (Tazzioli and Garelli 2018), tends to generate a greater imperative for migrants to move; in other words, the opposite outcome of what is allegedly intended with containment. This is, however, by design. While the EU espouses a two-pronged public narrative that foregrounds its generosity towards migrants, while maintaining a strict position on ‘stopping unruly mobility’ and ‘keeping migration across Europe to the minimum’, it also exercises its governmental logic through keeping migrants ‘on the move’, forcing them ‘to undertake more and more erratic and diverted journeys, as a result of the many internal transfers they are targeted for’ (2018: 20). In other words, Europe is forging the absolute migrant. Through universalising their transience, and ‘keeping them in transit’, Europe manufactures states of migratory exception (Ibid).

3.2. Datafied Refuge

This section provides a non-exhaustive overview of the ways in which mobility and refuge have been datafied over the last two decades, synthesising a string of recent reports and literature on “refugee tech”. This section unveils what the Latinx and Chicanx digital grassroots hub, Mijente, has referred to as the ‘Cloud Industrial Complex’ (Who’s Behind ICE report), or equally, what Todd Miller refers to as the Border Industrial Complex (2019). Secondly, it outlines relevant technologies underpinning afore-mentioned regime, divided according to their function as, predominantly, information *solicitation,* and *dissemination* tools.

3.2.1. The Border as Information Control

Over the last few years, there has been extensive documentation of how humanitarian organisations, much akin to law enforcement and border control agencies, ‘use fingerprints, iris recognition, DNA, facial recognition for identity management, although lesser-known techniques include voice verification, vein pattern recognition, and even keystroke dynamics’ (Maitland 2018: 38). Maitland draws on the example of Afghan refugees, who following return, were faced with a UNHCR mandated compulsory iris registration. In these early deployments of biometric technologies in the context of refuge, ‘Afghan refugees’ iris images were collected, digitised, and stored in the UNHCR

database. To receive assistance, a refugee's iris would have to match their preexisting biometric file to prove they were entitled to humanitarian aid, as well as to ensure that no one could collect more aid than they were entitled to' (Ibid). This eventually evolved into what we now know as the Biometric Identity Management System or 'BIMS', with the explicit aim 'to capture and store all fingerprints and iris scans from refugees and people of concern' (Ibid).

The UNHCR has been known to deploy technological interventions in camp contexts, particularly for what it dubs 'populations of concern' (which it shortens to 'POC' — incidentally also a term more widely recognised as a reference to 'persons of colour'). 'POCs' face greater difficulty in receiving protection than "ordinary" refugees and asylum seekers; particularly as 'IDPs, for instance, are often displaced for the same reasons as refugees but lack international protections under the 1951 Refugee Convention, because they have not yet crossed international borders' (Kingston in Maitland 2018). It is unclear how far the term 'concern' stretches, but it has arguably paved the way for a race to the bottom for technologies in the humanitarian sector, especially in the refugee camp — after all 'systemic innovation is driven by new technologies, arising from broader societal trends such as security concerns' (Maitland 2018: 36). With Google and Microsoft occupying fourth and fifth place in net contributions to the humanitarian space, this is not entirely surprising (Culbertson et al. 2019).

Technologies deployed in migration contexts have tended to fall under broadly two categories: *information solicitation,* and *information dissemination* technologies. The first is predominantly concerned with information gathering e.g. through mobile data collection (for questionnaires, etc.) and biometric registration. In September 2004, the UNHCR reported that their 'refugee agency staff around the world' were 'learning to use a new registration software programme, ProGres, to improve the way they collect, share and use information on refugees and other persons of concern'.[12] The 'ProGres' system — developed initially in response to the 1999 crisis in Kosovo through pro bono work by Microsoft employees — remains supported by Microsoft products today (namely, Dynamics CRM Enterprise Server, Sharepoint, BizTalk, Microsoft SQL) (Maitland 2018: 148). In the camp context, mobile data collection is increasingly carried out using KoBo Toolbox — a product developed by the Harvard Humanitarian Initiatives and the UN OCHA (Ibid), with extensive support from Cisco (since 2014). The UNHCR even 'launched its own KoBo server to provide centralised data storage and analytics tools for its staff and partners'(Ibid). Initiatives like this and ProGres, have also been rife among agencies and organisations such as UNICEF, Save the Children, and the IRC,

[12] https://www.unhcr.org/uk/news/latest/2004/9/4135e9aa4/unhcr-seeks-progres-refugee-registration.html

who collectively (since 2005) partnered on a similar software package around the label, Child Protection Information Management System. Primero, the user interface designed by Quoin, is built on top of this (Maitland 2018: 150). Another data sharing initiative is RAIS (Refugee Assistance Information System) which is used by UNHCR in Jordan, Lebanon, and Egypt (Maitland 2018). Meanwhile, biometric registration has rapidly become the norm for humanitarian conduct in camps, following on from the U.S.'s post-9/11 introduction of the US-VISIT Program (Ibid). While this only became standardised practice across UNHCR operations in 2010, Maitland unveils how the vision of biometric refugee registration traces back to 2001, when the Dutch government and HSB Netherlands integrated existing registration databases with digital fingerprinting, as a part of 'Project Profile'. By 2013, 'one million fingerprints and 500,000 iris records' had been gathered (Maitland 2018: 72). The current tools used to this end — BIMS and Global Distribution Tools — were developed and deployed in partnership with Accenture in 2014, and first tested in Malawi, then Chad and Thailand, before eventually being integrated by the Kenyan government.

Information dissemination technologies, on the other hand, purport to provide e.g. information on immigration and resettlement process, access to housing, work, services, education, to displaced populations. At least one of these initiatives trace back to 2006, with FindHello from the Refugee Center,[13] which was set up to aid refugees in navigating work, housing, services, and immigration altogether. While most initiatives with similar remits were set up more or less as static websites, smartphone apps for information dissemination only emerged in recent years. Starting their experimentation with apps, organisations, including the UNHCR and Australian Red Cross, developed 'a day in the life of…' type apps for citizens, designed to bring the experience of refuge to the general public, through what was essentially a role-playing game (RPG). The UNHCR's 'My Life as a Refugee' was announced in May 2012 and is still active on both the Apple App Store and Google Play.[14] Similarly, the Australian Red Cross released the 'And then I was a refugee' RPG app for Android and iOS in 2012, based on the following premise:[15]

> 'Opening in a small village in West Somalia, the first decision to make is, whose path will you follow, Hani or Samaan? Their home and village has been destroyed and they are on the run. The decisions you make will determine the path they take as they try to reach the safety of a refugee camp' (Australian Red Cross 2012).

[13] https://findhello.therefugeecenter.org/
[14] https://mylifeasarefugee.org/index.html
[15] https://www.redcross.org.au/get-involved/learn/school-resources/refugee-experience-app

At some point, the focus shifted away from developing apps that inform citizens about the plight of refugees, towards developing apps specifically *for* refugees and displaced populations. Perhaps one of the most well-known of these, SignPost, and the refugee.info app,[16] a collaboration between the International Rescue Committee and MercyCorps (not to be confused with the refugee.info groups which, while folded under the same structure as SignPost, offer a different service altogether), was set up as a digital information dissemination response to the refugee "crisis" of 2015, with the remit of providing basic info along routes of transit. With funding from private sector organisations, including Google, Cisco, Microsoft, and TripAdvisor, the project's scope expanded as 'information needs changed' in the face of the EU-Turkey deal that was put into place in 2016,[17] and largely set up to restrict the number of asylum-seekers coming into Europe (Betterplace 2019). An informant in a leading position on the SignPost project explains that 'there were huge information blackouts and we [SignPost] were the only information source trusted at the time'[18]. The refugee.info app mostly pushes out static information in multiple languages; information which is mirrored from a Facebook page managed by the SignPost team, allegedly serving 1.5 million people across 8 different languages (with the caveat that this number is extrapolated from the number of followers, not necessarily the number of individuals who have actively benefited from the service).

Even in cities, for post-resettlement contexts, a number of similar initiatives have been emerging. During early doctoral fieldwork in Berlin, a mapping exercise (based in part on a previously catalogued database by Betterplace Lab in Berlin) of the digital refugee initiatives in the city identified 70 of such initiatives (a large portion of which had been established between 2015-16). With a self-identified remit to address issues as diverse as information dissemination for orientation for new arrivals, to job-matching, language learning, and housing, these technologies seemingly offered to extend access to "integration" for newcomers. These initiatives were driven in large part by a combination of volunteers, technologists, and civil society organisations (CSOs), with the most popular of these having obtained funding from actors including not only the German Federal Office for Migration and Refugees (BAMF), the UNHCR, but also Facebook, Google Startups, and Salesforce. According to a recent Betterplace Lab (2019), between the second half of 2015, and the second half of 2016, projects were emerging weekly, at times almost averaging daily startups, before tapering off in the latter half of 2016. The report attributes the sudden decrease in initiatives to a dimming of public and media attention to the issue and a decrease in the number of arrivals — due

[16] http://refugee.info/
[17] Interview, Kelsey, January 2020, online.
[18] Ibid.

in part to an agreement made between Turkey and the EU in March 2016' (Betterplace 2019: 9). As the narrative of 'Wilkommenskultur' dimmed, the field of refugee tech consolidated; the ones that remain, have tended to be either entangled with municipal governance (see 'Integreat' and 'Handbook Germany'), or with big tech company CSR strategies (e.g. Salesforce's investment in 'Jobs4Refugees', Google's investment in SINGA, and Facebook's investment in 'ReDi School').

Some of the technologies straddle both information solicitation and dissemination, as is the case with connectivity initiatives (which both facilitate access to information, and gather user information, simultaneously), digital cash/voucher systems, and digital identity initiatives. MercyCorps, Cisco, and Google have worked on providing WiFi connectivity along routes of refuge, while the World Food Programme and the UNHCR have partnered with several technology companies for food distribution in Kenya, Rwanda and Jordan, including M-PESA, IrisGuard, and Palantir. According to Maitland 'the collaboration began not as a digital voucher or cash program, but as a biometric system to augment a barcode-based ration card system' (Maitland 2018: 154). In 2015, the partnership launched a digital voucher trial known as 'Bamba Chakula'. It worked as follows: upon biometric clearance, funds would be passed to an M-PESA account, which could then be used to purchase goods and services in the camp. Similarly, in 2016, the World Food Programme in Za'atari deployed iris scanner tech ('EyePay' by IrisGuard) for access to debit (Ibid). However, as Tazzioli's research has shown, the claim that these cashless programmes to support refuge generates greater independence is a fallacy. For example, 'only asylum seekers who accept accommodation provided by the UNHCR or the Greek authorities are entitled to this financial support', disqualifying those who choose to live in closer proximity to communities of their choice in e.g. unofficial camps (Tazzioli 2019). Furthermore, Tazzioli emphasizes that the often protracted nature of refugee presence in camps in Greece, coupled with severe restrictions on who qualifies for the cashless programmes, and where said funds can be spent, demonstrates that any marginal financial means that might have enabled them to move onwards towards Europe, are effectively cut off.

3.3. The Digital Periphery

In this section, I sketch the *digital periphery*. Herein, I demonstrate how practices of 'categorization' and 'containment' work together on peripheral subjects and via discursive terminologies like 'refugees', 'Black', 'development', and 'big data'. In doing so, ICoTs use the digital periphery to produce sites of control and value extraction. The digital periphery matters in three ways, namely in terms of 1) techno-development, 2) techno-space, and 3) techno-government.

3.3.1. Techno-development

Techno-developmentally, the deployment of modernization tropes by technology actors legitimates their techno-political interventions in the lives of the deserving *others*. Herein, categorization occurs through the iconography of an essentialized and non-agentic grouping of people, in the name of whom experimental digital interventions are iterated. The political grouping is virtually contained — or "sandboxed" — through the intervention itself. The intervention enables the tech actor to extract the raw materials needed to develop further products, i.e. data (Fejerskov 2017; Thatcher 2016; Benjamin 2019; Zuboff 2019), and; it drives financial capital from philanthropic actors, venture capitalist, humanitarian actors and governments to the tech actor, who intervenes on their behalf.

Until recently, the digital world was understood to have been shrouded in layers of immateriality, significantly stifling not only our ability to expose how power operates in cyberspace, but also dismissing it as inconsequential to "real" space. As the public dualism between "real" space and cyberspace came undone, e.g. during the Arab spring, technology actors increasingly came to situate themselves more outwardly as operators of political space. This came on the back of two major developments: first, the emergence of free software activists (Chan 2013), and; second, the accelerated growth of Silicon Valley technology corporations. The former was eventually either formalised or co-opted into the latter, with technology corporations increasingly positioning themselves as political stakeholders. The distinction between the 'hacktivist' and the Silicon Valley giant, increasingly blurred, as Palo Alto adopted the language of emancipation to host and sponsor 'hackathons', allegedly towards social-justice-oriented goals. Thus, the hackable crisis was born.

We see this, increasingly, as actors with stakes in the tech world veer into the world of crisis and humanitarian management. One such example is the organisation known as Techfugees, launched by TechCrunch's Editor-at-Large, Mike Butcher, who founded and chairs the organisation in the wake of Europe's refugee crisis. Articles featuring Techfugees with titles such as 'Hacking the Refugee Crisis'[19] are not uncommon. In a Verge article from 2016, Techfugees' founder, Mike Butcher, lays out his plans for Techfugees as the great synthesiser, bringing 'the tech community together, at least in Europe, to address this situation in the ways I know they are capable of' (Bhattachariya 2016). Already in 2016, the organisation became the meeting place for agencies like the UNHCR, UNICEF, the Red Cross, as well tech companies, including Google Startups, which remains a large sponsor of Techfugees today. Butcher describes how areas ranging from housing,

[19] https://www.theverge.com/2016/4/17/11446268/techfugees-refugee-crisis-europe-syria

integration, and education, will be tackled through technical expertise, delivered at the different 'chapters' of Techfugees (Bhattachariya 2016). The organisation espouses a techno-deterministic modernisation narrative, purporting to exist 'to empower the displaced with technology', with 'many technology businesses and entrepreneurs [having] expressed an interest in helping non-profit organisations to automate their processes' (Wasik 2017). As a vocal self-identifying "refugee tech" organisation, Techfugees appears resolute on positioning itself as a governmental interface between Silicon Valley and migration politics — in attracting funding and support from both tech corporations, governments and grant bodies alike, all-the-while operating as an award-body for refugee-tech related products, the organisation has positioned itself as a mediator in the so-called crisis, and as a spokesperson for refugee needs. In their latest 'Hack' hosted at Google HQ in Denmark, the Copenhagen branch of Techfugees (ironically the state with some of Northern Europe's toughest asylum, immigration, and integration policies) aims to '[hack] social inclusion for and with displaced people',[20] framing a question of political will in terms of technical capacity.

Yet the organisation is only the symptom of greater transformations in how the refugee crisis has been treated, discursively, with e.g. French President, Emmanuel Macron, partnering with AirBnB's recent 'Open Homes' initiative, to match refugees with housing; the sixth nation to do so, in addition to the US, Canada, Germany, Greece, Italy and Spain (Wasik 2017).

To understand the precursor to the convergence of the technology and humanitarian sector — of which Techfugees is one manifestation — we have to look to changes Chan (2013) documented in her observations of the Free-Libre and Open Source Software (FLOSS) community. In *Networking Peripheries* (2013), Chan documents how the 'highly skilled information class' that made up the FLOSS community, came to be at the centre of a political awakening in the tech world: 'if geek culture and hacker practices had once appeared abstracted, obscure, and separate from broader social concerns, by the turn of the century such social distinctions no longer seemed to hold' (Chan 2013: 118). The activities carried out by the FLOSS community became a battleground for western liberal norm diffusion, with the 'the right of free speech, assembly, petition, and a free press, […] the stability of property and especially IP law' taking centre-stage in the resolve of hacker communities (Ibid), not too differently from how hacker communities, today, are turning their attention to migration. Clashes between government and global hacker groups and their politics, became commonplace (e.g. the emergence of the Anonymous hacker collective), as hacker communities expanded their focus from advocating for free and open software, towards the '"real space" realm of established politics'

[20] Techfugees Denmark event: bit.ly/TFDKevent

(Ibid). In other words, the emergence of the "political" hacker came to increasingly represent an alternative to politics as usual; a potentially fundamental shift in power relations and governance (Ibid). How the FLOSS community has managed to remain politically salient in varied socio-cultural contexts, has been a particularly pressing question; Chan asks 'what, indeed, have been the forces that have allowed its terms and stakes to be fought for and struggled over varied local terrains - and through what interests that extend beyond concerns of the western liberal order, who originally represented it development base?' (Ibid).

At least part of the answer is found in the co-optive strategy of corporate technology giants, who underwent a 'dramatic self-transformation' in an effort 'to maintain dominance' (Ibid). A prominent example of this is Facebook Inc., which according to Hoffman's analysis, discursively constructed a 'kind of cosmology that places the users, commercial actors, and Facebook shoulder to shoulder — a view that flattens and obfuscates the incomprehensibly large differences in power between these different players' (Hoffman at al. 2016: 214). Facebook was only one amongst a handful of tech giants, whose libertarian constitution, paved their way to the global stage in not only the tech industry but into the world of activism and politics. Ghonim's infamous phrase in the context of the removal of Egypt's Mubarak is indicative of the zeitgeist created by the moment: 'If you want to liberate a society, just give them the "Internet"' (Toyama 2015: 65). Here, the internet — and by extension, technology — came to be framed as a neutral space, untainted by power dynamics and corporate interests. Since then, Silicon Valley giants have ventured far and wide, often with one foot in humanitarian affairs, and another in development. Beyond Facebook's internet.org and Libra initiatives, Google has launched connectivity projects ranging from free wifi in and around refugee camps (see Signpost and refugee.info) and beaming internet to rural areas using weather balloons via the sister-company, 'Loon', to installing massive subsea level internet cables, connecting Europe and southern Africa. Urban solutions are provided via Sidewalk Labs, while Microsoft and Accenture have partnered to bring blockchain-based identification to refugees worldwide who are unable to produce legal proof of identity, via the ID2020 project, not to mention the partnership between Palantir and the World Food Programme. The "hackable" crisis was all but unexpected.

3.3.2. Techno-space

Techno-spatially, the digital periphery is an attempt at transcending the spatial bounds drawn around "peripheral" geographies (Wallerstein 2004; Samin 1974; Rostow 1959), by identifying people marginalized by borders and layering a digitally-mediated symbolic enclosure on top of them.

Foregrounding technologically-mediated marginality in racial capitalism opens up for the possibility that even the most well-intentioned interventions are contingent on this particular type of racialism. It should be unsurprising, then, that ICT4D since the 20th century — some 300+ years after the emergence of racial capitalism — is reaffirmed by the iconography of racialised under-served others. Much like the dawn of humanitarian photography, computational images or representations of marginalised subjects, produce iconographies, or perversions, that are often less obvious but serve as 'the more powerful […] disciplinary function of surveillance' (Benjamin 2019: 110). They tell us more about what characteristics and behaviours the hegemonic power would *like* the particular subject to have, rather than the actual embodied characteristics and behaviours. E.g. every time an app claims to be helping refugees through fostering their "entrepreneurship", it is also telling us that it would prefer that said user be more "self-reliant", engage in more precarious and individualised forms of labour, independently of the state. When a person is asked to sign up for a biometrical enabled digital ID, they are being asked to give up the possibility for invisibility; in exchange for your daily bread, you must make yourself fully known to authority (or risk being conceived of as 'illegal', as per the UID case in Aadhar) (Benjamin 2019). Equally, when we are convinced that social justice can be accomplished through engineering activities, the possibility for dissent and contestation is eroded. The 'New Jim Code', as Benjamin writes, is further strengthening racist structures, which 'not only marginalise but also forcibly centre and surveil racialized groups that are "trapped between regimes of invisibility and spectacular hypervisibility", threatened by inclusion in science and technology as objects of inquiry' (Benjamin 2019: 119).

Equally, the language of inclusion in STEM has given way for a superficially "decolonial" undertaking, with calls for diversification of engineers, companies, and a range of different software. While these conversations are certainly an occasion to challenge workplace discrimination, they also distract from the question of whether said technologies, software suites and companies should exist in the first place. Benjamin gives an example of how this plays out in practice, detailing how a group of researchers from Georgetown law, analysed the use of facial recognition by police departments across the US on affected communities:

> '[…] these software programs are used by police departments all over the country; in those departments "digital eyes watch the public", comparing individual faces in real-time to "hot lists" that are filled disproportionately with Black people — and these also happen to be the least recognisable figures in the world of facial recognition software' (2019: 111)

Benjamin presents the scenario in an intervention meant to emphasize how the combination of a database biased towards black and brown bodies, and the poor ability of algorithms to pick up these

bodies, augments and encourages the arbitrary policing of people of colour. This presents a dangerous concoction when combined with an analysis of these systems as a neoliberal cost-cutting policy, as per Brayne and Christin (2020). On the other hand, if the facial recognition algorithms had been good at detecting black and brown bodies, they risk augmenting existing discriminatory policing practices, with more targeted, and potentially even deadlier, outcomes, especially for communities of colour.

Computational representations of race are perversions because they double-down on an essentialized ontological understanding of race, which holds that the more data we gather, the greater our ability to accurately distinguish between arbitrary phenotypical groupings of people. E.g. Benjamin talks about how the company Diversity Inc ‘has delineated over 150 distinct ethnicities and “builds” new ones for companies that need to reach a subgroup that is not already represented in their database’ (2019: 29) — in similar and less direct ways, technologies for migration contexts are engaged in practices of generating attributions, whether through the solicitation of data from displaced populations or through insisting on information provision in particular ways, with particular languages, through particular channels.

In fact, in the digital age, the subjects of our *digital periphery* are not required to exist, per se; by packaging words like ‘refugees’, ‘Black’, ‘development’, and ‘big data’, our digital periphery produces a rationale capable of capturing value from anywhere the tech sector can justify having a presence, irrespective of demonstrated needs. The iconography of a non-agentic *other*, whether in the urban margins of the Global North or South, or refugee camps, sustains the testing, continued iteration, and production of technology products, directing vast amounts of venture capital, philanthropic, government, and humanitarian funding to sites that have effectively entered states of digital exception.

3.3.3 Techno-government

Governments and institutions rely on these interventions, symbiotically, to identity and control said *others*, who are in turn made dependent on such systems for access to a bare minimum of information, goods and services. These developments can in many ways be considered manifestations, advancements, and continuities of the modern passport system: ‘Since the birth of the modern passport system in the early twentieth century, individuals have come to depend on state documentation to legitimise their identities — a process that often denies undocumented persons state protections and leaves them vulnerable to abuses’ (Kingston in Maitland 2018: 37). In other words, the normalisation of passport requirements introduced a distributive problem, where the physical

ownership of the passport itself came to be accepted as a 'tangible product of functioning citizenship' (Ibid), and thereby, a means to claiming rights and protections. In the digital age, technologists increasingly seek to encode documentation into the human body, introducing near-immutable forms of stratification that encode marginality and recasts the stateless as digital *others*. Stenum, for instance, writes on the difficulty of benefitting from strategies such as 'flexible identities' and 'de-identification', used predominantly to circumvent deportation orders, or facilitate safer transit, when documentation of personal identification is encoded, biometrically, through e.g. blockchain-based digital ID systems (2017). For the displaced, the ability to navigate visibility and invisibility can be a matter of life and death. Yet, public and institutional imaginations have remained captivated by technical solutions to the refugee problem, starting from arguably the most prominent of migration-related international agencies, namely the United Nations High Commission for Refugees (UNHCR), which now houses an Innovation Service (2018). A central logic underpinning its existence is the insistence on "self-reliance" as an issue central to the plight of the refugee (UNHCR 2016). With bodies like the UNHCR advocating for private sector solutions to what is largely a problem of political will — placing the onus on the individual refugee to 'improve their own lives' (Ibid) — it is no surprise that technology corporations have become significant actors in mobility governance. Companies, including Facebook, Google, and Cisco, have in the past four years worked on several infrastructures for connectivity (Schmitt et al. in Maitland 2018: 116).

Around the same time, Europe saw a meteoric rise in the number of digital initiatives purporting to empower refugees (Betterplace Lab 2019). This comes following nearly two decades of efforts invested in high-tech "smart" border systems (e.g. EURODAC & EUROSUR as extensions of Frontex) in the aftermath of 9/11, and at least a decade of techno-humanitarianism in camp contexts and along routes of transit (see Tazzioli 2019). The increased digital presence of refugees, and migrant populations in general, has meant that it has become easier to track refugees by benign actors, such as keenly interested academics, NGOs, and rescue coordinators, as well as more sinister actors including border security who intercept migrants between borders (or deportation agents including but not limited to ICE). Researchers have been critical of the adoption of digitised borders by governments in Europe, designed to help pre-empt mobility. From mathematical formulas that neatly calculate the numbers of refugees any given European country should receive (based on variables including the number of asylum applications to the country, unemployment rate and GDP) (Friedman 2015; Altemeyer-Bartscher et al. 2016), to technical innovations that surveil mobility (Broeders and Hampshire 2013), there is no shortage of examples as to how sociotechnical imaginaries have shaped and determined refugee destinies (Jasanoff and Kim 2015).

Although the practice pre-dates 2001 (Broeders and Hampshire 2013), there has in recent times been a growing body of literature highlighting the practice of border digitalization — an effort to remote control prospective migrants in the face of 9/11 (Ibid). Digital technologies have often served as the symbolic front for the race to the bottom on stricter immigration policy in Europe (Dijstelbloem and Meijer 2011); a political strategy through which governments can claim that they are proactive in their management of borders:

> 'For hard-pressed immigration authorities, digitisation promises efficiency and cost-savings; for port operators and passenger carriers, lighter-touch checks and faster transit times improve customer satisfaction, not to mention more time in the shopping malls that airport departure zones have become; and, for the ICT industry, digitisation means lucrative government contracts' (Broeders and Hampshire 2013: 1214)

According to Broeders and Hampshire, there has been a steady trend towards governments attempting to exert a kind of transgressive border control available at airports, far beyond their domestic reach. The combination of 'pre-emptive mobility governance', which endeavours to keep 'unwanted travellers as far away from the border as possible' (through 'green-listing' and 'black-listing') (Ibid), with new ways of physically measuring and intervening in the movement of refugees and asylum-seekers alike, these '[…] forms of technology and computerization [...] are not just related to processing information, but [...] are used to identify and verify, by intervening in the human body' (Dijstelbloem and Meijer 2011: 6). In other words, 'control of citizens, travellers, migrants and illegal aliens is coming closer to their bodies' (Ibid), generating what Stenum (2017) refers to as the 'body-border'.

In other words, a techno-governmental industrial complex has emerged surrounding the control of migration, broadly, where digital technologies (e.g. whether through e-passports, facial recognition, and biometrics) increasingly determine everything from whether individuals should be allowed entry through particular borders, or whether they should be detained and deported; whether they can access goods and services in refugee camps, or whether they will live precariously; whether they will be able self-determine, or whether they will be policed into conformity; to whether they will be granted rights, conditionally, or rendered digitally determined pariahs.

3.4. Conclusion

This framework illustrates how digital practices of categorisation and containment serve the continued function of suspending agency for subaltern bodies and places, through the digital

periphery. As the subsequent empirical chapters will demonstrate, practices of categorization and containment weave together as disparate places as refugee camps — widely established as being rife with apps, digital and biometric ID and surveillance systems — with cities where the effects of urban technologies on marginalized migrant populations remain under-explored. As this thesis demonstrates, the transformation of cities like New York City and Berlin into the digital periphery, not only sustains technological experimentalism, data extraction, and the mobilization of vast amounts of capital for profit but importantly drives symbolic and political capital from governments and humanitarian actors to tech actors (in exchange for its products), who are, consequently, increasingly engaged in governance.

While critical technology discourses have tended to locate any potential source of inequity or oppression in the technology itself, ICoTs used in migration context demonstrate what remains an underlying and inseparable and mutually constitutive entanglement between race, borders, and migration, that sustain racial capitalism. Contemporary practices of bordering are, in other words, digitally mediated, and largely disaggregated. Though they correspond to colonial geographies and asymmetries of power, they transcend the geographical bounds conventionally drawn around the "periphery". Even as much of the world launched into the era of independence and decolonisation, modes of categorization and containment continued the process of enclosing formerly colonised populations. Undergirded by the rapidly intensifying ideological hegemony of modernity, tech actors engineer digital states of exception through their mediatory role in the framing of crises, which operate according to racial logics (and thrive on the opacity provided by distractions from structural considerations). The nature of capitalism today *appears* unique and fundamentally rooted in rapid technological transformations. The roots of its oppressive nature, however, can be found in the undergirding logic of racial capitalism to discipline mobilities.

Chapter 4 | Unsettling Mythologies of "Welcome"

In this chapter, I introduce the historical context to my empirical chapters. I outline anti-immigration laws and policies in New York City, to deconstruct Ellis Island as the romanticized ideal of sanctuary. Specifically, I unravel how processes of assessing arrivals into the port were subsequently disaggregated into every-day urban life – a condition that made the city ripe for the digital anti-sanctuary. It also explores the changing immigration policy landscape in Berlin and Germany, drawing attention to what is concealed by the much popularised 'Wilkommenskultur'. In particular, it notes the shift from 'foreigners law' to 'immigration law' against the backdrop of an ageing workforce, and the inextricable relationship between the tech sector and immigration policy in Germany, drawing particular attention to the 'Digital Skills Crisis' in the EU, broadly (Stolton 2018), and the push for competitive leadership in AI and technology. I pay attention to similarities and variations across my two field sites in terms of the interplays between xenophobia and liberal performances of "tolerance", assimilation versus – its purportedly softer alternative – "integration", the relationship between migrant and the nation in terms of economic production and race. This chapter ultimately traces how foreclosures on migration and citizenship are re-articulated and disaggregated over time, creating the conditions for the emergence of the digital periphery, which re-articulates and reinforces historically salient notions of otherness and race.

4.1. Institutional Decay in the Sanctuary of New York City

New York City is one out of 20 cities with over 1,000,000 foreign-born residents (Price and Benton-Short 2007). The MPI also counts it as one of the most 'hyperdiverse' cities, next to cities such as Toronto, under the following criteria: 'at least 9.5 percent of the total population is foreign born (this is the average percent of foreign-born stock for developed countries according to the United Nations)', 'no one country of origin accounts for 25 percent or more of the immigrant stock', and; 'immigrants come from all regions of the world.' (2007: 112). Moreover, New York City's rich history of immigration sets it apart from other hyperdiverse cities. In many respects, New York City is the polar opposite of many European cities — even in the 17th century, under Dutch rule, purportedly '18 languages were spoken in the streets' (Foner 2014: 29). Following the Civil War, there has been steady increases in immigration to the city. Between 1790 and 1860 alone, the population rose from 33,131 to 813,669, and then again to 7.9 million by 1950 (Glaeser 2005). While this is attributable partly to the 'declining transatlantic transportation costs' (Glaeser 2005: 8), it is

the 'immigrant-specific social and political infrastructure that made, and continues to make, New York a magnet for immigration' (Ibid):

> 'large communities of immigrants from specific countries [that] allowed new immigrants to come to New York while continuing to speak their own language [and] suppliers provided commodities that were closer to those […] consumed in their home countries' (Glaeser 2005: 18).

New York City's immigrants — and their subsequent descendants — have historically played 'the role of 'hosts' to […] new arrivals, passing on lessons about New York and the United States, and shaping newcomers' thinking and actions' (Foner 2014: 42). Anchor-communities are in many ways the reason for the City's success in attracting and keeping newcomers. That is not to paint a romanticised image of the lives of the city's immigrant populations, who continue to live in a fraught state; structural marginalisation across racial lines looms large — Black and South Asian communities continue to be subject of heavy surveillance, and deportations of Pakistani residents, following 9/11, and now Latinx communities, in the wake of the Trump administration's border wall, have been on a steady rise. As chapter 5 will explore, the transformation of New York City into a site of digital migration control, and the transmutation of its vulnerable migrant populations into the digital periphery, has been possible owing largely to the neoliberal tactics deployed by the federal government. Targeted institutional decay has been an important means by which the city as a sanctuary has been threatened. The Trump administration's incessant legal battles to maintain its current regime of immigrant violence — including but not limited to family separations, detention under inhumane circumstances, and deportations — while significant, have not always been successful, and have to some extent served as distractions from less obvious policy changes with devastating consequences for institutions key to immigrant survival in the city. At the core of this, is the systematic and deliberate obstruction, and subsequent defunding, of Voluntary Agencies (VolAgs) in charge of providing 'Reception and Placement (R&P)' services in New York City.

On January 28th 2017, President Trump signed Executive Order 13769, otherwise known as the 'Muslim ban' (Amnesty International 2020) banning individuals, including refugees, from Muslim-majority countries including Iran, Iraq, Libya, Somalia, Sudan, Syria and Yemen from entering the United States for 90 days. The order also brought an effective suspension to the refugee resettlement programme for 120 days, while slashing the determination for annual refugee intakes by more than 50%. In the fall of 2018, I find myself in the offices of an RRO in Flatbush, Brooklyn, surrounded by caseworkers chaotically scrambling to find avenues for affordable housing for refugees, in addition to searching for supporting evidence of their capacity to resettle refugees. Not

only had the Department of State issued strict accommodation guidelines that had to be met for a housing option to be considered legitimate (requirements that were all but impossible with the funding allocated per client, in New York City), but had also determined that the USCRI[21] would be receiving a significant cut in funding, owing to its inability to house their targeted number of refugees. The reason for the decreasing number of resettlements? The so-called Muslim ban, stifling the number of refugees able to enter the United States. USCRI's grant loss, in turn, had a compounding effect on the RRO I was embedded within at the time, CAMBA, who experienced the literal shrinking of sanctuary space first-hand. Without funds for R&P, CAMBA would no longer be eligible to provide resettlement services and faced the prospect of having to not only turn away clients but also having to potentially manage an increasing number of asylum seekers and undocumented immigrants, whose safety could not be guaranteed. Rather than an unfortunate bureaucratic mishap, this appeared to me as an acute example of targeted institutional dismantlement.

In many ways, the U.S. refugee programme has always been in a state of dismantlement; created for the purpose of being destroyed. This is where my engagements in Brooklyn began. Just a couple of miles south of Crown Heights, near the intersection of Flatbush and Church Ave, the pathways of Caribbean, black, and foreign-born immigrants, who migrated to the area in the 1980s, cross (Kasinitz 1992). Here, you will encounter 'the largest concentration of undocumented immigrants' in Brooklyn.[22] Unsurprisingly, it is also home to one of the largest RROs in the borough. Originally a merchants' association, CAMBA was founded in Flatbush in 1977 and began economic development activity with a focus on the immigrant community in 1982, just as the area was at the height of a major demographic transformation (Ibid).[23] I started working at CAMBA as an in-house researcher and trainee caseworker during a time when they were being assessed for funding. The devastating impact of Trump's Muslim ban meant that New York City — among a host of other Sanctuary Cities — had been identified as 'areas of concern' by the DOS. This, I am told by a key informant, Anita, is code for at once failing to deliver on resettlement targets, while at the same time being considered hotspots for refugees and other vulnerable immigrant populations. 'After September 11th, nobody arrived', Anita tells me. Before that, at least 600 refugees had arrived from Kosovo in 1999. Applications were quickly approved as aeroplanes were filled and flown into New York, with RROs and, somewhat surprisingly, the military working together to check people in. 'The government has historically created good programmes, but the administration – in its failure to succeed in courts

[21] In New York, the U.S. Committee for Refugees and Immigrants (USCRI) serves as the VolAg in charge of Reception and Placement (R&P)
[22] Field note, Anita, December 2018, Brooklyn
[23] https://camba.org/about-us/history-of-innovation-2/

[in curbing immigration] – challenges resettlement through altering and adding rules to the programme'.[24] Anita explains that there's a requirement to resettle 100 refugees over the financial year to qualify as a service providing VolAg for R&P. Consequently, this is filtered down to the USCRI's partnering RROs, who, due to the pressure faced by their VolAg, are forced to enter into competition with one another, where there was previously cooperation (e.g. between CAMBA, IRC, etc.).

However, with the administration's determination of 26 cities as areas of concern, it is clear that the defunding and decrease of refugee service infrastructure is deliberate, and that New York City is just one of many targeted cities. Dino, Anita's deputy – himself a former refugee from Bosnia – notes that they have few, if any, tools at their disposal to fight Trump's 'rising invisible wall'.[25] 'His [physical] wall is getting smaller. So, this is his contraction strategy' — in other words, his wall is a distraction shrouded in layers of more subtle transgressions. The ongoing reduction of some 300 RROs to merely 175, combined with the administrative hurdles of strict housing requirements, and the introduction of more invasive screening measures, including new technologies like DNA testing, transforms individuals fleeing in search of a better life to – in Anita's words – 'pipeline people'. As pipeline people, refugees, asylees, and undocumented immigrants alike become de facto '[…] foreign policy escape-valve[s]' (Ibid), kept in political suspension through their permanent containment in either the bureaucratic process or through perpetual movement to escape said process. As this chapter attempts to show, targeted institutional dismantlement, then, involves the material and symbolic capture of fugitive subjects.

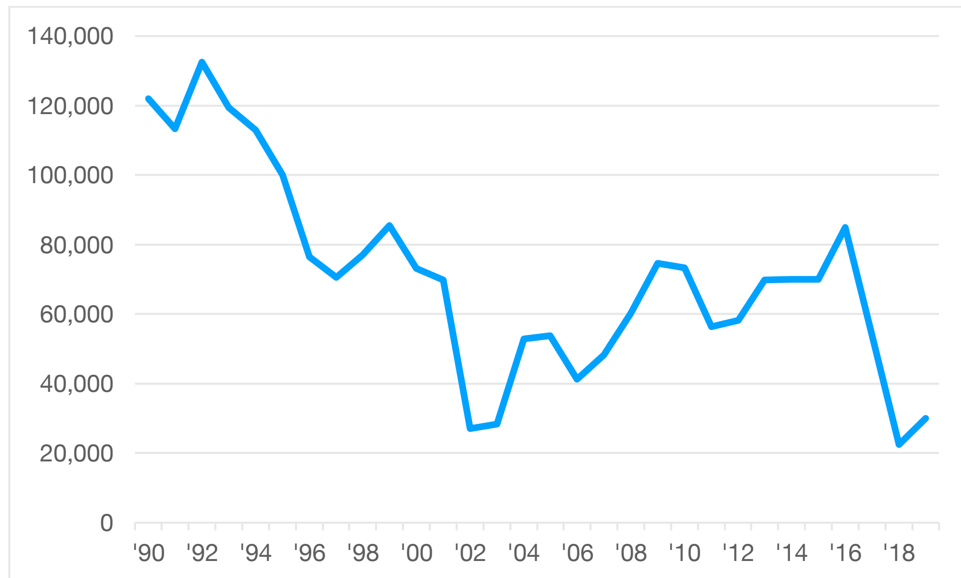
In anticipation of these developments, CAMBA had found itself preparing by turning its focus away from refugees, towards asylees. While fewer people were certainly able to come through via the refugee programme, an increased number of individuals were in turn forced to find alternative pathways of refuge. While not strictly in compliance with what constitutes R&P services, CAMBA had to figure out a way of tending to this increasing population: So that's, that's the challenge. It's a very difficult question, I mean... hard to answer..., the reason is if you come to the US airports or US port. And you claim asylum... You will be put in detention'— Yunus, a caseworker I came to work with closely, tells me on one of my first days at CAMBA.[26] Originally from Rwanda, Yunus had made it to the U.S. — Atlanta, specifically — just before the window closed in 2000: 'Yes, I came as a refugee through the IRC. I came in 2000, I started working with them right away.' Yunus explains

[24] Ibid.
[25] Field note, Dino, December 2018, Brooklyn
[26] Interview, Yunus, November 2018, Brooklyn

that the uncertainty around the availability of jobs, as well as gaps in his experience, led him to apply for the position of Arabic assistant with the International Rescue Committee (IRC). 'They were going to resettle a huge number of Iraqi refugees, and they offered me a job. I didn't have any other job and didn't have any experience; when I left I was coming straight from school so… I'll take it! And from there I became a case manager'. When Yunus first arrived in the U.S., he was placed within the Burundi community for housing; with few, if any Rwandans in Atlanta at the time, it was important to be close to an anchor community who spoke the same language. Yunus explains that despite the difficulty, they were obligated to house him: 'As a free case,[27] they […] have to find you housing with furnishing, food, everything. So, for the free cases, you mostly depend, for everything, on an agency. For a U.S. tie case,[28] on the other hand, the agency provides only basic services, the 'tie' provides housing and some transportation.' Yunus worked at IRC in Atlanta for four years before moving to New York. While we have long dispelled the myth that there was ever an American golden age for immigrants (especially the undesirable kind), Yunus and some of his clients were part of the 69,886 refugees admitted the United States in the year 2000 before admissions halved the subsequent year (Figure 5.1.). Even more significantly, refugee admissions had peaked at 122,066 in 1990 before dropping steadily every year, arriving at a meagre 22,491 admission by the start of this research in 2018. In some respects, Yunus and his contemporaries had arrived just before the hypothetical window had abruptly slammed. They had escaped the increasing hard borders of the hostile immigration environment while finding themselves increasingly subject to invisible ones.

[27] Someone arriving as a refugee without a connection in the U.S.
[28] Someone arriving as a refugee with a connection in the U.S.

Figure 4.1. Refugee admissions in the U.S. 1990-2019



Source: Department of State/RPC.

Others were not so lucky. During one of my 'client days' at CAMBA (designated days for clients picking up checks and having appointments with their caseworkers), I met with Abdo, a Darfurian refugee who had spent the last 8 months in one of ICE's seven notorious detention facilities in California. Certain that his application to participate in the refugee resettlement programme would be rejected, Abdo had no other choice but to find an alternative means of escaping to New York. The alternative, in turn, almost certainly involved ICE. 'I wish there was more focus on detention centres. Detention centres and language learning' — even though Abdo had arrived with a companion, his friend had soon been released; Abdo reiterates that knowing the language was crucial in minimising the barriers faced by pro bono lawyers and ICE agents, an advantage he did not benefit from at the time.[29] In his experience, knowing and not knowing English makes the difference between being in detention for 1 versus 8 months. For a country that does not officially enforce a national language, Abdo, and many others in his predicament, had been subjected to particular immigration status-related turmoil precisely for linguistic reasons — circumstances that ICE did not make concessions for. Acknowledging CAMBA's place in this impossible landscape, Anita catches me after my conversation with Abdo, stressing the authorities' disinterest in socioeconomic success as a measure of successful immigration and integration: 'it's defined by interaction with bureaucracy — you're only integrable if you are yet to integrate. If you succeed, you're no longer integrable, so you're no longer useful'. Anita paints a picture of the immigration process that portrays it as being

[29] Field note, Abdo, December 2018, Brooklyn

fundamentally concerned with capturing, in one form or another, migrant populations; a process with no endpoint in sight: 'Integration, in most cases, is performing the role of an "irregular" — of a transient presence in the populace.'[30]
Abdo's story is not unique. Over the course of my four months fieldwork in the city, I speak to nearly a dozen asylees who report similar dilemmas. In general, refugees, asylees, and individuals in vulnerable immigration conditions, are faced with a Hobson's choice:

i. Apply for the refugee resettlement programme or seek asylum upon arrival at a U.S. port of entry. Either way, the individual has to surrender agency to the disciplining function of the bureaucratic process of the so-called refugee 'pipeline'. Here, the migrant exists as a public charge within the American political imaginary**.** Or;
ii. At the expense of potential institutional support, evade the system through concealment and self-organise. Here, the refugee exists — in the gaze of the state — as a criminal, positioned by default to be apprehended by law enforcement**.**

These dynamics unveil what is at its core a racialised neoliberal control regimes. Going through the official process is a gamble for potential refugees, who may find themselves registered and processed through the official resettlement programme, only to have their case rejected. With a permanent unsuccessful immigration record, the only recourse for sanctuary is precarious, "under the radar", and "illegal". In this sense, the "undocumented immigrant" is very much a political construction, emerging in these gaps of institutional dismantlement. Conversely, in the event of immigration being granted, newcomers are positioned as 'public charges' in the racialised imaginary of the American neoliberal security state, simultaneously scapegoated for their dependence on public services, while constantly in the act of being and becoming 'self-sufficient'.

On Wednesday, December 12th 2018, I learned that CAMBA was no longer allowed to resettle refugees from 2019 and onwards. 'The oldest law in the United States is asylum. America was founded upon asylum-seekers fleeing oppression from the Crown', Anita notes in disbelief during a meeting where the organisation is trying to formulate next steps. This was the first time since the 1990s that CAMBA had involuntarily foregone funding for R&P. Anita, and her team of caseworkers and former refugees, including Dino, Georgiana, and Yunus, were determined to find alternative

[30] Field note, Anita, December 2018, Brooklyn

sources of housing that would adhere to the strict criteria required for eligible resettlement accommodation.[31] I worked with CAMBA during the four months between NYC being determined as an area of concern, and their evaluation for continuing R&P services.

4.1.2. Xenophobic Roots, Tolerant Facades: Deconstructing Ellis Island Romanticism

'Give me your tired, your poor, your huddled masses yearning to breathe free…'. These immortal words, inscribed by Emma Lazarus at the Statue of Liberty, have captured public imaginations about U.S. tolerance and liberalism for more than a century. In January 2018, James Comey, former FBI director under the administration of Donald Trump, tweeted these words in a rebuke to xenophobic slurs made in public by the soon-to-be-former president (Thomsen 2018). Harkening back to an alleged golden era of tolerance and inclusion, the words of Lazarus, however, obfuscate a long tradition of institutional xenophobia, and anti-immigrant sentiment. New York City, home to the poem and Lady Liberty, long-held as the gold-standard for migrant-receiving cities, has nevertheless been a site of aggressive immigration enforcement, assessment and control. While the timing of my presence at CAMBA indicates a historically virulent clampdown on immigration, and in particular, refugee services, the disaggregation of the xenophobic migration control regime through institutional dismantlement in New York can be traced back a century before Trump.

Ellis Island, the port of arrival up until 1954, was a space of continual assessment from the moment of arrival. As immigrants would step off boats and make their way to the arrival halls, they were under surveillance, assessment and processing. Staff would observe new arrivals as they walked up the stairs to the hall, marking 'human defects' upon entry (as described in Bayor's *Encountering Ellis Island*). Physicians would even observe carriage of luggage looking for signs of shortness of breath and cardiac problems; they would scan the crowds for neck sizes for signs of goiter, skin rashes and trachoma (Markel and Stern 2002). These logics observed newcomers as suspicious by default; the policing of their bodies through literal symbols drawn on them is an early form of algorithmic classification, sorting bodies per 1) the demands of American capitalism, and; 2) racial regimes (Robinson in Lubin and Johnson). For example, immigrants were consistently associated with 'germs and contagion' from the late 1890s, into the 20th century (Markel and Stern). In the last few decades of Ellis Island, these logics were, however, starting to disaggregate and find their way past the

[31] Reflective note, CAMBA, November 2018, Brooklyn

physical port and into cities and the national imaginary through emergent anti-immigration laws and policies.

Founded in the city in 1911 as the International Institute, the USCRI (rebranded in 2004) was spearheaded by Edith Terry Bremer and modelled after Jane Addams' Hull House in Chicago (Dunlap and Montalto 1998). The institute was driven under a premise of national and ethnic pluralism, hiring 'nationality secretaries' who were in tune with the 'psychological' unity of different national and ethnic delineation and thus better suited towards supporting different pathways to citizenship (Ibid). This led to the organisation's dissociation from its original home, the Young Women's Christian Association, which was perceived as creating 'a dilemma for the International Institute's growing movement [along lines of] age, gender and religion' (1998: 5). Since its founding, the institute faced many federal threats to its work. Following the Spanish flu, increasingly sophisticated health surveillance tactics were used to asymmetrically target ethnic minorities in New York City (Aimone 2010).[32] The Immigration Act of 1917 instituted a literacy test and increased payments upon arrival, all the while instituting a ban on individuals from 'Asiatic Barred Zones'. By extension, the Emergency Quota Act of 1921 introduced further immigration caps by nationality, while the Immigration Act of 1924 reinforced quotas and barred entry to a list of characteristics that deemed certain individuals as 'ineligible for citizenship'. While fewer immigrants entered the United States between 1924-65, the disease connotation and xenophobic narrative intensified, exacerbated by fear of foreign insurgence and communism (Markel and Stern 2020).

It isn't until the WWII effort brought forward by President Truman, emerging out of his special directive (hence known as the Truman Directive) that a slightly more favourable approach to immigration emerges, and in addition, a guarantee of a certain amount of financial aid for refugees (Zucker 1982). Even then, the Truman Directive's objective was two-fold: establishing the United States as a receiving country of refugees, while also preventing them from becoming a financial burden on the state, or in other words, a 'public charge'. The Refugee Act passes in 1980, not inconspicuously against the backdrop of the rise of neoliberalism and a reinforced emphasis on the 'self-sufficiency' of refugees and immigrant populations broadly (Brown and Scribner 2014).

In 1954, Ellis Island closes – and with its closure, the debut of the first notable border operation beyond the border itself. Operation Wetback saw approximately four million Mexicans, documented and undocumented alike, 'rounded up in factories, restaurants, bars, and even private domiciles and then expelled' (Markel and Stern 2020). Paradoxically, this comes just a decade after

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[32] At the time of writing, the COVID-19 pandemic continues to be used as justification for racialised xenophobic discourse

the Truman Directive, and just three years after the United Nations' 1951 Refugee Convention was signed (albeit not by the United States at the time) [33]. It wasn't until 1965 that the United States purportedly relaxed its attitudes towards immigration, under the Hart-Celler Immigration Act. As the U.S. tumbled towards the neoliberal era, the state was hollowed out, and self-sufficiency at all costs became the dominant paradigm, lest the state interfered, it became possible to imagine a place for refugees and immigrants in the American imaginary. In 1980, the Refugee Act passes, but not without significant backlash (despite the reduced public spending on refugees and immigrants); in the wake of AIDS, nativism was on the rise in the country, and so for the next ten years, the state and cities were given the discretion to exercise formerly exclusionary policies. For example, the AIDS epidemic helped nurture the insistence on restricting state services, including health care, for the undocumented and undesirable. Invasive health screenings way past arrivals were instituted at this time as well, under the auspices of fighting tuberculosis (Bateman-House and Fairchild 2008).

Nevertheless, provisions for granting funds to 'public and private non-profit agencies for initial resettlement (including initial reception and placement with sponsors) of refugees in the United States' does become a reality, as a standardised Reception and Placement programme is established (Refugee Act 1980).[34] Under R&P, the U.S. Department of State (DOS) assumes the role of a creditor to local R&P providers; nine VolAgs across the country are invited to apply for funding towards refugee and immigration services, with each VolAg funnelling the grant to their respective affiliated local providers, or Refugee Resettlement Organisations (RROs) (Darrow 2015). Under this new resettlement regime, the ability of VolAgs to provide for their clients depends entirely on two factors: 1) the amount of funding provided by the DOS (which is subject to a history of successful resettlements in years prior, within the VolAg and its network), and 2) the ability of RROs to resettle and house incoming refugees within their designated communities.

Over a century of xenophobic policies and anti-pauperism, sorting the deserving from the undeserving, gave rise to what I describe as the *Anti-Sanctuary City* in chapter 5. Migration control in the US was disaggregated in concurrence with targeted institutional decay; on the one hand, tightening external boundaries, while erecting internal ones (where there was previously a possibility for marginal reprieve). Although Ellis Island was abandoned, its anti-immigrant logics continue to shape the immigration landscape in New York City today.

[33] United States Holocaust Memorial Museum
[34] Department of Health and Human Services, Refugee Act of 1980.

4.2. Negotiating the “Foreigner” in Berlin

‘The War is Over – Syria Needs You’ reads a poster on a bus stop near Alexanderplatz, in Berlin. The poster is one of many plastered to legitimate ad spaces by the so-called Identitarian Movement (Identitäre Bewegung). While the organisation has been placed under heavy surveillance by intelligence services and suspected of being unconstitutional for its supremacist activity (Brady 2016; Reuters 2019), it is by no means fringe to neither the German nor the European discourse on refugees and migrant broadly. Since 9/11, European narratives undergirding racial discrimination and differentiation have been ‘overwhelmingly cultural’, and based on ‘flaunt ethnoracial categories decided on the basis of religious identity (“Muslims” being grouped as a de facto race), national or geopolitical origins (“Middle Easterners”), or members in a linguistic community (Arabic-speakers standing in for Arabs)’, prevalent particularly in transient spaces such as airports, across news media outlets, and consistently in the context of refuge (Heng 2011). The question of the non-assimilability of the “European Muslim” and the “refugee” has come to the fore, at a time when Europe, and in particular Germany, is once again in need of a young, highly skilled labour force. By 2015, however, 81% of the distribution of asylum applications in Europe amounted to the following: 35.2% in Germany, 13.9% in Hungary, 12.4% in Sweden, 6.8% in Austria, 6.6% in Italy, and 5.6% in France (Altemeyer-Bartscher et al 2015).

In the 1960s, ‘politicians and scholars alike’ had ‘hailed the transfer of “unemployed” workers to labour-demanding regions as precisely the intergovernmental program needed to solve Europe's economic problems' (Rhoades 1978: 553). Notably, since 2000 Germany has experienced a particular shortage of labour in the technology sector, sparking the debates that subsequently led to the formation of the Migration Act of 2005 (Gesley 2017). When a pilot programme aimed at hiring 20,000 ‘highly qualified workers from abroad’ received under half the target in applicants, however, ‘the political elite began to argue that potential highly skilled immigrants were put off by Germany’s insistence on preserving its pure ethnic national identity’ (Anil 2005: 460). Yet, without immigration to make up for the shortfall of some 15 million workers by 2050, due to a shrinking, ageing and inappropriately skilled population, the country would stand to experience economic turmoil and a slimmed-down (if not none) chance of ever being a competitive actor in the IT industry (Ibid).

Nearly two decades on, this remains a pressing problem. Under the Chancellorship of Angela Merkel, Germany has attempted to situate itself as the European alternative to Silicon Valley, particularly as it seeks, in sporadic fashion, to digitalise its paper-based bureaucracy and become a competing economy in the space of artificial intelligence in particular (Brady 2018). Even with 3

billion euros designated for the sector by 2025, as of 2018, (Ibid), Germany's primary obstacle – and that of Europe, broadly – has been to meet the challenge of filling the so-called 'digital skills gap' to advance its industry (European Commission 2017). In 2019, a European Commission report found that a staggering 42% of Europeans were unable to perform basic digital tasks (Sánchez Nicolás 2019). This, despite an aggregate investment of €4.3 bn in 'newly-launched companies' in Germany (Buck 2018) in 2017. As 'a magnet for founders and investors' (Buck 2018), particularly with the prospect of the departure of the United Kingdom from the European Union, Berlin could still succeed London as Europe's tech capital (as a function of the quantity of start-ups), should it meet the gargantuan challenge of training and recruiting a highly skilled workforce for it (Turk 2017). The dilemma Germany finds itself in is one rooted in a long history of negotiating proximity between the migrant and *other* worker – the *Gastarbeiter* – and the German citizen who depends on the productivity and taxes of the former for survival. It is not a coincidence that Merkel temporarily suspended the Dublin regulations in 2015, opening the German labour market to upwards of 800,000 Syrian refugees (Lewicki 2018).

Through revisiting the development of German immigration policies, particularly in the post-war period, it becomes particularly clear that the country depended on racial capital; that is, the surplus-value generated from a population of workers at the margins of German society, in order to grow. Of particular importance remains the unsettled question of the permanent migrant worker, who at once agitates the German working class for driving wages down, while also not being allowed social mobility lest their returns outweigh that of ethnic Germans (Rist 1979).

4.2.1. 'Migration not of conviction but expediency'

Immigration law in Germany is a relatively new phenomenon. It isn't until the Migration Act of 2005 that Germany moves from what might be broadly summarised as 'foreigners' law' to 'immigration law' (Gesley 2017). Since 1913, 'foreigners' have been 'constitutionally excluded' in Germany, where citizenship was understood as an ethnocultural phenomenon in dialectical opposition to the so-called 'immigrant' (Anil 2005). Yet, particularly in the post-war moment, foreign labour remained a 'solution to two urgent and mutually reinforcing developments: the unexpected industrial boom of the so-called Witschaftswunder and the growing shortage of able-bodied German male workers' (Chin 2007: 33). The war had squeezed the labour supply of especially European young males, and 5-600 German labour recruitment offices were thus established along Mediterranean countries, in particular, to drive migrant workers to the North (Rist 1979):

> 'The movement that ensued was to be a migration not of families and whole populations, but of solitary workers; a migration not of permanence, but of assumed short duration; a migration not of conviction but of expediency' (1979: 96).

Two major developments in German migration contributed to some elation about the potential for foreign labour to support German growth: first, migration into West Germany in the 1950s, as some 4.5 million refugees, expellees and emigrants with German heritage, known as 'ethnic German resettlers'[35] fled communism (Gesley 2017), and; second, the *Gastarbeiter* (guest worker). The first guest workers arrived upon the successful ratification of a treaty arrangement with Italy, which was subsequently supplemented between 1955-68 with similar arrangements with Spain, Greece, Turkey, Morocco, Portugal, Tunisia, and the former Yugoslavia (Ibid). The operative word here is 'guest', as it indicated an expectation of return, following what was essentially a temporary work permit (Ibid).

In 1965, the Act on Foreigners was instated, which, for the first time, omitted any distinction between 'ethnic resettlers' and guest workers (Gesley 2017). Instead, it was a devolved approach that left it up to administrative agencies and local courts to formulate policies interpreting and applying the act to each case (Ibid). The parameters for determination were left woefully vague, stating '[…] a residence permit should be granted if the "presence of the foreigner does not compromise the interests of the Federal Republic of Germany."' (Gesley 2017). It also made a referral to the Convention Relating to the Status of Refugees of 1951, granting that 'foreigners who were granted asylum had a legal right to a residence permit' (Ibid). Soon afterwards, in 1969, an effort to implement the law on European Economic Community workers' freedom of movement passed as the Law on EEC Residence. By the following year, 25% of West German 'foreigners' were from EEC member-states (Ibid).

At the conclusion of the migrant programmes in 1973, however, guest workers had started the process of permanent immigration, leading the German government to start 'a formal policy of "integration"' (Ibid). Up until 1973, Europe's economy had been animated by 'the planned migration

[35] 'Ethnic German resettlers are considered Germans within the meaning of article 116, paragraph 1 of the German Basic Law. They are defined as people of German heritage from the successor states of the former Soviet Union and from other Eastern European States, as well as China. Further requirements for acquiring "ethnic German resettler" status are that they were born before January 1, 1993; resided in the described territories either since the end of World War II, since March 31, 1952, or since their birth if a parent met one of the two record dates; left the described territories after December 31, 1992; submitted an application for recognition as an "ethnic German resettler"; and took up permanent residence in Germany within six months of leaving the designated territories. People who are not from one of the successor states of the Soviet Union must also prove that they suffered disadvantages or discrimination because of their German heritage. Once someone has been recognized as an "ethnic German resettler," he or she is automatically awarded German citizenship.' (Gesley 2017)

of millions of "temporary" workers' from the Mediterranean (Rhoades 1978: 553) and throughout this time, Germany 'generally considered itself a "labour recruiting" as opposed to an "immigration" country' (Gesley 2017). Nevertheless, in spite of the awareness of the permanent residence of migrants, the country remained in denial about its changing state (Ibid). From 1974, incremental shifts in policy to encourage return or constrain successful immigration were made[36]; e.g. work permits were denied to any children of foreign worker arriving after December 1st 1974. Rist recalls that 'many young people from immigrant families [had] now completed their schooling', but would be ineligible for a permit, should they decide to join a parent in West Germany (Rist 1979). Children of working age were therefore faced with the prospect of being unemployed, having to resort to informal labour, or face deportation (also a consequence of taking up informal labour):

> 'It is clear that the social policies specific to the guest-worker situation are in conflict with one another; Germany authorities stress reuniting families, but the youth who come are denied labour permits' (1979: 98).

The Return Assistance Act of 1983 was the most aggressive move to expel guest workers. Those who had arrived from countries outside the EEC would receive 10,500 Deutsche Mark for leaving, adding further incentive by reducing the guaranteed amount by 1,500 DM per month overstayed.[37] In other words, guest workers, on whom the German economy depended, were penalised for attempting to build lives alongside their livelihood (Gesley 2017).

4.2.2. Wilkommenskultur as Rassekultur

The guest workers of the second half of the 20th century were emblematic of an ever-present dilemma for both policymakers and unions in Germany. On the one hand, 'the presence of highly visible immigrant groups, inferior socially and economically to the national populations, [created] a challenge to the liberal ethos of national governments committed to democracy' (Rist 1979: 99). Rist compares this to the dilemma faced by the United States, their purported regard for democracy, and the systematic segregation and disenfranchisement of Black and Indigenous communities in

[36] By 1977, some 11-12% of the Federal republic's labour force consisted of guest workers, with Berlin ranking as the 'city with the fifth largest Turkish population in the world' (Rist 1979)

[37] 'Requirements were that the guest workers could not be married to a German citizen; lost his or her job because the business or the main components of the business had been shut down or had gone bankrupt; had applied for return assistance by June 30, 1984; had been legally residing in Germany until the date of departure; and had permanently left Germany with his or her family between October 30, 1983, and September 30, 1984'

particular (Ibid). This marginalisation must continue for migrants to remain profitable – but it also unveils the hypocrisy of the values the two nations allegedly operate under. On the other hand, should Germany choose to intentionally 'create opportunity and effect social mobility for these groups, the utility of the immigrants [would be] vastly reduced and there [would be] simultaneous rise in resentment on the part of the national working class' (Ibid). For unions, the dilemma is between opting to advance the cause of the German working class, which would situate them antagonistically toward the import of migrant labour, or acknowledging that 'guest workers enhance the economic well-being of these same union workers' (Ibid). The paradox in both the case of policymakers and unions being, of course, that the guest workers, too, are the working class.

In 1990, Germany doubled down on the restrictive components of the original Act on Foreigners from 1965, with a new one. It was determined that 'Germany's capacity to take in immigrants was not unlimited and preference had to be given to immigrants of German heritage, foreigners fleeing political persecution, and EU citizens taking advantage of freedom of movement' (Gesley 2017). This came in spite of increased arrivals of asylum seekers between late 1980-1992, following the war in the former Yugoslavia (Ibis). Under the auspices of guaranteeing the immigration of those already 'legally' residing in Germany, high court decisions that upheld Germany as a destination for foreigners (but not as an immigration country) were codified, while expulsion rules became more severe, in particular for individuals arriving from outside the EU (Ibid). At the time, Germany was able to keep its approval rate for asylum applications at 4.3%, following the enactment of the Asylum Compromise of 1992, which stipulated that 'applicants that arrived at Germany's borders from another EU [or] neighbouring country did not have a right to asylum and could be refused entry' [38] (Ibid). The Federal Constitutional Court had also recently reversed decisions made by state governments in Berlin, Hamburg, and Schleswig-Holstein to grant foreigners voting rights in local elections, ruling that it was unconstitutional due to its violation of 'popular sovereignty', which was understood to be only represented by the people of the state (Staatvolk), prohibiting aliens to participate in elections'[39] (Anil 2005).

These moves were made not in small part due to the increasing anti-immigrant sentiment across Germany. The virulent rise of Neo-Nazis, lead to arson attacks and pogroms against asylum

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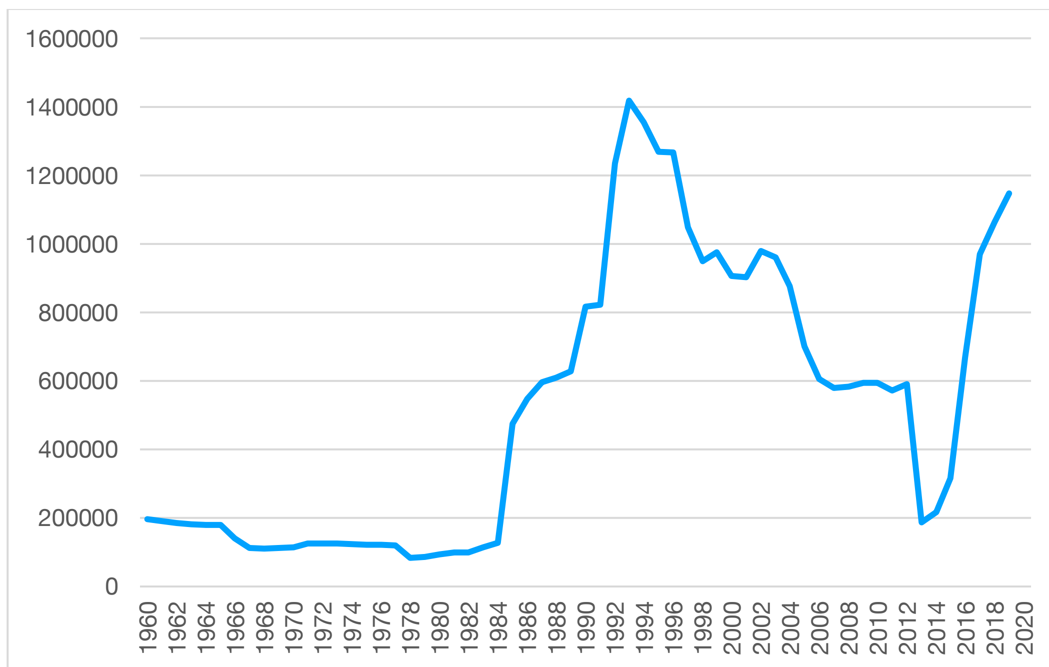
[38] 'The "airport procedure" applied to asylum seekers from "safe countries of origin" and to those who did not have a passport or other valid travel documents upon arrival at the airport. Under the procedure, the asylum seeker stayed in the transit area and a decision whether to grant him or her entry to the territory and to the general asylum procedure was made under an expedited procedure. If the immigration officer found that the application was "manifestly unfounded," the applicant was denied entry to the territory and deportation was threatened as a precautionary measure' (Gesley 2017)

[39] In 1991, the Maastricht treaty granted local election voting rights across EU member states (Anil 2005)

seekers, refugees, and Turkish families in the early 1990s, particularly across the eastern regions (Lewicki 2018). Debates facilitated by far-right parties (including the Deutsche Volksunion, Nationaldemokratische Partei, and Die Republikaner) on '[…] "bogus" and "fraudulent" asylum applicants […] whose main intention was to invade and exploit the German welfare state' won Neo-Nazi sympathetic politicians parliamentary seats, including in supposedly liberal Berlin (2018: 503).

Figure 4.2. Refugee admissions in Germany 1960-2020



Source: World Bank

The German immigration system has historically tended to veer conservatively, to say the least, at times even legitimising and enabling violent anti-immigrant sentiments. That is until the need for labour imports outweighed the need for ethnonational integrity. As mentioned earlier in this section, the Migration Act of 2005, which designated Germany as an 'immigration country' for the first time, materialised largely against the backdrop of a shortage in skilled labour in the IT-sector (Gesley 2017). Following the immense failure of the skilled labour programme (which sought to recruit 20,000 individuals but received 8,000 applications), the Act came into force on January 1st,

2005, amending the Nationality Act [40] and introducing the Residence Act [41], which together provided a pathway to 'long-term permanent residency for migrants, in particular for skilled workers' (Gesley 2017). 'Integration' policies were also introduced under the principle of 'support and challenge', mandating obligatory classes for language and culture learning (Ibid). Over the next decade, Germany experienced its largest population growth since 1992 (Ibid), importantly out of necessity and as a result of capital input needs, as opposed to a positive national inclination towards immigrants.

It should therefore come as no great shock that Merkel's response to the 2015 refugee "crisis" was so controversially received (Lewicki 2018). Virulent opposition to the arrival of refugees was particularly heightened following the New Year's Eve events of 2015/16, as centrist and far-right politicians and agitators entered an implicit consensus, drawing a false equivalence between terrorism and 'a failure to manage immigration' particularly from 'Islamic cultures' (Ibid). Lewicki notes that as recently as 2016:

> '[…] 38.15 per cent of the people living in the former West and 53.82 per cent of the population in the former East would 'prohibit Muslim immigration to Germany', while 50.3 per cent in the East and 49.92 per cent in the West claimed to 'feel like a stranger in their own country due to the high Muslim presence' (2018: 508).

Sentiments such as these did not emerge overnight; they were structurally anchored to a long history of racialised immigration policies. Policies that effectively treated "foreign" migrant labour as *racial* capital to be invoked economically in times of labour shortage (Robinson 1983), and politically when the ethnocultural integrity of Germany was threatened (Lewicki 2018). This was made consistently clear as the 'spectacle' of the refugee crisis was articulated in racialised terms in German public discourse (De Genova 2013), and is testament to the continued 'coloniality of migration' (Gutierrez Rodriguez 2018; Quijano 2000). Right-wing populist parties, Alternative für Deutschland (AfD) in particular, rose in the political hierarchy in tandem with Pegida's anti-Muslim mobilisations in late 2015: 'Racist violence quadrupled to alarming peaks in 2015 and 2016. Authorities registered 970 assaults targeting refugee facilities and 2,400 attacks aimed at individual refugees in 2016' (Lewicki 2018). In 2017, AfD arose to become a third-largest party, winning 12.7% of the total vote (Ibid),

[40] Children born to foreign families would now be eligible for German citizenship, provided legal residence in the country for at least eights year (Gesley 2017).
[41] The Residence Act simplified residency titles to "temporary residence" and "permanent settlement" permit (Gesley 2017).

thus reconciling German democracy with its hostile immigration environment, through parliamentary representation.

Finally, Germany's two most recent pieces of legislation show that even the Migration Act is subject to proclivities towards temporary residence. With the Integration Act of 2016, 'Support and Challenge' was re-emphasised, while adding a further infantilising incentive structure: 'refugees who show the potential to integrate' would have a good chance of permanent residence, with 'easier and faster access to integration classes and employment opportunities, while refugees who refuse to cooperate face a reduction in benefits' (Gesley 2017). Meanwhile, the 2019 Asylum and Immigration Policy introduced the Geordnete-Rückkehr-Gesetz (Orderly Return Law), which vastly expanded police and immigration authority powers to facilitate a more concerted effort to deport 'failed' asylum seekers (Mischke 2019). The Interior Ministry's objective has been clear: to deliver on the hundreds of thousands of deportations planned, referring to the failure to deport 50% of the 188,000 deportation target since 2015 (Ibid).

Throughout this chapter, it has become abundantly clear that Germany understands how essential migrant workers are to the survival of its economy, yet the 'mixed blessing' of migrant labour also exposes the country's continued struggle with structural racism (Rist 1979). Today, hardly any distinction is made between 'refugees' and 'labour migrants' in Berlin (Rhoades 1978), as the former's function is largely regarded as economic. While the Identitarian Movement's posters appear as an abhorrent contrast to the urban artwork across Berlin, along with the many civil society organisation, participating in the "culture of welcome" (Wilkommenskultur), they are mutually constitutive and draw some semblance to Harvey's 'accumulation by dispossession' (albeit with the caveat that immigration status is understood as a pre-requisite to capital). As I argue in Chapter 6, Wilkommenskultur is the vehicle through which "refugeeness" – an abstraction and essentialism of refugee subjectivities – becomes a means by which German generosity is communicated, while it remains undeniably hostile terrain. Through refugeeness, and digital refugeeness in particular, the veil of liberalism performs as a silent consensus appropriate for the times; by abstracting the refugeeness from the refugee, one can claim to improve their "tragic" conditions through measures that do not, in fact, threaten neither the "native" working class nor the nation's need for cheap labour, while attracting venture capital and funding in the process.

Chapter 5 | The Digital Anti-Sanctuary of New York

'In fact, the official response to immigration has always been schizophrenic, embracing immigrants at some moments and decrying them at others. It has always included prophets of doom, convinced that immigration will destroy the nation, yet both immigration and the nation continue [...] Why is this issue so fraught with conflict? Because the very foundation of American capitalism rests upon its manipulation'

Mike Davis (2018: 173)

In this chapter, I explore New York City as a site of mundane border enforcement beyond the border, demonstrating how urban migrant environments are commodified and datafied. The digital anti-sanctuary permits the insertion of technology actors in the process of governance, through providing Information Control Technologies (ICoTs) in the form of digital urban infrastructure, which mediates everyday life among migrant communities in particular. The city thus becomes a legitimising ground for Silicon Valley and a techno-purgatorial containment zone for those fleeing persecution and hunger.

5.1. The Anti-Sanctuary City

'I don't know why they call this a city of immigrants' says Maryam, nodding to the files of clients sitting on her desk — clients dreaming of refuge in New York City.[42] Against the backdrop of Trump's tightening immigration climate, visible not just by virtue of his emphatic border wall fantasies and the increasing deportation raids by US Immigration Customs Enforcement (ICE), but by how the State Department has continued to defund and sabotage Voluntary Agencies (VolAgs)[43] in charge of providing resettlement services. Like the one Maryam works at in Brooklyn, these essential private organisations are the bedrock of resettlement in the United States. For migrant populations in New York City, they are often the last hope for institutional support; for sanctuary from persecution, poverty, and shelter.

This Sanctuary City, however, is shrinking — and not in small part due to these obstacles. By late November 2018, one of the largest resettlement agencies of the city had been defunded to the point of obsolescence for Resettlement and Placement services (R&P). It remained in tight

[42] Field note, Maryam, November 2018, Brooklyn
[43] https://cis.org/Rush/Private-Refugee-Resettlement-Agencies-Mostly-Funded-Government

competition with other VolAgs in NYC, struggling to demonstrate their successful resettlement of asylum seekers and refugees in the year past (diminished in numbers by Trump's so-called Muslim-ban, which led to fewer documented individuals declaring themselves in New York). R&P under Trump was, in other words, designed to fail. Nonetheless, Trump's hostile immigration architecture rests on foundations beyond outright policy; among other spheres of influence, it is notably inherited from Silicon Valley. As the Sanctuary City shrinks, displaced individuals – documented and undocumented alike – are deterred from seeking institutional support. As a result, marginal smart city services are relied upon to maintain the city's symbolic status as a city of immigrants. Yet, many of these digital infrastructures are 'in complete contradiction of the Sanctuary City'.[44] This chapter refers to technologies that are advocated by the Mayor's Office for Immigrant Affairs (MOIA). These include the celebrated public Wi-Fi infrastructure known as LinkNYC, IDNYC municipal ID system, and the affordable housing initiative, Housing Connect. However, MOIA's digital pathways to sanctuary have been weaponised by law enforcement agencies, including by agencies such as ICE, and other adversarial actors. Marginalized communities are pulled into the digital periphery through their categorisation as needy (in need of technical solutions to their predicament), criminal and elusive (justifying their identification, monitoring and surveillance), leading to their containment through limiting mobility and access via information panics (or direct interception, detention, and deportation). As the city has become layered with an information control architecture that mediates access to crucial services, while reinforcing the disaggregated panopticon of a hostile immigration regime in the urban milieu, newcomers and mature immigrant communities alike have been increasingly engaged in refusing datafication through urban concealment.

In the sections that follow, I explore New York City as a site of mundane border enforcement beyond the border. Short and long-term ethnographic encounters with public defenders, caseworkers activists, and self-identifying migrants of varying status shape my framing of the city as a *digital anti-sanctuar*y. These encounters elucidate how the emergence of digital forms of urban migration control – observable through experiences of technology-driven fear and precarity in vulnerable migrant populations – demarcate the digital periphery. The deference to technological solutions in realms crucial to everyday life, such as access to information, identification, and housing to name a few, permits technology giants to play a subtle, and yet increasingly active role in the control of undesirable migrant bodies. In exchange, cities such as New York can continue posturing as

[44] Interview, Amelia and Melissa, November 2018, Manhattan

"sanctuaries", while facilitating the rapid and lucrative entrenchment of Silicon Valley in the fabric of urban governance.

5.1.1. Urban Governmentality of Anti-Immigration

I arrived in New York City in a moment of particular turmoil for immigrant communities at large; US Secretary of Homeland Security, Kirstjen Nielsen, had signed off on 'Option 3' in April that year — a deterrent strategy set to curb migration by putting in motion the indiscriminate prosecution of 'every adult who crossed the border illegally, including those who came with children' (Currier 2018). Ramping up its now-notorious deterrent policy of family separations, it also emerged that families were left unable to reunite with their children due to technical shortcomings that prevented parents from being digitally 'tagged' with their separated children. While the Trump administration was by no means the first to boast an aggressive deportation machine, it did become the first in US history to have birthed the concept of 'deleted families' (Miroff, Goldstein, and Sacchettti 2018). Trump's border didn't simply end with his infamous border-wall or in immigration courts — the border was now capable of digitally-mediated migrant erasure altogether. The border, in other words, 'transgresses' families and fortifies the artificially-imposed divides between them (Walia 2013). The digital augmentation of the US border, however, did not emerge overnight, nor was it limited to the purview of border enforcement agencies such as US Customs and Border Protection (CBP) and ICE. With 343 deportation raids between January and October 2018 alone (at least one raid per day on average),[45] the irony of the "Sanctuary City" status of New York did not escape the many caseworkers and immigrants' rights activists I encountered in the city, while the term itself hardly featured in how asylum seekers, asylees, and other immigrant populations conceptualised their presence in the city. Although the Sanctuary City exists on two levels; that is, as a movement driven largely by civil society and religious organisations,[46] and as a policy adopted by the Mayor's Office for Immigrant Affairs (MOIA),[47] it also remains the administrative, material, and spatial embodiment of violent gatekeeping practices, contravening any potential right to the Sanctuary City (Lefebvre 1996).

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[45] ICE Watch: https://raidsmap.immdefense.org/
[46] Most prominently, the New Sanctuary Coalition: https://www.newsanctuarynyc.org/
[47] Mayor's Office of Immigrant Affairs Releases Third Annual Report, Solidifying NYC's Commitment to Protect the Rights of All New Yorkers, Regardless of Immigration Status: https://www1.nyc.gov/site/immigrants/about/press-releases/20200414-moia-releases-third-annual-report.page

As Mike Davis teaches us in *No One is Illegal*, 'what truly demarcates the Unites States is not so much the scale or frequency of state repression, but rather the extraordinary centrality of institutionalised private violence in the reproduction of the racial and social order (Davis and Akers Chacón 2018: 15). The urban, and the "smart"-urban in particular (Söderström and McFarlane 2017), has played an instrumental role in operationalising this order, technologically. Positing a critique against the celebrated post-racial turn in São Paulo, Alves frames urban practices of segregation, economic exclusion, mass incarceration and police violence against predominantly Black youth as premier features of the 'Anti-Black City' (2018). Similarly, I assume a critical position against celebratory discourses around New York City as a "City of Immigrants", encountering it instead as an *Anti-Sanctuary City*. Practices underscoring the anti-sanctuary demonstrate what remains a fraught battleground rife with struggles for immigrant justice and refuge from persecution, against the backdrop of an expansive and often hidden consensus between private technology actors, the city, and federal agencies in the urban reinforcement of anti-immigrant marginalisation, violence, and precarity.

I meet David in Crown Heights, Brooklyn, one September afternoon; not an inconspicuous place for a public defender working with undocumented immigrants. David's organisation, the Brooklyn Defender Services (BDS), operates out of the neighbourhood. [48] The neighbourhood, which had been previously occupied by mostly immigrants of Jewish, Irish, and Italian origins,[49] and considered 70% white by 1960, had seen considerable white and capital flight as the majority of immigrants from the West Indies and the south of the US settled in New York City, taking up residence in, predominantly, Crown Heights, East Flatbush, the North Bronx, and Laurelton (Foner 2001). By 1970, the demographic makeup of Crown Heights had changed significantly, now considered 70% Black. Today, Crown Heights remains a destination for newcomers — though not immune to the effects of gentrification, the neighbourhood houses enough immigrants to warrant ICE and CBP's attention, who were 'filmed knocking on apartment doors in Crown Heights' as recently as March 2020 (Devereaux 2020).

David works with families subject to child neglect charges; particularly damning for the undocumented, these charges are often inextricable from their particular immigration predicament. As undocumented families, David's clients experience severe obstacles towards accessing social

[48] The area gained particular notoriety for inter-diaspora conflict some three decades earlier in the summer of 1991, leading to severe tensions between especially the Hasidic Jewish community, and Afro-American and Afro-Carribean communities (Buff 1997)
[49] 'Remembering Crown Heights', NYU.

support systems and services (Eisenzweig 2018).[50] Similarly, the lack of institutional flexibility in considering language and cultural barriers means that Child Protective Services (CPS) adopt an agnostic attitude towards the particularities of the case (Ibid). The charge itself is typically a result of irregular working hours transpiring from poverty and the lack of access to formal work. To exacerbate these challenges even further, David tells me families subject to child neglect charges are at high risk of being flagged by ICE, thus risking their detention and deportation (Dreby 2012). He describes the profoundly unknowable nature of the immigration environment in New York, concerned about his clients showing up to family court, only to be detained by ICE: 'New York City has sanctuary status, but this is constantly under question. There remains a worry that even if a trial is merely registered in the court's calendar, that there is some way that ICE might use that data too'. Previously, David was able to reassure his clients about risks associated with ICE, which he estimates used to be practically non-existent, once they reached out to BDS for help. Increasingly, however, there is an emerging tension between information solicitation and surveillance; as a lawyer, David is severely constrained in his ability to serve clients without access to data — finding himself unable to ask for compromising information, he is forced to advise clients to plead to certain charges to avoid the creation of risky and potentially identifiable data trails. 'Family court seems to be the typical entry point' he says, referring to data that ICE might obtain — 'the bar is very low for undocumented immigrants. It is usually for benign things such as a child in school mentioning that they were depressed', for which families are held accountable by default. In response, David's clients, along with the majority of newcomers I ended up speaking with in the city, preferred to stay "invisible" within diaspora networks.

It has long been established that refugees go to cities to live in closer proximity to potential familial networks, and to live in anonymity under support from these networks (McKenzie 2016; Muggah 2017). 'There's a place for everyone in New York, but you have to make that place on your own'— Majeed,[51] a Chadian asylum seeker in his mid-thirties who I had met during a support group at Human Rights First, lamented the jarring and disorienting experience of "integrating" and belonging in the city with no one to reach out to. Contrary to other attendees such as Abbas and Talal, Majeed did not have connections to the diaspora through family or friends of friends, who had, conversely been able to provide Abbas and Talal with both housing and work in Flatbush, Brooklyn.[52] [53] Majeed, however, had been the subject of a great deal of serendipity, as his first encounter with a

[50] Interview, David, September 2018, Brooklyn
[51] Support group meeting, Majeed, October 2018, Manhattan
[52] Support group meeting, Abbas, October 2018, Manhattan
[53] Support group meeting, Talal, October 2018, Manhattan

Chadian taxi driver provided him with a direct link to the diaspora. He was driven to a house in Jersey, where he was met by his host, an American-Chadian man 'us from Chad need to be brothers and help each other' he recalls being told, before being put up in the house with the man's family. Majeed recently moved into a larger shared apartment with other people, allowing them to pool resources; his eventual job as a grocer, referred to him by his former host, had provided some financial security, against all odds**.** Majeed's story, however, is by no means straightforward— while newcomers rely on anchor-communities, who they may know in advance or seek out upon arrival, survival provisions are neither guaranteed nor necessarily consistent. The resignation of newcomers to often chaotic but concealed diaspora spaces, hidden from the gaze of the state, means there is little if any institutional support, which is particularly challenging for families; declaring your intention to apply for asylum, however, risks putting you on ICE's radar and a path to detention and potentially deportation**.** As David explains, immigrant invisibility is disrupted when you come to court, recalling how going through the formal immigration system, in one instance, had led a client to self-deport: 'They had come to America because their daughter had no future in Guatemala. The paperwork was gruelling. They chose to return'.

Given the hostility of this environment, I wonder how David is able to continue his work. He pauses and looks somewhat resigned: 'By building trusted relationships — not with forms, but with humans,' recalling that even in the human case, 'documenting truth is potentially risky to the immigrant. What is at stake in New York is not simply a new immigration enforcement paradigm, but a weaponised information environment, requiring those who are subject to it – immigrant populations and service providers alike – to iterate emergent tactics of urban concealment. 'DACA recipients have been consistently screwed over; they registered and gave details about how they arrived in the US under the impression that they were guaranteed a path to citizenship,' he says, regretfully. In the wake of the Trump regime, this data is now putting them in danger of being deported. This is no different for asylum seekers, whose 'legitimate asylum-claims are being upended, and data volunteered on that front is also used against the applicant'. Despite greater socio-economic precarity, undocumented immigrants have to resort to informal work under the shelter of the 'invisible diaspora.'

5.2. Digital Afterlives of the "Border-Wall"

High-tech offerings are included as crucial elements in the outreach work of the Mayor's Office for Immigrant Affairs (MOIA), e.g. in their provision translation services, immigration services,

connectivity, and identification. Infrastructural technologies including public wifi, through the LinkNYC kiosks, municipal ID systems (IDNYC), and affordable housing platforms (HousingConnect) have been strongly featured elements of MOIA's strategy. Against the backdrop of US Immigration Customs Enforcement's (ICE) crackdown on undocumented communities, however, my informants warned me that Public Wi-Fi was leading to information panics amongst vulnerable immigrant communities, but also potentially directly correlated to detentions and deportations. Even as the city officially refuses to share immigration status-related data with the federal government, it is unclear whether the same can be said for the technology contractors working with institutions including but not limited to the Mayor's Office for Immigrant Affairs, the Department of Housing Preservation and Development, and the NYPD. New York City as a "smart" city, reveals two logics of anti-sanctuary, namely *information panics* and *urban instrumentalization*.

5.2.1. Information Panic as Containment

'You know, 885 Church Avenue has the largest concentration of undocumented immigrants? It's also where we have the one LinkNYC kiosk in the area! We were so excited at first; people can charge their phones, get WiFi, and come join us… we have our Cooper Union [program] ad on the kiosk.'[54] Since I first arrived, the City, and MOIA in particular, had been subject to mounting critique over the NYPD and ICE officers' deployment of high-tech surveillance practices, including but not limited to license plate readers, a centralised app for monitoring security cameras across the city (part of the Domain Awareness System), and other predictive analytics tools used to determine the likelihood and presence of undocumented immigrants. Activists were already calling on MOIA to do more to stifle the capabilities of ICE. The LinkNYC kiosks Anita refers to are the product of the City's contract with the Sidewalk Labs daughter company, Intersection, who are responsible for the delivery of what purports to be a free public Wi-Fi project. [55]

Payphones across New York City had been replaced by the nodes, delivered in partnership with the Mayor's Office, and a company known as Intersection. Each kiosk is equipped with public Wi-Fi, the ability to place phone calls, charge devices, and comes with a tablet through which city services, maps and directions can be accessed. The city is littered with the towering screens, giving recommendations about what to see in the city (or at the time of writing, listing the names of victims of police brutality). The kiosks display adverts and fun facts, tailored to the particular area.

[54] Field note, Anita, December 2018, Brooklyn
[55] A sister company of Google, owned by Alphabet

Intersection has deep partnerships with the Mayor's Office for Immigrant Affairs, as well as the NYC Human Rights Commission, giving access to immigrant services (e.g. 3-1-1 and translation services among others) on the kiosks. It has also been known to provide ad-space for local immigrant rights organisations and services. Contrary to how the initiative has been advertised, however, each unit also has three hidden cameras (these are fairly obscure unless you look closely behind the black panel), and a Bluetooth sensor. This gives rise to several concerns and points of inquiry. First and foremost, Intersection currently holds more than 8.6 terabytes of user data distributed over 6 million unique users (Wiggers 2019) — this includes extensive device data, not limited to language, browser type, time zone settings, etc. This is population data that advertisers can use to target particular demographics and communities in New York. This is also data that is potentially detrimental to affected communities of immigrants in particular if in the wrong hands. In 2016, Charles Meyers exposed code from the public GitHub repository of LinkNYC (Kofman 2018), which indicated that the kiosks were capable of collecting and organising user's geo-coordinates, user's browser type, operating system, device type, device identifier, and full URL clickstreams (including date and time). Intersection's own privacy policy shows that the following data is collected: MAC addresses, IP address, browser type and version, time zone settings, browser-plugin types and version, operating system, device type, device identifier.[56]

At the Intersection offices, the concerns and resistance expressed by communities remained a puzzle with no straightforward technical fix. Referring to the kiosks as 'community boards', Isabel describes how neighbourhoods 'where people don't normally get services' tend to harbour suspicions around the costs of the kiosk — 'They're like, what does this cost mean? Nothing is free'.[57] Intersection had toyed around with releasing a downloadable app that could provide more info on the kiosks and centralise city services but had quickly realised that privacy concerns remained salient in the city and that the people were, therefore, less likely to download it. When I ask about other ways to further inform residents about the 'fine print' of the kiosks, I am told that 'we do have a F.A.Q. on our website, but it's only in English.'[58] I am puzzled, following subsequent revelations by Isabel that Intersection proudly hosts a 'how to connect' site translated to six different languages. It is telling that the barriers to entry to LinkNYC are significantly lower than the barriers to exit. My interactions with Intersection were short but instructive; Isabel (external comms), Zeynep (back end developer) and Mike (data analytics) were mid-level cogs tasked with deploying the kiosks.[59]

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[56] Intersection privacy policy: https://theintercept.com/2018/09/08/linknyc-free-wifi-kiosks/
[57] Interview, Isabel, March 2019, online
[58] Interview, Mike, March 2019, online
[59] Interview, Zeynep, March 2019, online

> 'We worked with local non-profits, to let them know they could use the space for putting their content. Making sure individuals in the communities get platforms to talk about issues that matter to communities. Reactions have been quite excited. Not only are we providing a new technology and offering a free product, but we're also on the streets with LinkNYC, engaging with campaigns such as dosomething.org, just FixIt, the gun violence campaigns, and pride.'[60]

Isabel's team of technologists are genuinely under the impression that they were working on behalf of communities; it became apparent quite quickly that they were not, however, in any meaningful way plugged into wider critical discussions around data-sharing practices within the organisation.

Having sourced, from key conversations with colleagues, clients and informants at CAMBA, Human Rights First, and Rethink, three major concerns, I brought these to the attention of Isabel in one of our last calls, namely; uncertainties around 1) data collected through kiosks, beyond browsing data — across the board, informants were concerned about audio and video content being collected via the hidden cameras in particular; 2) how that information was processed and 3) whether there was a process through which an individual or an agency could request to access this data. Isabel takes a moment to answer '— [we do] things like letting people know that cameras are not allowed to have facial recognition, and all footage clears after 60 days and that all other data is also erased after 60 days We only get technical data, which we don't think can be used to figure who people are. The only PII (personally identifiable intelligence) we collect is an unverified email address, device type and phone language. To get back on the Wi-Fi, we also get a hash key, which is taken from each device'.

Anita had only learned about these concerns after having been in consultation with Intersection and agreed to advertise CAMBA services on them: 'We have no time to take a break and look at these things; we're in a position where we're having to behave like poor people and accept bad deals with high interest'. Anita holds up the key fob to the office doors, situated between the reception and the cubicles where caseworkers work: 'These key fobs are about keeping information inside; there are vulnerable clients here, with health and other issues we wouldn't want getting out.' The door separating these spaces were designed to lock automatically every time they closed; to keep information contained for the duration of the time clients spent at the CAMBA offices. On 885 Church Avenue, however, they would be compromised once more. As I would come to find out, data collected through the kiosks like the one outside the CAMBA offices, along with census data, aided in Intersection's targeting, linguistically and culturally, of communities of interest.

[60] Interview, Isabel, March 2019, online

Not long before my conversation with Anita, I had spoken with Alhasan, an organiser with the Darfur People's Association of New York (DPANY). 'How can I trust this thing when it doesn't prompt me before just connecting me?' – he explained that the community tends to 'trust what's close.'[61] That he, even as a Transit Superintendent with the Metropolitan Transport Authority 'would never pick up transit or Public Wi-Fi; only at Family and friends' homes! We don't trust the whole T&C "if you agree, read 5 pages, and send a tweet" [to get online]'. Yunus is unsurprised: 'So that's one thing that is crucial right now because people are afraid of being deported. And they don't know even if their case is pending. They cannot be deported [as long as their case is pending] but they are afraid of just putting their information out. So they would rather go by word of mouth than going somewhere to seek assistance.'[62]

While public consultations in the design phase of the Wi-Fi emitting kiosks involved the community in the design of the product, initial designs never included the surveillance capabilities that were subsequently added, including several cameras at each of the kiosks, Bluetooth sensors, and poorly regulated data collection settings. Several activist organisations called for the kiosks to be dismantled or re-designed, but both City and company have been reluctant. In mid-November 2018, I managed to establish a relationship with one such organisation known as RethinkLinkNYC. I meet them on West 37th Street in Manhattan at the People's Forum, a 'movement incubator for working-class and marginalized communities' from where most of their work takes form. Amelia and Melissa are organisers with Rethink. Amelia immediately lays out the stakes: 'what we're battling here is a world view'. As an organisation, Rethink's work consists of resisting and challenging the surveillance-based business models from within which LinkNYC kiosks are built. As individuals subject to different but intersecting forms of violence associated with surveillance — the threat of detention and deportation in the face of precarious immigration status, and the use of surveillance in domestic abuse — Amelia and Melissa were especially concerned with the emergence of the boxes in the context of the city as a Sanctuary. Simply put, 'It's in complete contradiction with the concept of a sanctuary city,' Amelia explains. While, initially, Link seemed to enhance commercial activity and community building by allowing browser access, they disabled the feature when 'encampments by homeless people started happening. [they claimed] porn was another reason. But community-building activities were not tolerated.'

Melissa clarifies that the initial rollout of the LinkNYC pilot was 'not attempting to take into account how different communities move. It was a catch-all game in terms of data' — it was, however,

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[61] Field note, Alhasan, January 2019, Brooklyn
[62] Interview, Yunus, November 2019, Brooklyn

in the process of becoming a routinised part of the urban landscape of New York; Melissa underscores that 'it's the process of normalisation that is problematic.' Since then, it has become standard practice for each Link to be programmed according to the particular neighbourhood that it is located in. The implications of a rollout in an immigration-dense area, as has been the case in Queens, are potentially dire. Both emphasising that the mediation of social services through kiosks, rather than buildings, not only bars especially vulnerable individuals from the ability to speak to someone face to face, or obtain access to momentary shelter, but also 'damages trust'.

Melissa pauses, visibly frustrated, before concluding that 'a great show of faith would be to remove the cameras.' As an activist, and one who organises with and on behalf of undocumented immigrants and communities of colour, in particular, she is concerned about the possibilities for resistance in future — 'they know protests are happening in Manhattan; they know the uprising is coming and they need to keep tabs on it.' Amelia chimed in, describing by analogy, that the dynamics of being watched impacts their ability to speak truth to power, not too dissimilarly from the ability of survivors of domestic abuse to report on their abuser: 'Most of us have different reasons for being viewed differently… There's an aspect of not wanting to rock the boat, even if you're aware of things, out of fear that you might be targeted, or that your community might…' These are hard conversations; the embodied experience of surveillance-induced trauma is an inescapable reality, hidden under the allure of the city's techno-chauvinism (Broussard 2019), out of sight and out of politics —whether in asylees sceptical of data collection in light of having fled persecution; among undocumented immigrants who are fighting to maintain what little legal claim they have to the homes they have been cultivating for decades, or survivors of other forms of violent surveillance, including domestic abuse.

'Daniel Doctoroff is someone who didn't like the city to begin with, and now he's remaking it so that his types can come here' Amelia had said at our last meeting. Doctoroff belongs to the generation of classic urban "do or die" capitalists who benefitted from a steadily revolving door between politics and the corporate sector. Having first served as Deputy Mayor for Economic Development and Reconstruction under Mayor Bloomberg, and then CEO and President of Bloomberg LP until 2015, he founded Sidewalk Labs, commencing his aggressive lobbying for a smart city future for New York City. 'He hates the city,'[63] she says. Indeed, Doctoroff, in consort with Mayor Bill De Blasio played a pivotal role placing Silicon Valley companies in key governmental bodies across the city, laying the seeds that would transform New York into an

[63] Alluding to Doctoroff's urban planning memoir, *Greater Than Ever,* Amelia points to his professed hatred for the city growing up. In an interview from 2017, Doctoroff admits that his view of the city became more "romanticised", as he started seeing New York through the eyes of "our competitors" while working on its Olympic bid (curbed).

unchecked testbed for technology products. Between November 2014 and my arrival in September 2018, the City announced a series actions that would see Silicon Valley more firmly woven into the fabric of New York.

On November 17th 2014, Mayor De Blasio announced that a new consortium of technology, advertising, and design firms had won the City's bid to replace its now expired payphones with the world's 'largest and fastest free municipal Wi-Fi network'. [64] By late 2015, the first LinkNYC kiosk had been installed. By 2016, LinkNYC is the only Sidewalk Labs project publicly discussed, as Doctoroff frames the kiosks as a solution to the predicament of the urban poor from the podium at the Manhattan Yale Club (Pinto 2016). In January 2017, De Blasio announced that he will defy Trump's stance on Sanctuary Cities — going live on CNN to defend his position, De Blasio laid out the risks: 'The NYPD has spent decades building a relationship with communities, including immigrant communities. […] New York City has half a million undocumented people. We want them to come forward and work with the police […] if they believe by talking to a police officer, they will get deported then be torn apart from their family, they're not going to work with police' (CNN 2017). For De Blasio, Trump is not a threat to undocumented communities, but to the NYPD's capability to police the city at the expense of communities with precarious immigration status. Later that year, in October 2017, De Blasio launches NYCx with the announcement that 'technology is an inescapable, critical part of our lives and the future of our communities' — the Mayor's Office further elaborates that 'NYCx will open urban spaces as testbeds for new technologies as a core part of the program', transforming '… the relationship between city government, community and the tech industry to be more collaborative and inclusive.' [65] Indeed, the NYCx Advisory board, appointed just short of three months later, created a powerful interface between city government and the tech industry — the kind of access to experimental test sites technologists dream of. Giants including Facebook, Google, IBM, Microsoft, MongoDB, Verizon and Viacom now occupied significant positions on elite city committees (Zukin 2020). Finally, on September 17th 2018, shortly after my arrival to the city, De Blasio announces partnership between MOIA and LinkNYC aimed at providing citizenship services and information to immigrant communities in NYC.[66] At this stage it is public

[64] De Blasio Administration Announces Winner of Competition to Replace Payphones with Five-Borough Wi-Fi Network: https://www1.nyc.gov/office-of-the-mayor/news/923-14/de-blasio-administration-winner-competition-replace-payphones-five-borough

[65] De Blasio Administration Announces NYCx Technology Leadership Advisory Council Members: http://www1.nyc.gov/office-of-the-mayor/news/027-18/de-blasio-administration-nycx-technology-leadership-advisory-council-members

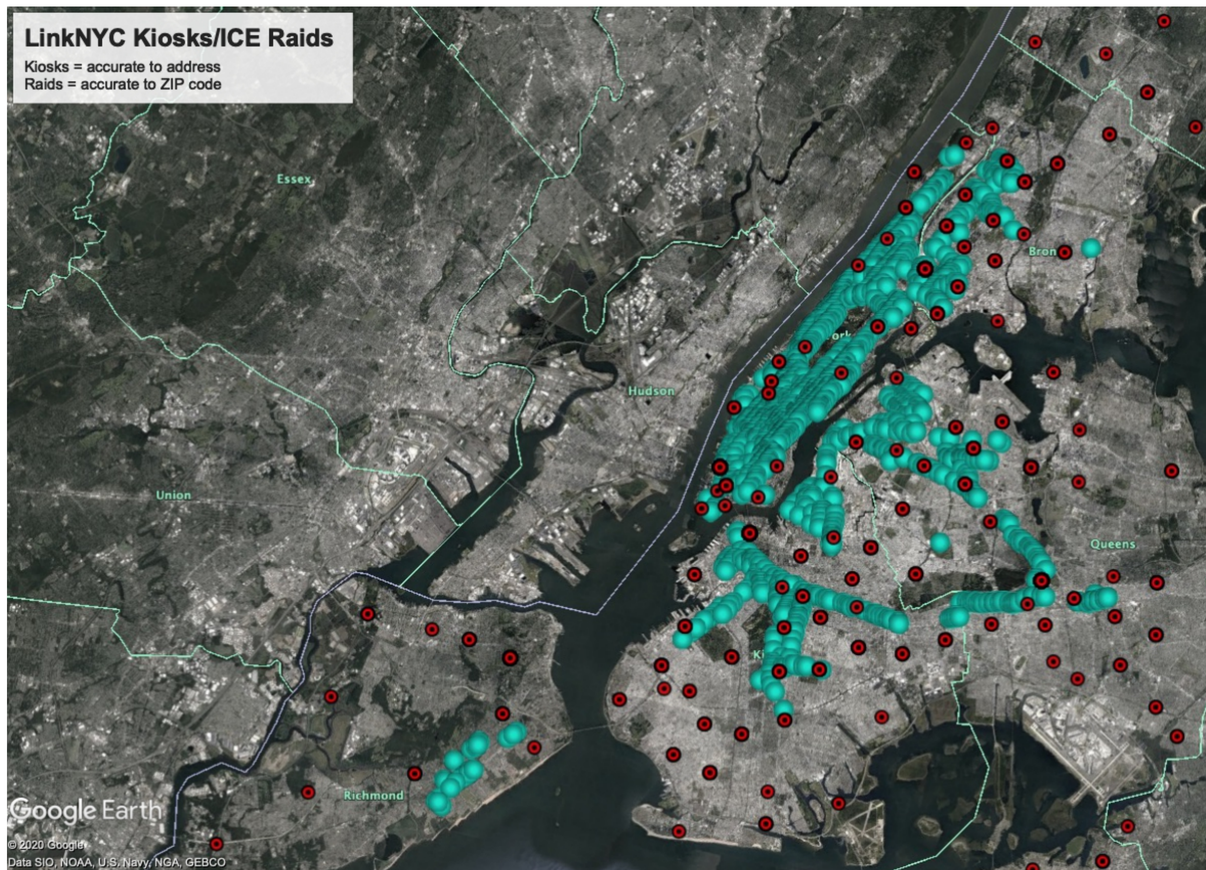
[66] On Citizenship Day, De Blasio Administration Launches New Campaign to Promote Naturalization and Civic Engagement Among Immigrant Communities: https://www1.nyc.gov/site/immigrants/about/press-releases/09-17-2018.page

knowledge that; 1) ICE is operating out of NYC, 2) that Silicon Valley giants are supplying ICE software that is used for detention and deportation, 3) that NYC's smart surveillance infrastructure (built-in large part by Microsoft, IBM and Google) may be accessed by immigration enforcement or shared with them by the NYPD.

During my engagements with Rethink, I became concerned about the spatial coverage of the Link nodes — particularly concerning places that were considered potential hotspots for ICE deportation raids. I scraped and mapped publicly available accounts of ICE deportation raids, curated by the Immigrant Defence Project and the Center for Constitutional Rights, against an updated list of kiosks (provided on LinkNYC's website). The map that emerged in many ways serves as the spatialised representation of but a fraction of immigrant fears in the city. With coverage leaving Manhattan practically invisible and indiscriminately surveilled while forming datafied walls around poorer neighbourhoods of Brooklyn and Queens, the map unveils the ways in digital infrastructures, such as LinkNYC, interact with physical infrastructures to constrain the ways in which human normally move. Because the spatial phenomenon of the raid is understood as an instrumentalization of the everyday urban environments of New Yorkers, it stands to reason that those same environments are interrogated for their violation of trust. The kiosks, under community suspicions of complicity, are regarded as extensions of the "raid". Techno-space, in other words, increasingly regulates movement in the city.

The city has been retrofitted with fear by design. On the other side of the centrality of what urban geographers have referred to as 'geographies of fear' – or in Tulumello's words, 'fearscapes' (2015) – in forming Western cities (England & Simon 2010), is the inverted fearscape, now directed at the marginalised, the undesirable, and the previously feared (Brook 2006). Information panics are a direct result of this inversion; the introduction of 'electronic "eyes on the street" [as] a "solution" to the "fear of strangers"' (2006: 130). On the one hand, these surveillance infrastructures appease usually white, middle-upper class citizens and, on the other hand, they are potentially weaponized by immigration enforcement. When pre-existing smart urban surveillance infrastructures serve as such a double-edged sword, there is no telling where the logical limit to the exponential potential for control and violence might lie. These are 'panoptic sorts', as per Gandy, and their 'work is never done. Each use generates new uses. Each application justifies another' (Gandy 1993: 15), deepening the information panic.

Figure 5.1. ICE Deportation Raids against LinkNYC Kiosks



Deportation raids: **(*red*)**, *Kiosks:* **(*teal*)**

A few months after I left the city, the case of Juan Rodriguez, a homeless man accosted by the NYPD through the use of LinkNYC, would give New Yorkers a limited demonstration of how the technology might be used. I'm on the phone with Isabel yet again as she clarifies Intersection's position, claiming that Rodriguez had been arrested 40 times before, and 'smashed 42 screens over the past 5 days — so we turned on the cameras to capture him.' Isabel assures me that Intersection is '[…] working with a non-profit to get help for this individual, as they're clearly mentally unstable,' stressing that the cameras were not in fact on and that they were only activated once Intersection had pinned down the location of Rodriguez. 'There has been a lot of misconceptions around this,' Isabel insists, 'the general public are actually pretty supportive of Link, but the people pushing back are from an activist group — very niche.' Isabel insists that fringe activists had managed to get it published in The Gothamist, but that 'it's not like it made it into the daily news or anything like that.' In the same breath, she explains how this was an opportunity for Intersection to release a public transparency report about data handovers to law enforcement agencies. The 'extended transparency report' released in the aftermath of Rodriguez shows the number of requests made by law enforcement

to turn over data held by Intersection and goes beyond subpoenas to include what agencies have requested and obtained existing footage. It does not, however, show requests made to activate cameras or monitor data activity in particular areas. I noticed an elaborate public relations dance between gaslighting fear of surveillance and the rationalisation of Rodriguez' resistance as a 'mentally ill' response.

5.2.2. Co-opting the Urban Milieu for Border Control

'What about the MOIA's digital services for immigrant communities?' I ask Yunus.

He shrugs dismissively —

'It doesn't help. It doesn't help at all. [They only help] immigrants who are [already] here, and are offered citizenship… Only refugee agencies are really the ones that are helping. The rest [are] just there. It's just information.
You give me information on the computer; which I don't know how to use.
You give me information about credit; I'm not worried about credit.
I'm worried about paying my rent.
I'm worried about getting my child to school.
I'm worried about… you just told me that my nine year old cannot stay at home, well how am I going to [go to work]? Who's gonna pick up the child? Those are the challenges that are faced by immigrants in this country, which are not addressed in a way that helps'

Elaborating on his many clients who would avoid digitally-mediated services at all costs, Yunus emphasizes that there's widespread 'fear that their information's gonna be out [which] is crucial right now [as] people are afraid of being deported. And they don't know even if their case is pending.' In most cases, there isn't ground for deportation, but Yunus' clients tend to prefer word of mouth for this reason.

> '... And again, there is a myth out there about accessing benefits. When you are an asylee or a refugee. Some nationalities don't want that because they feel like they will be considered as a public charge and will be deported perhaps. Therefore, they are afraid of accessing those'

Many of the newcomers I encountered in New York, first hand and via second-hand accounts from colleagues and peers at CAMBA, reiterated this fear. Attempts at upholding the city's mythological status as a "city of immigrants" remained firmly rooted in a techno-solutionist orientation to interventions; interventions which did not in any way factor-in to community experiences of the said information environment. For example, the City's rollout of an IDNYC identity card for New Yorkers

irrespective of immigration status was initially treated as a welcomed intervention. Yet, as the city planned to add RFID and financial capabilities to the card, leading to greater data centralisation, a coalition of immigrant and privacy rights organisations called upon the office to cancel the plans. Launched in 2015, with a current enrolment of over 1.3 million residents, IDNYC is a 'government-issued photo identification card' and is an attempt to mainstream access to city services, irrespective of status (Manhattan Times 2020). As per their website, the card is for everyone 'including the most vulnerable communities— homeless, youth, the elderly, undocumented immigrants, formerly incarcerated people, and others who may have difficulty obtaining other government-issued ID'.[67] By serving as an ID that can be used to interact with the NYPD, in theory, avoiding being taken into custody in the absence of ID, the card allegedly protects populations who are often subject to selective, biased, and persistent policing. While the card is available to everyone, it is considered especially helpful for refugees and undocumented immigrants, as a means for protecting immigration status from being exposed. According to Georgiana, CAMBA sends all their clients to get IDNYC at MOIA.[68] With the card only requiring a phone bill and a phone number to register, it does not reveal an address and is yet considered an, allegedly, sufficiently legitimate form of identification by the NYPD. While the card could have a considerable positive impact on the ability of the city to protect its immigrant population, an informant I connected with from the International Rescue Committee explained that they currently have little to no way of assessing whether it is working, precisely because no data was meant to be collected through the usage of the card. Nevertheless, as Grisha stresses, IDNYC hardly achieves the mainstreaming it purports to, as its recognition is still very much in question:

> 'So it's not recognised by some bars, It's not… you cannot get credit or loan whatever, because it's only very limited – it's not Chase. It's not citi[bank]. It's not Digibank. It's like some small banks, nobody knows about. But you can go to MoMA, you can go to Whitney, you can go blah, blah, blah. That's good, beneficial, sure. But when people have nothing to eat, they don't care about MoMA.' [69]

Yunus is equally perplexed by the apparent orientation that immigrant communities in the city require what both he and Grisha perceive as trivial features —'Really? What can I do with the New York City ID? Do you know what amenity it gives you? To go to the museum. And to go to the aquarium. For free right? You can go to any museum to any park – it's free. But you can't open an account with

[67] IDNYC: https://www1.nyc.gov/site/idnyc/index.page
[68] Field note, Georgiana, November 2018, Brooklyn
[69] Interview, Grisha, November 2018, Manhattan

it.' Immigrants don't care about IDs if they do not protect them… talk to me about affordable housing!'

This might soon change, as the city, along with MOIA, have been spearheading an effort to include financial services in the ID. Rather than extending access to mainstream banking as requested by immigrant advocates, the card is set to introduce a parallel track for financial inclusion, which has been critiqued for introducing even further risk to communities already at great risk of identification, detention and subsequent deportation. The proposed upgrade to the card would see it equipped with an RFID, enabling it to act as a prepaid debit card of sorts.[70] This would significantly compromise undocumented immigrants in particular, as New York City would be obligated to retain data (generating a centralised database on individuals or aliases attached to particular financial transactions); data which may or may not be accessed by law enforcement whose relationship with federal actors such as ICE remains murky. Adversarial actors such as the ICE, are furthermore technically capable of picking up information from RFID enabled cards at a distance (Stribling-Uss 2019); equally, if the card communicates its description as an IDNYC card, this risks raising suspicion around the status of the cardholder.

Even without the financial capabilities, cardholders have been known to have been profiled as potentially suspicious, and in some cases taken into custody despite producing the card upon request. Reviews on IDNYC's Facebook page from October 2018 document this: 'Very hesitant to use, especially after reading how much trouble it caused this undocumented hard-working immigrant delivering pizza to a local military base.'[71] The post is referring to the incident involving Pablo Villavicencio Calderon— a 35-year-old undocumented immigrant who was making a pizza delivery to the U.S. Army Base in Fort Hamilton in 2018. Ordinarily, Calderon would use IDNYC without a problem but was prompted to present a driver's license. In the absence of his license, security ran his background and found an open deportation order from 2010, at which point he was detained and later handed over to ICE (Robbins 2018). Calderon now faces deportation.

On another occasion, a couple attempting to visit their grandson – an Army sergeant –were detained on July 4, 2018, (Greenberg 2018). These are just a couple of examples demonstrating the consequences that the visibility produced through IDNYC, has led to. It stands to reason that advocacy groups would voice significant concerns toward any attempt to further enable the ability of authority to distinguish and identify undocumented immigrants using the card. It also calls into question, the recent elation at the intersection of digital and biometric ID systems, and refugee justice

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[70] Field note, Jane, September 2019, online

[71] Reviews posted to IDNYC Facebook page up until 7/10/2018 [data scrape]

broadly — who are they for? In the case of IDNYC and interventions like it, it is clear that they were designed with law enforcement in mind, not immigrants.

A number of these conversations would wind up leading me across the river to Manhattan, to a small shelter in Harlem, set up specifically for undocumented immigrants and refugees — with a particular focus on those identifying as LGBTQ+. With little visible signage, one would only know of one's proximity to the shelter from the somewhat hidden sign pinned next to the mailbox of a dilapidated local church, informing visitors that they had arrived at 'RDJ Shelter'. The façade of the church provided an enigmatic cover for this small but important operation. Visible for those who knew where to look, hiding in plain sight for those who did not, the material design of the shelter was in many ways a reflection of its – and many other organisations' – information precarious environment. 'People don't really want to put their names on lists out of fear of being outed' — I meet Adetola, a gay man and refugee originally from a West African nation, at RDJ. Adetola explains that RDJ residents prefer to call all service providers manually than to engage with any services digitally: 'In particular, there's a fear that political orientation – including the fear of being labelled as radicals – may flag up with ICE.' [72] Everything else, such as onboarding, coordination and organising, is done via WhatsApp groups. This is important for trans-identifying Central American, Black and gay, immigrants coming to RDJ, whose prospects of deportation is tantamount to an execution order.

This was also consistent with what I had heard from a senior organiser with RUSA LGBT – an organisation that helps LGBTQ+ identifying refugees and immigrants from former Soviet nations. Grisha underscores how this fear cuts through all aspects of socio-economic survival in the city; whether you're looking for information about or access to immigration services, housing, or work – there's a widespread abstention from engaging with the city's digital offerings. To Grisha, IDNYC 'is a joke' (even mentioning incidents of confrontation with law enforcement within his community of individuals using the ID to prove their age in a liquor store). Instead, everything, from immigration information, access to services and employment is mostly 'word of mouth because we cannot go and like [scream] "hire us". For security purposes, especially with ICE in the city, and everything like that.' Instead, RUSA takes advantage of an old Soviet-era anti-surveillance strategy he calls 'kitchen talk':

[72] Interview, Adetola, January 2019, Manhattan

> 'So you get together with friends in your kitchen, you're smoking, drinking or whatever. And you're discussing everything in the kitchen. It's like… from Soviet, because everybody [knew] big brother watched over you […], that's why you will go through the kitchen. Because the kitchen didn't have surveillance. And you can discard the politics and criticize the government.'

Grisha is worried about conflating slavery in the United States with the predicament of refugees and undocumented immigrants but emphasises that their kitchen talk could be seen as a contemporary instance of an informational underground railroad: 'but word of mouth, because it's face-to-face, it's more important in our culture. It's more secure. It's kitchen talk.' Through practices like kitchen talk, newcomers learn how to navigate the digital anti-sanctuary.

In September 2019, Councilman Carlos Manchaca (D-Brooklyn) submitted a bill that would prohibit the city from RFID enabling the IDNYC card (Sanders 2019). Meanwhile, the MOIA commissioner, Bita Mostofi, remained adamant that financial inclusion is a vital objective of the card; at direct odds with the Sanctuary City's duty to prevent any centralized storage of data on undocumented immigrants, which could be accessed by adversarial and/or federal actors (Ibid). A letter, dated September 12, 2019, drafted and signed by at least 46 community, labour, immigrant, civil rights, legal services, and economic justice organizations in New York, expressed its unanimous opposition against the inclusion of RFID technology in IDNYC:

> 'If implemented, the proposed changes to IDNYC would facilitate unprecedented, wide-scale data collection about New Yorkers' travel, spending, and other activities. Indeed, administration officials have spoken publicly about their express interest in generating "big data" and revenue through IDNYC cards equipped with smart chips. Even if well-intended, connecting this kind of technology and data to vulnerable New Yorkers' identification cards would expose people to serious risks—including dangerous experimentation or misuse by current or future administrations and private vendors—that far outweigh any potential benefits. These risks are particularly heightened given the Trump administration's escalating attacks on immigrant communities.' (Immigrant Defense Project et al. 2019)

5.2.3. The Myth of Access

> 'As if they're helping. Can you really show me what help [they] give? The only help they give… in New York… they offer health insurance — and nobody will tell you. There's no daycare, there's no after school, there is no place to live, rent or nothing. Some people get taken advantage of by the owners of the house because they are paying a lot of money on this shitty place to stay. […] And they make funny deals with like 10-16 people living in a small space upstairs. Check out the fire that happened a couple of years ago […] in

> the Bronx or Harlem, two families lost… Like what, 11 people died in that fire? Because most African – and most immigrants – we cook by way of frying, so they don't like smoke detectors. People from the Middle East don't like them either. [..] so 16 people died in the fire because they were crammed in one apartment. Because there's no space.'

Yunus is fed up. While immigrants in New York have been facing death owing to a lack of space, the Mayor's Office has been "innovating" their affordable housing project — a project that is commendable in theory but has turned out superfluous and obsolete at best in practice. 'They call it Housing Connect,' one of the Mayor's Office's flagship digital services aimed at housing immigrant and the poor. However, no CAMBA client – that is to say no newcomer, refugee, or asylee that Yunus knew of – had been successful with Housing Connect, an observation that remained consistent across the other immigrants' rights organisations I spoke with. During my time with CAMBA, Yunus regularly reminded me, with an extreme sense of urgency, that Housing Connect – should you be lucky enough to get accepted – could only provide cheaper rent bands due to subsidies received from the city. However, in the few cases where clients had been granted a tentative spot through the service, contractors had informally offered a part of the subsidy as a lump sum (approximately $10,000) — 'which for a person in need, will be very attractive, even if they will never be able to afford a place in New York with that money,' notes Yunus '—landlords prefer renting apartments at above market value, as richer New Yorkers are willing and able to pay.' There is, in other words, no *technical* fix to segregation and predatory housing practices in New York. Housing Connect layers existing systemic inequities with a reinforcing veil; under the auspices of social justice, it permits digitally augmented forms of segregation.

In 2012, New York City launched its online affordable housing portal, Housing Connect, giving New Yorkers the ability to search and apply for affordable housing opportunities. The system is held as an in-house database at the HPD, though all the applications go through a third-party marketing agent. The input information log is then sent to the housing developer, who will have to go through the log, selecting candidates following the marketing guidelines. Upon notification of selection, applicants are interviewed, after which there might be a follow-up interview, before housing is, in theory, finalized. Developers were incentivized to create affordable housing units through a subsidy, which in turn were entered into a lottery in coordination with the Department of Housing Preservation and Development (HPD), to allocate housing for low-income New Yorkers (Plitt 2017).[73] In 2012, a test website was launched to 'bring the agency into the 21st century,' and to

[73] The initiative intended to remove significant bureaucratic hurdles; an informant from the HPD explains that the process was completely manual in the past—applicants used to submit an envelope (containing the application) and would receive a log number on the address noted. Applications were subsequently all put into a trash bag and shuffled

create greater access to the lottery. When the system launched in 12 languages, it saw a surge in applications received; in 2017, the media outlet Curbed reported that 87,000 applications had been submitted for just 104 units (Plitt 2017). MOIA went on to list Housing Connect as an option for affordable housing for immigrants, right below a section notifying people of their rights concerning housing discrimination. The notification stated:

> 'Landlords cannot: Refuse to rent an apartment because of someone's immigration status, nationality, or religious beliefs; Post advertisements stating that certain types of tenants, such as immigrants or people from certain countries, are unwelcome; Fail to make adequate repairs or provide equal services to tenants because of their immigration status, nationality, or religious beliefs.' [74]

While there are no official restrictions on non-citizens, the income ceilings—and assumptions of household size built into the criteria— have been severely prohibitive of applicants from immigrant backgrounds. The previous requirement of positive credit history, along with social security or tax ID number added further barriers to immigrant populations. Although this requirement has since been revised to a 12-month rental history instead, newcomers often rely on informal housing options to get by in their initial period in the city, for which they may not be able to provide legitimate proof of rent. In my conversation with them, the HPD maintained that these circumstances are assessed on a case by case basis and that they welcome alternative forms of proof that can meet the 'spirit' of what is necessary.[75] My informant strongly emphasised their outreach work, e.g. their reliance on housing ambassadors to help immigrant communities with the application, not to mention their 'housing lotteries 101' sessions, in a bid to increase the accessibility of the program. But, my conversations with the HPD came to a halt following a long quest for access to data showing the income brackets that had successfully been housed through Housing Connect. A series of back and forth emails asking for proof on how the programme benefited poor and/or immigrant communities alike, that eventually led to cease in communication altogether. It became apparent, and a source of suspicion to me, that despite expressed willingness, this was not information the HPD wanted published in any way. While the Housing Connect portal has generated greater access to the application system, it remains entirely unclear if it has had any positive impact on immigrant communities, who continue to struggle with the process, as described.

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around, before anyone at the housing department was allowed to look at it. This led to several deficiencies: applications were lost, there was no guarantee that had a legitimate shuffle had occurred, and the paperwork alone was hard to keep track of, causing major delays.

[74] MOIA Housing Policy: https://www1.nyc.gov/site/immigrants/help/city-services/housing.page

[75] Interview, Abigail, March 2020, online

> '…And it's hard. There's no refugee coming to New York who's going to survive in housing. You're gonna work hard but two-thirds of your salary goes in housing and you will not make it. It's hard.' [76]

Housing Connect demonstrates the fallacy of the insistence on 'access' among technology advocates. Without an intentional structural and material reconfiguration of the dynamics that underpin the HPD's housing lottery, housing and rent-seeking practices in New York in general, tech interventions like Housing Connect simply reproduce them. David had warned me earlier that MOIA simply doesn't have the cultural competency to understand why clients don't want to cooperate or use their services. They will pride themselves on their progressive policies and their sanctuary status yet enable deportations based on benign welfare cases; deliver undocumented immigrant unto ICE through an ill-designed ID programme; unleash a data-harvesting Wi-Fi infrastructure with little to no safeguards, and; reproduce inaccessible housing through digital interventions. 'And then they wonder why immigrants don't cooperate.' [77]

5.3. Navigating Refuge in the Digital Anti-Sanctuary

New York City's predicament is convoluted by its situatedness as a smart city, casting uncertainty over how resident data is collected, used, and shared by the city's digital service offerings and surveillance infrastructure. Indeed, its extensive surveillance capabilities often compound the anti-sanctuary, in two ways: first, through generating what I have observed as *information panics*; that is, forms of informational precarity that disincentivise affected populations from engaging with city services. Secondly, through the instrumentalization of the smart urban milieu for immigration enforcement/border control. While information panics reinforce the anti-sanctuary through further coercing affected populations into urban concealment, the instrumentalization of city infrastructures expands the field of vision for adversarial immigration authorities such as ICE, CBP, and the NYPD. Consequently, the already limited ability of people to move freely in the city is under significant threat. In this way, the so-called border wall is survived by a far more expansive urban containment infrastructure, that performs violence across racialised and gendered lines, concurrently soliciting self-disclosure, self-censorship and self-discipline.

The unspoken consensus between the Department of State, the City, and Silicon Valley giants has cultivated the conditions under which digital forms of disaggregated urban migration control is

[76] Field note, Yunus, December 2018, Brooklyn
[77] Interview, David, September 2018, Brooklyn

possible. While MOIA's digital pathways to sanctuary have been weaponised by law enforcement agencies including ICE and taken advantage of by other adversarial actors, they have perhaps even more importantly, given impetus to, paradoxically, both a logic of externally imposed enclosure and self-imposed urban concealment. The information control architecture, and technologies referred to in this chapter, recruit precarious migrant populations into the digital periphery, by categorising them as needy (in need of technical solutions to their predicament), criminal and elusive (justifying their identification, monitoring and surveillance), and containing them through limiting mobility and access via information panics (or direct interception, detention, and deportation). The enclosure of the digital periphery, in other words, continues to work across techno -developmental, -spatial, and -governmental lines.

But, it is also simultaneously resisted. Marginalised migrant communities, activists and allies are organising apace with new realities. One of my CAMBA informants who supported asylees in their career development had noticed that her clients were increasingly 'laying low,' digitally.[78] The care with which data trails were avoided appeared as a consistent theme throughout my engagements, not just at CAMBA. This, paired with a distrust of mainstream sources of information (including large media outlets and the city directly), had led individuals with precarious immigration statuses to become 'avid fact-checker[s].' [79] Farukh and many others at the refugee and asylum seeker support group have a scepticism 'for things that are not hard to obtain, including information.' For Farukh, the information landscape had become too 'political – there is a lot of anxiety and pressure amongst seekers of asylum, who worry about their residency status.' At the same meeting, Abbas and Talal explain that there is in reality only two ways in which useful information can be gathered and shared, securely: either through a diaspora-based WhatsApp group, referencing their membership to Guinean and Sudanese groups, where news about immigration in the U.S., as well as politics in Guinea and Sudan, were shared or via U.S. based diaspora radio hotlines, which broadcast news about Guinea and Sudan to the U.S., while also operating a phone-line connecting listeners to corresponding radio channels in Guinea or Sudan to relay important news. Both Abbas and Talal showed me their correspondence with the hotline, which was coded as a frequent/favourite contact on their phones. Precarious immigrant communities go to painstaking lengths to keep the information environment decentralised; this was as true for Farukh, Abbas and Talal, as it was for Grisha and his clients who engaged in 'kitchen talk' as a *sous*veillance tactic. At CAMBA, the decentralized approach was woven into the social fabric of the workplace. When I initially started working with them, Anita had

[78] Field note, Alex, December 2018, Brooklyn
[79] Support group meeting, Farukh, October 2018, Manhattan

insisted we needed a better understanding of where we might be able to find housing for asylees and refugees on special visas (SIVs), as she was convinced this was knowledge not currently housed within CAMBA. Yet, what my interactions with caseworkers showed me – who themselves had been refugees once – was that this knowledge was very much held and shared between caseworkers and clients from their respective diasporas. For Albanians, it was the old 'Vatra' society and Alb TV, while the youth engaged mostly on the 'Albanian roots' Facebook group; for the Russian and formerly Soviet diaspora, it was the 'Ruske Reklama' paper (ads for jobs, housing and help in general) and kitchen talk; for Sudanese people, it was WhatsApp, and in some neighbourhood, an internal Wi-Fi mesh network that extended several blocks, providing not only free connectivity but an intranet for information relevant to the community). While this made it harder for Anita to centralised knowledge around viable avenues for housing, she admitted that 'the division is both healthy and inefficient.'

Anneliese and Erin from Human Rights First insisted on the importance of real face and body networks; this is why they started running the refugee and asylum seeker support groups, creating space for sharing best practices around how to work the system — 'they know this in a way [our] organisation just doesn't.'[80] These are spaces where best practices, solidarity and emotional venting, occurs. These 'underground world[s] of different ethnic communities' were organised to foster solidarity and a sense of belonging not otherwise provided by the city; Erin reflects on how she had been raised to know about these informational hubs in the context of the West African diaspora, given her Malian heritage; Annaliese nods, pointing to the Cuban networks she remains a part of.

Several months after returning from New York City, I caught up with Anneliese again, amidst a further intensification of ICE raids, and the acceleration of Mijente's NoTechForICE campaign. As public consciousness around ICE's entanglements with Silicon Valley giants grew, I wondered how this might have affected the support group —

> '… it has really made people on guard in a way I haven't seen before. I think that's the intention, mission accomplished. It has made people less eager to apply for legal asylum… Of course, people are still doing it, but people are worried. […] It feels like a lot of the work we're doing is such a waste of time. We're having to put out so much fire! We should be out there working on cases, working on trauma. But it's by design; to distract us from our ability to do our work. Our clients are always traumatised, always adapting to a new culture, [always] rebuild[ing] their life; but now in addition to all those things, people also have to be afraid of dealing with ICE. […] It comes up at every meeting. […] What's gonna happen to the people around me? What's gonna happen to

[80] Interview, Anneliese and Erin, September 2018, Manhattan

my family? […] People are worried that having a pending asylum application won't necessarily keep them safe.' [81]

The moment Annaliese describes is sensitive and complex, to say the least; a technologically sophisticated border enforcement regime acts as both a distraction *from* important immigration work and an active gaze *on* immigration work and life in the city. A duality that further constrains and disciplines life in the digital anti-sanctuary. To challenge this would mean to dismantle the digital infrastructure of the city altogether. In the words of Amelia: 'At the end of the day, infrastructure is infrastructure. Who owns the networks?'

Few urban technology initiatives escape the scepticism of groups with precarious immigration status in particular – while outside of the remit of this thesis, gig-economy apps, for instance, have also been significant sources of uncertainty, information panic and wage theft. In stark contrast with most initiatives pioneered by the City, Good Call NYC stood out to me, as a simple call-based hotline which connects individuals to their nearest available public defender in less than 40 seconds. Set up through a social incubation programme at Blue Ridge Labs at the Robin Hood Foundation, Good Call was set up with the understanding that arrested individuals who did not connect with a legal professional within their first 30 minutes of being detained were more likely to be incarcerated on false grounds. The concept is simple; individuals often don't know who to call upon being transferred to a precinct. Contacting family or friends is often not a source of remedy. Good Call's intervention asks that affected communities memorise the number 1-833-3-GOODCALL. Using a Twilio backend (a cloud communications platform that allows for complex routing of calls and text messages), Good Call can put New Yorkers in touch with their nearest participating public defender (think of it as an inverted 9-1-1 service, for especially racially targeted populations). Through partnerships with the Bronx Defenders, the Legal Aid Society, Brooklyn Defender Services, NDS of Harlem, NYCDS, and Queens Law Associates, the hotline covers all five boroughs of the city.

Perhaps it was the unique de-centring of the intervention from technology; rather than insisting on a "smart", aesthetically sophisticated "high tech" product, Good Call appeared to focus its work on the augmentation of existing channels of resistance. In conversation with one of the founders of the initiative, I also learned that while the organisation had been founded and housed within, arguably, one of the premier U.S.-based philanthro-capitalist foundations and incubators, with significant interest from tech giants and venture capitalists, they had struggled to receive funding beyond initial incubation, owing to their refusal to act as a marketing platform, to charge for, or in

[81] Interview, Anneliese, August 2019, online

other ways benefit off of, their use.[82] In many ways, Good Call's approach veers on the side of neo-Luddism (as far as dismantling the inequitable gains and losses of the rapid development and deployment of new technologies is concerned). Mark explains at our second meeting that Good Call has made a point out of neither accessing nor facilitating the access to data from clients using the services. Much like David from BDS, Good Call advises partnering lawyers to inform clients not to tell them more than they have to, in fear of adversarial surveilling parties. In terms of undocumented immigrants at risk of detention by ICE, Good Call is 'in competition with existing MOIA hotline, and governor hotline,' says Mark. Converse to their city-run competitors, 'we [Good Call] don't market for this [towards undocumented immigrant communities] as it can look suspicious and create unnecessary visibility [of them].' While Good Call has not been built explicitly for the many persecuted undocumented immigrants that use the service, it is not a coincident that it has sought to rapidly scale to cater especially for communities affected by the deportations raids.

5.4. Conclusion

Historically an aggressive site of immigration enforcement, assessment and control, the emergence of New York City as a digital anti-sanctuary was set in motion long before Trump's rise to power. The border wall is but a symbolic front for the internal process of bordering enabled through the institutional decay and a digitally weaponised city.

The implicit consensus between the Department of State, MOIA, and Silicon Valley giants has led to the development of sophisticated digital urban infrastructures, priming the city for disaggregated migration control. These technology deployments, in turn, insert technology actors in the business of governance. While initiatives such as LinkNYC, IDNYC, Housing Connect, and others, purportedly give the city's refugees, asylees, and undocumented immigrants alike access to crucial digital services intended to improve life in urban refuge, my encounters demonstrated a resulting 'information panic' among migrant communities. The cost associated with the usage or exposure to these services is perceived to be equivalent to volunteering data that could be used to detention or deportation, or simply a waste of time.

Needless to say, that current data practices are a significant hazard in cities of sanctuary for persecuted migrant populations in particular. In hostile immigration environments, the availability of a vast number of data-points can be instrumentalised by federal immigration enforcement officers for

[82] Interview, Mark, September 2018, Brooklyn

location tracking, detention, and eventual deportation. The fear of deportations against the backdrop of an advancing digital urban infrastructure, in particular, has exacerbated the information panic in New York City, leading communities to engage in practices of refusal, such as urban concealment. In spite of this, cities such as New York continue posturing as "sanctuaries", while facilitating the rapid and lucrative entrenchment of Silicon Valley in the fabric of urban governance. The city is, in other words, a legitimising ground for the Valley. Technology giants superimpose neo-colonial relations of power in the urban context. Here, marginalized populations play the role of the test population – the *digital periphery* – under the auspices of whom technology corporations can win major contracts with cities that not only finance their interventions but legitimise their access to population data (which is in turn commodified and used for the iteration of further products).

Chapter 6 | Digital Refugeeness in Berlin

In this chapter, I investigate refugee-tech in Berlin. Contrary to New York City, these interventions do not necessarily sustain surveillance structures related to immigration enforcement in the city; nevertheless, they commodify and datafy subjectivities. The increased availability and usage of apps to access information, services, work, and housing potentially transforms the ways in which refugees access life in the city. With little to no oversight and accountability, this neoliberal approach to urban refuge in Berlin risks perpetuating the deep-seated myth that refugees and vulnerable migrant populations are made of fundamentally different matter; that their needs, literacy, and even desires around flexibility and stability, are distinct and by nature more precarious. This, in turn, gives rise to *digital refugeeness*. Digital refugeeness does not depend on demonstrating relevance or benefit for the communities it encompasses to exist; in fact, it exists almost purely for the enjoyment of experimentalism and the solicitation of technical and financial capital between urban-entrepreneurs, larger tech companies and governmental as well as non-governmental institutions. While in New York, the digital anti-sanctuary was fundamentally about disciplining physical movement, digital refugeenees is about exploiting the subjectivities of moving bodies. These encounters continue to shed light on the workings of the digital periphery, and how seemingly disparate and decentralised forms of digital socioeconomic interventions convert the refugee's predicament into a laboratory.

6.1. Situating the Refugee in Refugeeness

> Nadim: 'Like, I certainly lost a couple of friends or contacts to that behaviour. Because, yeah, of course, people don't expect a refugee to come and say "You're full of shit", or "your idea doesn't work"'
>
> Matt: 'Why not? Why shouldn't a refugee?'
>
> Nadim: 'Because you just get help. That's it. Like, that's… that's the thing. And well, if we ask for your help or to volunteer, [you're going to do it] probably because we're gonna frame [your project] for the media'[83]

Nadim is referring to the "boom" in digital refugee initiatives – especially apps – that Berlin experienced in the two years prior to the 2016 EU-Turkey deal (intended to restrict the number of asylum-seekers coming into Europe) (Betterplace 2019). In my first few weeks in Berlin in late

[83] Interview, Nadim, May 2019, Berlin.

February 2019, I had conducted a mapping exercise in collaboration with the Betterplace Lab. During the exercise, we had found at least 70 such initiatives, with a large proportion of them having been established in 2015-2016. With self-identified remits to address issues as diverse as orientation information dissemination for new arrivals, to job-matching, language learning, and housing, these technologies seemingly offered to extend access to "integration" for newcomers.

The initiatives were driven in large part by a combination of volunteers, technologists, and civil society organizations. Between the second half of 2015 and the second half of 2016, projects were emerging weekly, at times almost averaging daily start-ups, before tapering off in the latter half of 2016 (Betterplace 2019). The sudden decrease in initiatives is attributed to 'a dimming of public and media attention to the issue and a decrease in the number of arrivals'—again, due in part to the EU-Turkey deal of March 2016 (Betterplace 2019: 9). As the narrative of 'Wilkommenskultur' ebbed, the field of refugee-tech consolidated; the ones that remain have tended to be either entangled with municipal governance (*e.g.* 'Integreat' and 'Handbook Germany'), or with big tech company CSR strategies (*e.g.*, Salesforce's investment in 'Jobs4Refugees,' Google's investment in SINGA and Techfugees, and Facebook's investment in 'ReDi School').

At the time of writing, around 40 refugee-tech initiatives remain (spring 2019) [84]. Nadim, who I met during a refugee-led research workshop organised by G100 Berlin, had been contracted to work on an earlier mapping project with Betterplace before my arrival. He's acutely familiar with most if not all of the initiatives, not least as they appear to reproduce a similar tradition of techno-humanitarian interventions that he came upon while living in Greece. He indulges me in a series of frank conversations surrounding the politics of Berlin's refugee-tech industry. Nadim is one amongst a dozen of newcomers and former refugees who I came to know during my time in Berlin, most of whom hailed from, largely, advocacy, resource and information-sharing initiatives such as the G100, Refugio, and Syrische Frauen in Deutschland. While few, if any of them, were themselves, tech entrepreneurs, a large proportion of my time was also spent in engagement with refugee-tech initiatives led by predominantly German and European individuals and the organisations that gave rise to them, including Techfugees, Integreat and Jobs4Refugees. Through these encounters, I explore Berlin's digital refugee response as a form of digital ghettoization, in which the abstraction of *digital refugeeness* is constructed as an avatar to attract funding and claim political solidarity. To that end, I adopt a critical orientation towards optimistic narratives on the affordances of the "smart city" for refugee integration and make a nascent attempt at giving greater weight to newcomer epistemologies

[84] See Annex I

of survival in both the digital and non-digital city. While Chapter 5 explored how digital initiatives transformed the urban environment for people with transient immigration status in New York City, Berlin is a foray into how refugee subjectivity is transformed for capital by tech.

Critical techno-cultural inquiry into how refugees and newcomers in actuality use (or not) these technologies and how they are experienced (Brock 2016), provides invaluable insight into the political workings of purportedly apolitical and benevolent interventions. Contrary to New York City, refugee-tech in Berlin does not necessarily sustain surveillance structures related to immigration enforcement in the city; nevertheless, the increased availability and usage of apps to access information, services, work, and housing potentially transforms the ways in which refugees access socioeconomic life in the city. Refuge in Berlin today is, unavoidably, digitally mediated — constrained and enabled by digital maps and apps. In the name of techno-urban entrepreneurship, spheres under the purview of local authorities and the state, have increasingly been encased in privatized digital layers specifically tailored towards refugees. With little to no oversight and accountability, this neoliberal approach to urban refuge in Berlin risks perpetuating the deep-seated myth that refugees and vulnerable migrant populations are made of fundamentally different matter; that their needs, literacy, and even desires around flexibility and stability, are distinct and by nature more precarious. This, in turn, gives rise to what I observed as *digital refugeeness*.

Digital refugeeness allows for the development of "refugee-tech" without the input or involvement of displaced individuals at the iteration phase. Despite the broad use of existing channels of both digital and non-digital communication among refugees and newcomers, digital refugeeness mutes the subjects of concern by substituting refugee leadership in assuming their backwardness based on tired tropes of technological inferiority. Mainstream channels are instead ignored and sidelined in favour of the development of new platforms altogether. Digital refugeeness does not depend on demonstrating relevance or benefit for the communities it encompasses in order to exist; in fact, it exists almost purely for the enjoyment of experimentalism and the solicitation of technical and financial capital between urban-entrepreneurs, larger tech companies and governmental as well as non-governmental institutions. The digital periphery disciplines "refugees" with the language of gratitude and presumed backwardness, creating a regulatory vacuum under which those affected by governance are unable to affect it; they are flattened, instead, into digital refugeeness, converting the refugee's predicament into a laboratory for racial capital.

6.2. Packaging the Proximate Other: There's an App for That

At the time of commencing my research in Berlin, four years had passed since the death of Alan Kurdi had sparked significant outrage across Europe's liberal artists, policymakers, and civil society alike (Smith 2015). Germany's 'refugees welcome' sentiment had grown in tandem with the rise of Europe's 'New Radical Right' (Guibernau 2010), as the continent sought to reckon with its image as, at best, passive and, at worst, permissive, of the continued violence and death experienced by displaced populations attempting to reach its shores. Reflected in these supposedly affirmative approaches to refugees, however, is a continual process of reproducing the same logics underpinning anti-immigrant sentiment. As per Danewid, the much-celebrated "Wilkommenkultur" (culture of welcome),

> '[…] reproduce[s] the underlying assumptions of the far right: Namely, that migrants are "strangers", "charitable subjects", and "uninvited guests". By focusing on abstract—as opposed to historical—humanity, they contribute to an ideological formation that erases history and undoes the "umbilical cord" that links Europe and the migrants that are trying to enter the continent' (2017: 13)

Far from a new phenomenon, Europe's renegotiation of itself as a liberal progressive project coming out of the post-war era has been more so a project of historical obfuscation; a demented approach to the artificial curation of a European civic nationalism supposedly grounded in a collective vision of peace and prosperity. It forecloses the centrality of the continent to the production of racial capitalism, as explored in chapter 3 and in so doing, the genealogy of contemporary institutions and structures, including that of the European Border and Coast Guard Agency (Frontex) and the multiplicity of strict and violent post-9/11 national border control regimes. These cannot be disentangled from the continent's historical production and reproduction of racial order (Erel et al. 2016).

Refugee-tech – apps in this case – serve a similar function to Wilkommenkultur. In so far as they *mirror* the German gaze, they fuse a plethora of diverse displaced individuals to the designation of the de-historicised decontextualized *refugee.* Nadim, a 28-year-old Syrian researcher I met in Berlin, deconstructs the underlying premise of refugee-tech and the people behind them, unveiling a fundamentally essentialising process:

> 'The thing that bothered me the most is people who think they're helping, but they're not. And they're getting all the credit for it. […]. So like, okay, let's say somebody came up with […] an AR school for refugees. Like augmented reality, and everybody would be wearing the 3D thing and like, learn languages from […] Yeah, it sounds cool, right? Sounds like futuristic and all. I mean, you might get funds, it might be framed and covered on a couple of TV channels or newspapers. But yeah, that's all good. But this is *for you*

> *[the refugee]*, so does it really work? That's the question. And it seemed like many people were not really asking themselves this question […]. That didn't really go well with me. Because [in tech development], most probably they are actually treating refugees as an object – as a very fixed well-known object, which is not the case.' [85]

The brand specificity alone – with the digital initiatives being marketed in the name of the refugee (e.g. *Integreat, Jobs4Refugees, RefugeesWelcome, RefugeeText, Techfugees*, etc.), and yet falling short of any further granularity, allows for the already racialized figure of the refugee to take on a technologically mediated managerial disposition, of digital refugeeness.

Nadim and I are sat in a café in Friedrichshain in East Berlin, a now largely gentrified formerly working-class quarter. Since the fall of the Wall, the area has become established as an up and coming young, and at times radical, stronghold of artists and creatives. With its weekend artisan market at Boxhagener Platz, famous night clubs, anarchist squatters, and a slew of Australian cafés, Friedrichshain couldn't stand out more from the neighbourhood it shared a borough with (Friedrichshain-Kreutzberg), especially the handful of blocks that made up the informally referred to 'Kreutzkölln' area (situated between Kreutzberg and Neukölln). While Kreutzkölln and the surrounding area was the home and gathering spot to the many newcomers I spoke with during my time in the city, with its Arab, Turkish, Syrian, Lebanese, and Persian restaurants, grocery stores and residents, Friedrichshain was – for a lack of a better formulation – the liberal centre of Berlin's well-meaning white-saviourism. From this safe distance, academics – such as myself – NGO workers, and technologists with messiah complexes could dream up their socio-technical visions for saving the refugee through their various "integration" projects. Nadim and I had met a few days earlier, when we attended a workshop organised by a newcomer research initiative known as the G100, in response to the seeming lack of consultation and inclusion of refugees and migrants perspectives in policy-making and integration interventions at large. Nadim had appeared somewhat ambivalent about the workshop, cautioning that even with its valuable insights, nobody would listen.

Alongside my conversations with newcomers, I had been determined to find ways of engaging in long-term conversations with technologists engaged in the refugee-tech space and had developed a relationship with Techfugees. In a conversation some weeks before the workshop, a Berlin chapter lead of Techfugees had gone to painstaking lengths to pitch his vision of a solution to the "refugee problem" to me: 'Germany is not doing enough at a policy level. Refugee integration should be offered as a service'. [86]Matteo's vision is one in which municipalities and venture capitalists fund

[85] Interview, Nadim, May 2019, Berlin
[86] Interview, Matteo, April 2019, Berlin

third party private organisations to provide tools for 'refugee integration [where there is already] a war for funding'. I was admittedly taken aback when Matteo explained that his approach was 'apolitical, and therefore better for the state. It would [help the state avoid] having to wake the AfD beast'.[87] Matteo's perspective is not just a vision, but an astute reflection of how epistemologies of survival are side-lined in favour of capital; it's a reminder that well-connected European urban-entrepreneurs like Matteo are more likely to receive funding, support, and an audience, for their interventions in refugee governance, while individuals like Nadim, with lived experience and membership in the communities in question, are asked to simply be grateful for the ideas of the Matteos of the world. Matteo laid out his four-point plan: 'First, we set up a syndicate of VCs and funders across Europe. Step two, we hook up tech entrepreneurs around Europe with funders – also because refugees don't stay in one place. I want to create a *sharing house of ideas* for refugees. Finally, we would *sandbox* different configurations of tools.' Throughout my many engagements with Matteo and Techfugees Berlin, he remains resolute in his primary objective to woo venture capitalists and entrepreneurs building tools for refugees. On one or two occasions, he did suggest and contemplate the possibility of funding a tech incubation programme for refugee women but remained predominantly concerned with 1) establishing Techfugees as a clearinghouse for VCs interested in putting money into refugee-tech, and 2) continuing running hackathon's that would help solve the refugee "crisis". One sympathetic chapter member and collaborator of mine, who had positioned herself as a critical check and balance on Techfugees' rampant 'techno-solutionism,' describes the group's approach as voyeuristic at best 'There's some real camp-voyeurism on that WhatsApp chat, Matt. People just want to get to the camps, to find needs for their solutions'. [88] Recasting refugees into an essentialised *other*, the refugee tech enterprise transmutes human subjectivity into financially decipherable objects, attracting capital from tech giants, venture capitalists, and local authorities alike in the process.

As my encounters have shown and continue to demonstrate throughout this chapter, whiteness is more receptive to one-dimensional decontextualized "refugees from refugee-land", rather than equally complex human beings. Nadim shrugs: 'And now [they're treating them like] they're all in one camp and they all are gonna be the same kind of instance.'

[87] Alternative für Deutschland – a far-right anti-immigrant political party in Germany.
[88] Field note, Anna, April 20219, Berlin

6.3. Selling the Proximate Other: The Refugee-Tech "Bubble"

'A business that's getting value because it's refugee business [...] of course it's good, but a failure of the system' Sarina tells me. [89] As one of the G100 organisers, she had initially invited me to join as a notetaker and to support one of their workshop facilitators. The workshop itself was geared around engaging with newcomers of varying immigration statuses, to learn about challenges that were not currently addressed by interventions by the state (these included 'civic engagement', 'access to the job market', 'access to education', and 'personal development'). [90] Sarina explained that the G100 had become an important space for newcomers because Germany had fallen short of recognising the individual needs of people who happened to be refugees and had instead created a generic and homogenizing integration pipeline. While Sarina had been completing her degree in medicine in Syria, she soon realised she would have no say whatsoever in what job she would end up with upon arrival in Germany: 'They decided it for me and transferred me to the job [at the job centre]'. As a result, she became a translator, recounting that it was considered one of the positions with greater mobility, but that ultimately, this outcome was arbitrary as the jobcentre only considered language among her potential employable assets. Despite these low expectations, Sarina went to great lengths to ensure she would be able to re-qualify as a doctor, even if it involved restarting her degree. Sarina described how many others in her circumstances had been offered to start a "refugee business", be it a catering house or a café, but that ultimately the substance didn't matter as long as the refugee narrative was being sold: 'There's a difference between selling tools made by "victimised people" versus selling products made by professionals whose craft it is. If you take away the victimised narrative, it's not special'. In her experience, in Berlin, Syrians are converted from agricultural engineers to Uber drivers, and from lawyers to 'Supermarkt' workers. Inversely to how Cheney-Lippold describes our existence on the internet as, first and foremost, dividuals, due to a lack of discernible characteristics connected to our individuality (Deleuze 1992; Cheney-Lippold 2017), constructing and selling the proximate *other* creates dividuals out of real-life individuals, by stripping individuals of their discernible characteristics and flattening them. The few digital initiatives Sarina had come across added marginal value to newcomer life in Berlin, as 'mostly they repost existing job ads on their own platforms. The only value add is that they might call the place you applied to, to see whether they considered you'. [91]

[89] Interview, Sarina, May 2019, Berlin
[90] Field note, 'G100 prep day', April 2019, Berlin
[91] Interview, Sarina, May 2019, Berlin

Online representations of race (and Blackness in particular) are culminations of programmed Whiteness and offline perceptions of race (Brock 2016). In hiscase, online and offline iterations of "refugeeness" come together to solidify the purportedly known nature of the proximate other. The following examples are particularly illustrative of this paradigm. [92]

6.3.1. Integreat

Integreat was born out of efforts by volunteers who were helping newcomers in the wake of the 2015 arrivals. The team was situated in different volunteering organizations, that were all facing the same problems: handing out printed flyers with information to help navigate the immigration bureaucracy did not make sense when laws and regulations were changing every week. Camps were emerging and then closing in many parts of the country. A lot of information quickly became obsolete or was simply not communicated. The Integreat team got together around the idea of creating an electronic platform of sorts—in this case, an app and a website—where up-to-date information could be provided digitally for refugees and migrants. Integreat is available on Android, iOS, and as a WebApp, and works through contracting with different municipalities across Germany that wish to provide digital information about their bureaucracy to refugees and migrants. As the tool has a very user-friendly municipality facing dashboard, which they can populate with information, the Integreat team informed me that the municipalities had simply started using the tool as a way to communicate information to their residents altogether—with a particular focus on EU migrants.

As municipalities are responsible for updating the information on the platform, and they do not necessarily have refugees in mind as their first service population, information quality varies across different municipalities. [93] Similarly, while the project received its initial round of funding largely in response to meeting the challenge of information provision specifically for refugees, they currently do not have a definitive method by which they understand who uses the service. As it stands, they rely on word of mouth from city authorities, with whom they also conduct their usability testing, but with effectively no awareness of how refugees or newcomers use the tool. The Integreat app, in other words, runs the risk of becoming a symbolic front for action on part of municipalities, without any real obligation of ensuring that crucial information is delivered or understood.

[92] The full database of mapped apps can be found in Annex I.
[93] Interview, Stan, March 2019, Berlin

6.3.2. Jobs4Refugees

Among a host of other digital job-matching services, Jobs4Refugees generated particular elation in Berlin. It provides not only a platform through which job-matching could occur but also—to varying degrees—facilitates the negotiation process between employer and employee, typically in an attempt to 'warm them up' to the idea of hiring a refugee. While the initiative is novel, conversations with the team revealed that the longest recorded time of someone staying in a Jobs4Refugees mediated position has been around six months and that this tended to vary greatly.

The president of the Federal Office for Migration and Refugees expressed concern in November 2019 that 'migrants and refugees who work in very low paid jobs are stuck in very precarious situations and could suffer from old-age poverty in the future' (Wallis 2019). The president's concerns came out against the backdrop of one of the highest number of newcomers since the post-war era who needed to be processed into German society. In response to this, the common justification became somewhat focused on refugees as economic stimuli, in a moment of an ageing and depreciating labour force. It is unsurprising, then, that many largely neoliberal, flexibilised work initiatives emerged, purporting to tackle the issue of employment/replenishing the German labour supply, with potentially precarious results for refugees. When held up against the consistent complaint from newcomer communities about the barriers to qualification recognition, it is easy to see how at times very highly educated individuals fall into a precarious work trap. What is more, the German (though also globally) "refugee tech" scene tends to discursively describe two forms of refugees: the seeker of *any* job (usually menial/flexibilised), and the tech entrepreneur (looking for coding lessons, and funding for their tech project). Both scenarios are precarious, and essentialise and flatten refugees into a form of neoliberal conformist urban dweller.

Finally, Jobs4Refugees partners with corporate giants such as Facebook, Salesforce, and Accenture. While it is worth noting that these companies are invariably also involved with developing refugee-oriented technologies, they are companies that have been documented to have bad data protection practices. In some cases, they have contributed directly to the surveillance of migrants by actors in the deportation machine, as is the case for both Salesforce and Accenture, companies that hold contracts with U.S. Customs Immigration Enforcement, and spearhead ID2020 Alliance's digital blockchain-based ID system, respectively). Furthermore, it is unclear what client data Salesforce—a company that provides the dashboard for communication between Jobs4Refugees, and their clients, free of charge—has access to. There are many initiatives like Jobs4Refugees (see for instance Workeer), some of which more openly offer flexible/remote or microtask-based digital work. With

large technology companies as their backers and precarious labour practices, they risk encoding urban precarity among newcomer populations, while keeping capital in circulation and generating potential data dividends for backers such as Salesforce.

6.3.3. Handbook Germany

Funded directly by BAMF, and in partnership with T-Mobile and Adobe, Handbook Germany has in recent years attempted to position itself as the go-to source of information for newcomers. As per their description:

> ‘Every country has its specific characteristics. We know what it feels like to be new in Germany because many of us have gone through the same experience. Here we offer essential tips on asylum, housing, health, kindergarten, university, work and much much more in seven languages. The Handbook Germany team provides crucial information on an extensive range of topics—here you can find from A to Z of life in Germany on a single website!’

Contrary to many information dissemination tools in Germany, Handbook Germany has dedicated editorial staff who coordinate with the BAMF to deliver important information, not simply through text, but also through short videos and Facebook communication. Yet, there is still little clarity over to what extent the tool is used by refugees and newcomers.

‘You download them and then they’re incompatible, or they stop being serviced after a while. Most of the time, if people do download a refugee specific app, they end up deleting them — but technologists use the download count to justify continuing anyway’ says Hakan, a researcher and Syrian refugee I met at Refugio. [94] Making his best diplomatic attempt at confronting the bizarre and uniquely European phenomenon of surprise at finding refugees with smartphones in hand (a sentiment emerging from the not so historically coincidental conflation of refugees from the “Global South” with poverty, depravity, and the under-class) (O’Malley 2015), Hakan shrugs, recounting how numerous European researchers had approached the newcomer residents of Refugio in an effort to discover how refugees use their smartphones in the everyday. ‘We’ve done this research already’, Hakan insists, while searching his laptop for a paper he had co-authored with the Berlin-based academic, Safa’a AbuJarour. AbuJarour and Hakan had analyzed the mobile phone home screens of 101 refugees in Berlin (subsequently compared to home screens from 107 Germans, and 72

[94] Field note, Hakan, May 2019, Berlin

immigrants), which, in a nutshell, revealed what many in Europe might have considered a surprising result: more often than not, refugees rely on similar apps for obtaining information as anybody else (AbuJarour et al. 2019). Mainstream tools with household names were far more frequent on home screens than anything designed specifically for refugees (as summarised in Table 6.1).

Table 6.1. Most commonly used apps in refugees and newcomers

App Name	Total Sample (%)
WhatsApp	69.64
Facebook Messenger	37.86
YouTube	37.50
Facebook	31.79
Instagram	26.79
Telekom.de	20.71
DB Navigator	16.79
arabdict	13.93
Spotify	13.21
Snapchat	13.21

Source: Safa'a AbuJarour et al., 2019.

A close facilitator and collaborator during my time in Berlin, Edin (also a mutual connection of Hakan's) had aired his grievances on this subject with me just days before Hakan: 'It's like they think we are lab rats. They do a big survey, collect our information, and then they leave and we never hear from them. At first, we were happy to help because we thought [these] Germans could help us, but after a while it [got] exhausting. I personally have been involved in twenty projects at least'.[95] A common thread across Nadim, Sarina, Hakan and Edin's grievances is the extractive relations between technologists/refugee tech initiatives and the "refugeeness" of newcomers. AbuJarour's work reveals that refugees and newcomers hardly use this refugee tech. Nevertheless, their salience in attracting funding and their discursive power is not trivial nor immaterial disruptions to newcomer life in Berlin. As per Georgiou, 'not everyone speaks and is heard in the same way; not everyone is equally represented, even if most are digitally present' in the digital age (Georgiou 2018). In other words, these initiatives rely on newcomer communities, superficially, to symbolically legitimise the existence of refugee tech. They rely, desperately, on the image of refugees, not their voice, which in turn, reinforces iconographies about the refugee that sustains a loop that keeps funding out of newcomer communities and in the hands of technologists. This is why Nadim calls refugee tech *'a bubble'*:

[95] Interview, Edin, April 2019, Berlin

> 'Helping people should not be a wave; it should not be a bubble. Now, helping refugees *through* tech is even worse, and should not be a bubble. Now entering the tech scene to help refugees and get plenty [of funding]… it should not be something "cool" to do […] There's a lot of the application where they're like "let's do another WhatsApp for refugees"… Like, well, why don't we just use WhatsApp for refugees? "Because refugees need to use another application, wow wow wow, you didn't know that?" So yeah, "let's make a new social network for refugees" […] I see a lot of this!' [96]

The generation of value for these initiatives, in other words, takes place outside the tech company. In her work on post-industrial value creation in the digital age, Terranova describes how social, cultural, and economic networks that surround and exceed the internet, the 'outernet', 'connects [the internet] to larger flows of labour, culture, and power' (Terranova 2004). Even though the value of these tools is essentially negligible for newcomer communities, the whiteness underpinning the internet has given way to a modus operandi of value generation that is chiefly concerned with reinforcing and selling German generosity, through the proximate other, rather than servicing diverse problems.

6.4. Refugee Integration as Techno-Capitalist Ontology

To carry out Nadim's bubble analogy to its conclusion, the politics of refugee welcome and integration is ontologically intertwined with not only racial logics but the racial logics underpinning Silicon Valley. The seemingly artificial value of refugee-tech apps is possible precisely because, rather than providing 'a free technology for social relations' (as they often insist) (Mohler 2015), technologists sit on the capital means to 'enclose technology and social relations [previously] in the commons' (Ibid).

While the Valley's investment into refugee tech apps (e.g. Facebook, Google Startups and Salesforce in particular) should raise concern, the diversion of funds to refugee tech, from the likes of the German Federal Office for Migration and Refugees (BAMF), German municipalities, and the UNHCR, is of even greater concern. In the same way that 40 per cent of European start-ups that are classified as AI companies do not, in fact, use artificial intelligence in a way that is 'material to their businesses' (Vincent 2019), refugeeness has also become 'catnip to investors' (Ibid). In contexts of migration, technology often acts as a gateway for authorities and institutions to appeal to narratives of gratitude and victimhood in refugees for political expedience; to advance an image that positions them (aid-recipients) as fundamentally different to us (aid-providers) (Georgiou 2019; De Laat in

[96] Interview, Nadim, May 2019, Berlin

Bennett et al 2016). This is particularly problematic against the backdrop of a global hostile immigration environment (Goodfellow 2019), in which the politics of welfare state membership is inextricably tied up with xenophobic posturing by right-wing parties in particular, as evidenced by Matteo's earlier comments on 'refugee integration as a service.' Hidden behind the outward-facing veil of welcome is a techno-assimilationist fantasy of control. Control that both circulate capital and designates the racial order of refugeeness.

After some months of chasing, I was able to secure a sit-down with one of the founders of Jobs4Refugees. We had been communicating via calls and over chat for a while and had organised to meet for a more detailed conversation around the inner workings of the initiative. Tom tells me things have been hectic around the office, with the team having to prepare for the visit of Prince Charles and the Duchess of Cornwall.[97] He tells me the project came about when they learned they could register 200 or 180 refugees in two days just by hanging up signs in different languages' near urban camps, stating 'we're trying to help you find work':

> 'We quite simply start cold calling employers asking them whether they're open to hiring refugees, and then facilitated between the two sides. And after one month, we thought, this is perfectly okay. This is actually leading somewhere that we feel okay about. If us two numbnuts can do that, then, then anyone else can do that [..]. We had quite some media coverage in the beginning, which led them to some people actually phoning us with more money' [98]

Tom explains that they used the money to set up Jobs4Refugees as an organisation. In their Facebook page likes, Jobs4Refugees found an unexpected source of symbolic capital. Tom draws what appears to be a false equivalence, conflating what visitors to the page would see as the aggregate number of 'likes,' and 'refugees,' stating that the user journey 'starts on our Facebook page where we have 22,000 refugees'. The International Rescue Committee, who reported on Tom's earlier-mentioned royal visit, also describe Jobs4Refugees as follows: 'the organisation communicates job offers to around 22,000 refugees nationwide and supports applicants and employers throughout the entire application and recruitment process'.[99] Given that basic familiarity with Facebook pages would reveal that there is, in fact, no way of verifying the immigration status of individual followers, and

[97] Royal Germany Tour Recap: The Prince of Wales and the Duchess of Cornwall split their time in Berlin and Munich, 2019. Royal Central. URL https://royalcentral.co.uk/uk/royal-germany-tour-recap-the-prince-of-wales-and-the-duchess-of-cornwall-split-their-time-in-berlin-and-munich-125343/ (accessed 10.17.20).
[98] Interview, Tom, May 2019, Berlin
[99] The Prince of Wales and The Duchess of Cornwall meet refugee women in Berlin [WWW Document], 2019. . International Rescue Committee (IRC). URL https://www.rescue-uk.org/press-release/prince-wales-and-duchess-cornwall-meet-refugee-women-berlin (accessed 10.17.20).

Tom's responses below, I have to assume that Jobs4Refugees are not in actuality interested in quantifying refugee engagement.

> Matt: 'In your experience, what attracts refugees to your platform, as opposed to other initiatives or going through anchor-communities, or going through other job boards or government?'
>
> Tom: '… to be honest, I don't know. We've never had a problem in admissions, we worked with a bunch of migrants. And we went through Facebook, we hardly ever had a problem with the acquisition of refugees or like getting a recognition for a job. So… it was never something that was kind of like, *a highly effective cost to evaluate*'

One can speculate that for Tom, determining why someone would use Jobs4Refugees is not 'a highly effective cost to evaluate', because it ultimately remains a secondary objective. At the time of our conversation, Tom and his team had recently courted Salesforce as a partner. With a prospect of significant funding from the Salesforce Foundation, Tom admits that there is 'a tension between also aiming for funding' and continuing the work they had done during their pilot. At the time of writing, Jobs4Refugees has partnered with both Facebook and Accenture, and won the German 'integration prize.' I asked Tom how long they were projecting to be in business, expecting that a refugee job-matching service would either dissipate as the number of newcomers tapered off or be absorbed by the state. 'I guess there's no like… there's no expiry date in mind'.

This was not the first time I had heard about a tech initiative "selling" refugee demographics to funders; alongside my research in Berlin, I was in frequent conversation with informants from the humanitarian sector who had previously worked on the SignPost and Refugee.Info initiatives (information-sharing projects that used to be jointly held by the International Rescue Committee and MercyCorps). They similarly presented that the '1.5 million unique users in 8 different languages' that a MercyCorps employee had reported to me as the number of refugees that the initiative engaged with, [100] was the total number of followers across a handful of different refugee.info Facebook page instances. [101] Initiatives such as Jobs4Refugees and Refugee.info demonstrate that value can be extracted from refugeeness alone; that, as per Terranova, the tech intervention in and of itself cannot mobilise capital without the cultural and political significance bestowed upon by it by the images of the 'vulnerable' refugee and 'benevolent' funders.

Another modality through which refugee tech functions is through failure. We would be remiss to brush off initiatives that fail as inconsequential to the materiality of refugeeness. Taqanu is

[100] Interview, Kelsey, January 2020, online
[101] Interview, Maddie and Rebecca, February 2020, online

one such initiative that provides some insight into this: a blockchain-based digital banking and identification system, Taqanu was conceived:

> '…four years ago, when Hungary built a fence against refugees during the heat of the so-called refugee crisis, and I was living up in Norway […] And I felt like I could.. should do something maybe, and having a couple of conversations with refugees who I could meet in Norway, it kind of became fairly clear that like, their largest issue is accessing a bank card or bank accounts. So, then the idea came, like let's make a bank for refugees.' [102]

Yanos tells me the idea was essentially to use 'social credentials and user behaviour' as an additional layer of authentication, in the absence of trust in printed paperwork. He uses the terms 'untrusted network' to describe what he's trying to build, though it might have been more appropriate to call it 'a network of the untrustworthy.' However, having only anecdotally engaged with refugees, Yanos had expressed in an article I read before our interview that one of the biggest obstacles to innovations like his was access to refugees. Yanos now tells me this was no longer an issue, as they been brought in under several large partnerships, predominantly in Kenya, Uganda and Ethiopia, under the 'Smart Communities Coalition', funded by Mastercard.

Taqanu eventually ran out of funding and they never fully got the project off the ground. In Yanos' view, however, it still played out well for Taqanu compared to other 'identity sort of companies that like, created a lot of buzz, raised money, and then they are nowhere to be found,' as their initiative has pivoted to exclusively providing consulting services to institutions, including the UNHCR, based on their expertise. He explains, rather matter-of-factly, that 'we are just doing consulting on the topic of identity and the theme is a bit softer connected [to the original project], because money needs to be made'

The above examples demonstrate how refugee tech is a superficial engagement with refugees, and an intimate and consequential engagement with *refugeenees* reveals its frontier for techno-capitalist extraction. Refugeeness is but an avatar, a categorisation which in addition to commanding capital, broadcasts a representational message about the raciality of refugeeness, which serves a disciplinary function (Benjamin 2019), insofar as it conditions society to perceive anyone(s) loosely affiliated to the avatar *as* the avatar, proper.

[102] Interview, Yanos, July 2019, online.

6.5. Can the Digital Refugee Speak? Invisibilised Epistemologies of Survival

I am on a call with a lawyer from the Gesellschaft für Freiheitsrechte (GFF) when I first find out that German border officers had been exposed for running analytics software on the devices of new arrivals, analysing the entirety of the phone's system for markers of the origin of the nationality of the person (using a broad set of data, including apps, languages, and historical location data). In the absence of a presentable passport, the BAMF introduced the policy in 2017 that allows the office to 'extract and analyze data from data carriers such as phones in order to check their owner's stated origin and identity' (Turß 2020). The system, which generates a report from every instance of extraction, is accessible only to lawyers but is kept out of reach from applicants. Bizarrely, the GFF's findings unveil that not only is the practice in itself an extraordinary breach of privacy but also almost entirely useless. Their report summarizes that 64 per cent of cases contain no usable results, 34 per cent confirm the origin and identity claims of the individuals, while only 2 per cent contradict the applicant's claims) This is unsurprising, given that – as established previously by AbuJarour – the configuration and selection of apps on the phones of newcomers are practically indistinguishable from their German counterparts (perhaps with the exception of the Arabic dictionary, which could well encompass many geographic origins). The BAMF practice is yet another example of the persisting myth of digital 'refugeeness' as a discoverable characteristic.

As explored in previous sections, digital refugeeness gives credence to the myth espoused by technologists and policymakers that displaced individuals are somehow removed from the technical know-how and products of the west, and unfamiliar with existing popular social networking tools and in need of specific platforms; that their needs, literacy, and even preferences for stable vs. flexible jobs, are distinct. While emergent scholarship has directly surveyed newcomers on their tech usage, my engagements with my informants was a constant reminder about the extractive nature of this flavour of scholarship, from which newcomer communities stood to benefit very little if at all. In this section, I continue to reflect on the critical perspectives of community leaders and researchers on the tech interventions that continue to insist on digitally fusing them to their so-called refugeeness. I also draw on research findings collated by newcomer communities through the G100 workshop in Berlin, which goes some way in communicating the gaps as they saw them in Germany's refugee politics (gaps that remain unaddressed by every refugee-tech initiative I came across). Groups like G100 Berlin aim to generate a more vocal discourse around the policy changes that are required to make lives for refugees better, steering the conversation away from its somewhat persistent techno-fetishism.

‘You need to really understand this fragmented, diverse, complex community of refugees. or else you just... like you can't. Well, first of all, you can't help at all right. And even if you take a small fraction of it, like, you might not really answer their needs’ says Nadim, emphasising the cognitive dissonance apparent in how technologists in host communities reduce, simplify, and essentialise newcomers for technical expedience. During this particular conversation, Nadim and I had been speaking for what felt like hours. Nadim recalls his fascination with the world of start-ups, as he indulges me in his previous ventures while we walk a little further down the street to grab a drink at a nearby bar. He reminds me that of course Syrians also set up digital initiatives to help newcomers. Crucially, however, these tools (such as ‘Make it German’ and ‘Bureaucrazy’) do not make representational claims on refugee identity. Rather, they point out gaps in the everyday of newcomers and provide patchwork shortcuts around them. Nadim contemplates: ‘Technology is cool... it’s nice but it is not magical, and digital solutions.... they're not going to work for this. And they're not enough. You need social interaction. Human to human interaction’. In Nadim’s experience, the tools that have been the most useful for displaced populations, even for ‘illiterate people [who] had nothing to do with technology’, were Facebook and WhatsApp, ‘because they need that to actually survive and connect with the friends and family for strategic things. [103] Hakan had similarly noted in an earlier conversation that the most useful technologies were infrastructural, emphasising tools such as Facebook groups over WhatsApp: ‘When I came in 2014, I didn’t need info made especially for refugees – I had people around to ask, and preferred it this way’.[104]

Edin and I are having coffee in Charlottenburg when he tells me about the first time he heard about, and met, one of the executives from Techfugees. Edin chuckles at the number of refugee-tech initiatives I had identified to him earlier: ‘They announced 210 initiatives! Apps… where you could look up services in German or Arabic. And people were not using it’. [105] Surely one of the tools would have had some salience with a newcomer, but Edin is steadfast in his reply when he compares the apps to the equivalent of a random person putting information out into the ether:

> Edin: ‘Because we didn't know about it, we don't trust information from the internet. Why should I trust [it]? And I mean, you have no idea [who has shared it]. Okay, I'll tell you something. If you open this [opens his phone's browser] and you find whatever information you would like, would you believe it?’
>
> I shake my head.

[103] Interview, Nadim, May 2019, Berlin
[104] Field note, Hakan, May 2019, Berlin
[105] Interview, Edin, April 2019, Berlin

Edin: 'Okay, so this is how it is for us. It didn't happen in our life that we trust, that I open [this device] and then I have [trustworthy] information.'

Matt: 'Okay. But if you knew that, for example, Mohsen has put the information up, what then?'

Edin: 'Yes. Yes. If Mohsen, the guy that I know, yes. Then that's another thing – random people putting information [out] – that's not social media. So, it's like googling and just seeing an article, that we didn't [even] read'

Edin takes out his phone and shows me a plethora of Syrian knowledge-exchange Facebook groups based in Germany. He shows me his Facebook messenger inbox, where friends are asking him about refugee and newcomer policies – he points out one friend, Mansour, who wanted to attend the G100 but was worried about his safety given his disability ('someone like Mansour might reach out to me or others to ask that we [accompany] him as he might need protection').

Any further effort spent dissecting newcomer interactions with technology runs the risk of reproducing the paternalist and perhaps neo-colonial attitudes involved in studies that treat immigrant communities as in need of being discerned; as 'lab rats,' as Edin mentioned earlier. My encounters thus evolved to take a greater interest in sentiments of direct and indirect technology refusal (in reference to digital refugeeness in particular), particularly in the way that groups like the G100 collated the sentiments of newcomer communities around the shortcomings of refugee policies in Germany.

Upon Edin's recommendation and an invitation from G100, I took part in their inaugural Berlin workshop. Throughout the day, rotations were made by some 40 people attending the workshop across four different tables, with each table tackling a different topic. I was stationed at the 'civic engagement' table[106], where the elephant in the room was quickly revealed to be "integration":

'I hate this word "integration", I hear it in the news, in class, in the street'
(workshop participant)

'At this point, I want to say that the word "integration", it doesn't work. Because it means to remove and to delete everything I know in my life, just so I can live here. So, if we can change this word integration to inclusion'
(workshop participant)

'The word integration is shit because it assumes that we are a homogenous whole who can be integrated through one-size-fits-all solution. So, a solution would be to challenge

[106] See appendix for complete notes

> the way the whole society thinks and talks about refugees. This is a process, a discussion, not just a policy to be carried'
>
> *(workshop participant)*

> 'We fall into the trap of perceiving the refugee population as one fixed entity. It is not, it's very dynamic, it's very unique. Integration assumes that this is something fixed.'
>
> *(workshop participant)*

The workshop, while intended to also serve as an opportunity for communities to develop solutions to their grievances, took a life of its own as the exchange and critical insights on refugee policies and interventions became an avenue for airing and addressing grievances. Chief amongst them, the implication of "integration" insofar as it constructs refugees as a homogenous whole (what I refer to as *refugeeness*), and remedially, the need for political organisation through coalition-building across immigrant communities of various statuses. Notably, these grievances illustrate the dearth of understanding, whether deliberate or inadvertent, amongst refugee-tech initiatives of the newcomer communities they purport to serve.

For Nadim, this was the primary purpose of G100. He described his deep wish that people would realize how much power they hold. 'In a few years, one million refugees will have voting power. This is very serious. And if the young G100 community organizers are too inexperienced, they might not be able to see past the smiles of politicians. We need to realize the power we hold and the power that we [will be able to use] in places like Berlin and Hamburg, where power is concentrated in parallel with how othered communities are concentrated'. [107]

6.5.1. Refusing Refugeeness: Breaking the Mould via Feminist Knowledge Production

Sarina, the organiser I met earlier, has seen the form of organising that can cut through the insistence on refugeeness. 'Oh, it's still a Facebook group', she says, '[but] think of the knowledge produced in this group and how many lives changed because of it and the good advice is given and so on' – Sarina is speaking about Syrische Frauen in Deutschland, a Facebook group set up purely with the intention of sharing knowledge about navigating life in Germany between newcomer women. Despite being 19,000 members strong (just 3,000 short of the number of 'likes' on Jobs4Refugees Facebook page), Sarina is sure that no German would take it seriously, because it's Facebook. [108] But Syrische Frauen was a far cry from interventions I had come across before. Sarina tells me women 'archive, [write]

[107] Interview, Nadim, May 2019, Berlin
[108] Interview, Oula, May 2019, Berlin

topics, tag [posts], and so on. And they have house rules for communication. And in my opinion, the way the group started, and the way it's working now, they have worked really hard to create this communication culture and it has become a very supportive group.'

Sarina introduced me to the founder of the group. Herself a Syrian newcomer, Yara had conceived of the group when confronted with the need of a centralised, but human, knowledge repository as she was preparing her move. The group, which was started in 2016, was run exclusively by and for women:

> 'My friends, who are men, they were saying — even Syrian men who have their own groups — they were coming to me "Yara, please ask this question for me, you women know how to talk about things better than us", so I use it [on their behalf] for my close ones' [109]

Sarina and Yara had both told me about countless of other Facebook groups that ended up being co-opted largely by men, who tended to turn these spaces into toxic political battlegrounds:

> 'But now all the information is only from the members, from the women who are in the group, and they're really interacting in amazing ways, no one posts a question unanswered; this is impossible. All the question has people to answer them. And without asking or encouraging them. Just, people got used to sharing. I want to share my experience; I want people to know about what I know about Germany, we just made it a good experience for all women in the group.' [110]

Yara walks me through the group. The landing page is a feed containing a pinned post with the available tags (these include 'education', 'housing', 'child-care', 'immigration', and 'jobcentre' among others). Yara and her handful of content moderators had gone through every question posted and added a unifying tag so that visitors could jump straight to posts relevant to their query. Yara also underscores that a lot of decisions are mediated through the consultation of fellow women in the group; emphasising that this was an act of empowerment, as opposed to information-seeking, per se:

> 'For example, there was a post, a young woman was asking "hey girls do you think that if I graduated from the university at age of 35, it's still possible to get a job, or do you think it's better than I don't get a master now and just look for a job?". She was talking about the age, and that was interesting because 90% of the women were like "no go for the studies, you will have a chance" and that was really nice'

As per Pruchniewska (2019), without explicitly being feminist, spaces like Syrische Frauen create a 'bordered' safe space, which keeps at bay not only toxicity from self-identifying with the

[109] Interview, Yara, May 2019, Berlin
[110] Ibid

same diaspora but also the German gaze and its insistence on a linear and top-down "integration" policy. The group has flown under the radar – not under a greater conspiracy to keep shrouded in secrecy, but because information about it was disseminated through members of the diaspora, *for* the diaspora. Not unlike Andre Brock's observations on Black Twitter, as technology augmented spaces for displaced populations are less inundated by the sensationalism afforded to the notion of refugee-tech during its early days, so their relevance – albeit in the "mundane" form of the standard-issue Facebook group – become more salient (Brock 2020). The existence of this particular iteration of a women's only 'e-diaspora' in relative anonymity, repels the spectacle which would otherwise alert technologists to the market potential of the initiative (Appadurai 1996; De Genova 2013).

6.6. Conclusion

As explored through the genealogy of refugee and migrant reception in New York City and Berlin in Chapter 4, there has been a convergence of the hostile immigration environment and Silicon Valley logics. Since September 11, 2001, European narratives undergirding racial discrimination and differentiation have been 'overwhelmingly cultural' and 'flaunt ethno-racial categories decided on the basis of religious identity ('Muslims' being grouped as a de facto race), national or geopolitical origins ('Middle Easterners'), or members in a linguistic community (Arabic-speakers standing in for Arabs)' (Heng 2018: 20). This discrimination and differentiation is particularly pronounced in transient spaces such as airports, across news media outlets, and consistently in the context of refuge (Ibid). Against the backdrop of this increasing framing of the question of non-assimilability of the 'European Muslim' in particular, technologies that single out particular populations e.g., through digital refugeeness, reinforce these hegemonic discriminatory narratives. Whiteness, as this chapter has shown, is more receptive to one-dimensional decontextualized 'refugees from refugee-land' [111] than equally complex human beings. In the abstraction of the digital, online and offline iterations of "refugeeness" come together to solidify the purportedly known nature of the proximate other (Brock 2016). This has given way to a modus operandi of value generation that is chiefly concerned with reinforcing and selling German generosity, through the proximate other. Meanwhile, the value of these tools remains essentially negligible for newcomer communities.

Refugee tech is, in other words, a superficial engagement with refugees, and simultaneously an intimate and consequential engagement with *refugeenees*. Interrogation of this avatar reveals how

[111] Interview, Nadim, May 2019, Berlin

technology actors in the digital age engage in categorisation which in addition to commanding capital, broadcasts a representational message about the raciality of refugeeness, serving also a disciplinary function (Benjamin 2019). By emphasizing and artificially constructing different channels for access, these technologies further entrench these processes of stigmatization of place, people and practices. This instrumentalization of newcomer subjectivities for technology production provides both the appearance of controlling refugee destinies and for technologists, a "sandbox" on which experimentalism on newcomer communities can take place. As these initiatives continue to demonstrate a dearth of understanding of the newcomer's predicament, affected communities are increasingly engaged in refusal.

New York City and Berlin are illustrative of profound transformations in cities of refuge. These changes have tended to be two-fold: first, through the erection of digital urban infrastructure that bifurcates the city beyond post-Fordist terms, and; second, through the production of value contingent on the image (but simultaneous absence) of marginalised subjects. This allows cities such as New York, who welcome and facilitate ICoTs in the form of Public Wi-Fi enabled ad boards that offer immigration services, municipal ID systems, and online affordable housing lotteries, to continue posturing as "sanctuaries", while facilitating the rapid and lucrative entrenchment of Silicon Valley in the fabric of urban governance. The ultimate consequence of this is the technology-driven disciplining of physical movement. Meanwhile, configurations such as those in Berlin create the conditions under which the market is reinforced, while state actors engage only in a funding and marketing capacity. This allows corporate entities behind refugee-tech to keep capital in circulation in the name of refugees, while state actors retain a symbolic veil of proactiveness against the backdrop of the refugee crisis. In contrast to New York, digital refugeeness in Berlin exploits the subjectivities, rather than the physical movement, of moving bodies. In both scenarios, technology actors benefit from extended powers, whether by direct centralized means or in indirect decentralized ways. They are the logics that describe how the digital periphery weaves together seemingly disparate geographic contexts in the pursuit of racial capital.

ICoTs developed for refugees and vulnerable migrant populations in urban contexts are the latest in a string of technologies, which help turn borders into 'increasingly […] mobile, portable, omnipresent and ubiquitous realities' (Mbembe 2019: 9). When situated within an understanding of the dynamics of racial capitalism, the role of technology deployments *as* the border starts to crystalize.

Many see this in terms of algorithmic governance. While there remains a lively discourse that is critically oriented towards the interrogation of algorithmic systems in particular (e.g. in the field of AI & big data, as reviewed in chapter 2), how they operate (Noble 2016; Cheney-Lippold 2017), what specific variables they use (Benjamin 2019), and how service providers and caseworkers view algorithmic output (Eubanks 2018), this work is far more interested in how "algorithms" are unveiled through human negotiation and meaning. Rather than being concerned with the inner workings algorithmic systems themselves, I locate the truth of the systems at the core of my research – namely Information Control Technologies (ICoTs) – in how they are experienced, phenomenologically, by those who are (and are not) subject to them in the everyday.

In this dissertation, I have deliberately distanced myself from attempts at making any serious claims about the inner technical workings of the so-called 'black box' (Pasquale 2015; Christin 2020). Instead, I have sought to locate how ICoTs operate on marginalized subjects in particular, experientially, and through the active witnessing of how these systems shaped everyday experiences of life in digital cities of refuge. I deployed ethnographic methods to not only show 'how collectives of human and non-human actors emerge, solidify, and evolve over time' (Christin 2020: 906), but to demonstrate how human actors unveil the disposition of non-human infrastructure power (Easterling 2014). In addition to 'build[ing] the technologies, implement[ing] them, and us[ing] them in their daily lives' (2020: 913), humans – even in their non-use or even refusal – confer meaning and reveal partial truths about the technologies. This was inspired not in small part by immigrants' rights and activist endeavours, such as Mijente's NoTechForICE campaign, who have sought to challenge the technical infrastructures underpinning ICE's deportation machinery, on the premise of their experienced effect within communities.

That is to say, the *technical* "how" has already been (and is being) appropriately addressed by scholars in STS and the widening field of critical race and digital studies (CRDS), to which I aspire to contribute. Through short ethnographic encounters, I elucidate instead the *experienced* "how" – the result of which I have broadly formulated as the digital periphery. I pay less attention to technical dimensions, focusing more on bridging the ways in which these interventions have represented (or

not) communities that I worked with, with my informants' perspective. In so doing, I give greater epistemological weight to populations whose resistance towards all manners of carceral technologies are often gas-lit or side-lined for being too radical (Benjamin 2020). In the same vein, I have attempted to demonstrate how ICoTs selectively coopt, in their aesthetic, characteristics of the subject (e.g. refugees and migrants), in order to claim proximity and distance at the same time.

Thus, I have sought to show that three prisms make this digital periphery legible, namely techno-development, techno-space, and techno-government. These can be thought of, by analogy, as three distinct vignettes of borderization[112] (Mbembe 2019). And, as critical race and migration scholars such as Maynard (2019) and Mezzadra (2020) have argued, the border – whether in its contemporary iteration, particularly across the Mediterranean as a re-emergent locus, or through its historical iterations, such as under conditions of Black fugitivity in the Americas – is a site of death and capture. The rapid digitalization of the "migrant crisis", and the borderization of technology deployments, expose a colonial continuity of the racializing objectives of the border; it promises 'death, removal and containment' at, between, and beyond the border (Maynard 2019: 125).

In the first part of this chapter, I outline the enduring ways that the digital periphery challenges conventional analyses of the world system; in particular, notions of development, space and governance. Here, I argue for a radical reorientation of scholarship to include the digital periphery as an analytical lens to holistically capture how technology actors re-introduce, re-animate, and reinforce *categorisation* and *containment* as modes of technology-driven subjugation under contemporary racial capitalism. In the second part, I discuss the implications of the digital periphery for life in urban refuge, reflecting in particular on the implications of the transformation of the post-Fordist city into digital urban infrastructures; scepticism about datafication practices and the possibility for trust, and; the emergence of urban migration control and the possibility for sanctuary. Finally, I explore the potential for resistance, revisiting how a handful of initiatives I came across engaged in what I have referred to as neo-Luddite refusal, while on fieldwork.

7.1. Techno-development

As described by Anita from CAMBA, service providers such as social and caseworkers have no time or resources to extensively interrogate interventions offered, purportedly, "for free". They're in a

[112] '[…] the process by which certain spaces are transformed into uncrossable places for certain classes of populations, who thereby undergo a process of racialization' (Mbembe 2019)

position where they're 'having to behave like poor people and accept bad deals with high interest'.[113] The deployment of modernization tropes and logics by technology actors legitimates their interventions in the lives of un/deserving others, who are categorised and essentialized into a non-agentic grouping of people, in the name of whom experimental digital interventions are iterated. These political groupings are hence either contained in space and subjected to ICoTs (as was the case with public Wi-Fi infrastructure and "smart" ID initiatives in New York City), or virtually contained through the intervention itself (as evident through Integreat, Jobs4Refugees, Taqanu, and many other initiatives coming out organisations such as Techfugees and the "refugee tech" moment, in Berlin). The intervention enables the tech actor to extract the raw materials needed to develop further products, i.e. data (Fejerskov 2017; Thatcher 2016; Benjamin 2019; Zuboff 2019;), and it drives financial capital from philanthropic actors, venture capitalist, humanitarian actors and governments to the tech actor, who intervenes on their behalf. This section demonstrates how the digital periphery operates *techno-developmentally;* that is, under the auspices of modernisation logics inherited from a long tradition of mediated representation of the needy subject in humanitarianism and development. The digital periphery matters in terms of techno-development in particular as it carries forwards existing colonialities of power, through control of subjectivity and knowledge (Quijano 2000). The uses of displaced populations in New York City and Berlin are just two examples of this.

The insistence on the 'worldview' – to paraphrase RethinkLinkNYC – that frames technology deployments as meeting a socially justifiable need is laced with the same colonialities of power inherited from modernization logics. Whether through the imposition of LinkNYC kiosks, the introduction of RFID chips in IDNYC, digitalisation of the inequitable Housing Connect service, or through the investment in refugee specific apps in Berlin. As AbuJarour demonstrates in her analysis of smartphone usage by refugees, more often than not, refugees rely on similar mainstream apps for obtaining information as the next person (2019). Madianou (2019) and Tsibolane and Brown (2016) have written extensively about technologies deployed in humanitarian and development contexts, or ICT4D, as colonial practice, with the language of efficiency masking underlying colonialities of power (Quijano 2000). When Anita invokes a "poor countries"' metaphor, she is also pointing to the existence of the same problematic colonial dependencies of ICT4D but embedded in an urban "Global North" context.

[113] Interview, Anita, December 2018, New York City

Thus, practices ranging from smartphones vendor reliance on the 'exploitation of Chinese workers at Foxconn factories', e-waste dumping in poorer countries including Ghana,[114] right through to the provision of a rudimentary limited (but free) version of the internet by Facebook's Free Basics program (Madianou 2019), and the deployment of ICoTs in New York City, are connected. Connected through the digital periphery.

More often than not, the technology deployments fail to deliver on the promised distributional efficiencies. Yunus' outrage at IDNYC is emblematic of this. That the promotional selling point of IDNYC tended to focus on free or discounted access to museums and aquaria, all the while making it easier to detain and deport undocumented immigrants, is a particularly disturbing paternalistic orientation to incentive structures. It unveils the continued fallacy of modernization theory, demonstrating that so-called "users" of technologies deployed under such auspices are *not,* in fact, the beneficiaries. This is also clear from the deficit in local knowledge input and production, which is treated as an obstacle at best, while inferior and a hindrance to "development" at worst (Fejerskov 2017). Similarly, in Berlin, Hakan remained baffled in the face of the ever patronising and Eurocentric insistence on discerning refugee usage of smartphones – the mere ownership of the handset remained, as previously discussed, an object of great surprise and controversy in the public discourse across European nations. It follows, then, that the refugee is written off as "under-developed". The digital periphery relies on and augments these inherently patronising, racialised and neo-colonial attitudes towards displaced subjects.

The techno-capitalist orientation of Matteo and Techfugees towards refugee "integration" as in need of being offered "as a service" in Berlin, is a key moment in which this comes out. For Matteo and Techfugees, techno-development is *apolitical;* for them, politics must be bypassed in the name of progress, which Matteo equates to municipalities and venture capitalists funding tech initiatives to offer "integration". The unchecked imperative to engage with problematic technology actors in a bid to perform 'techno-development' in communities of '"know-nots" [...] in need of Western structures and infrastructure', however, reaffirms the enduring modernist nature of development practice (Granqvist et al. 2005: 292). The implicit consensus between the Department of State, New York City, and Silicon Valley giants to develop the city's urban infrastructure while also priming it for disaggregated migration control, can be seen as one manifestation of Matteo's vision, albeit on a different scale. It also demonstrates that public-private entanglements of this kind are never apolitical.

[114] See for instance Grant 2016, Daum et al. 2017, on e-waste dumping in Agbogbloshie, and; Nkrumah 1965 in Tsibolane and Brown 2016, on neocolonialism and British political and economic control in Ghana.

Certainly, in the context of migration governance, these partnerships stand to augment the data capture capabilities at the centre of the surveillance to deportation pipeline in New York City.

Largely beholden to donors (Hasselskog & Schierenbeck 2017; Dirlik 2012), and their deliverable requirements, these initiatives perpetuate and diffuse 'a far wider set of socioeconomic logics and practices undergirding the characteristic impositions of the current stage of global capitalism' (Franklin 2015). These differential practices '[...] in turn, affect the ways science, technology, and knowledge are developed and how they are used and applied throughout society' (Estabrooks 2017: 38) — a recurring cycle that perpetuates the production of technologies with accompanying social structures, and vice versa, gradually expanding hegemonic social and economic relations wherever they are deployed.

Against the backdrop of the camp-voyeurism documented by a sympathetic informant from Techfugees, who incisively noted that 'people just want to get to the camps to find needs for their solution,' technologists have managed to find urban test-beds malleable to their fantasies about refugee needs. This is inherited from techno-developmental logics, that draw from a long tradition of mediated representation of the needy subject in humanitarianism and development, part and parcel of a crucial component of Quijano's colonialities of power matrix, namely control of subjectivity and knowledge (2001). In particular, the underlying messaging of humanitarian imagery as often ethnocentric 'moral rhetoric masquerading as visual evidence' (De Laat in Bennett et al. 2016: 26). As Sarina's experience in Berlin reminds us, refugee tech is nothing special without a 'victimised narrative.' De Laat outlines a standardised 'humanitarian arc' that tends to underpin these reductive forms of representation: stage 1) 'the victim, invariably described as "innocent"', in this case, the refugee (Ibid.); stage 2) 'a villain' (can be a disease, disaster, etc), in this case, displacement, and; stage 3) 'a hero, in most cases either a technology or a person of light skin and of socio-economic privilege' (Ibid). In this particular arc, refugee-tech is a stand-in for whiteness, extracting dividuals from displaced subjectivities, and constructing and selling the proximate other. In other words, digital refugeeness is not only a spatial concept but one that is given salience by developmental logics.

As actors who have profited from utilizing the Global South as a "lab" for untested experimental technology interventions, technology actors superimpose neo-colonial relations of power in the urban context. This is a continuity of relations of power central to racial capitalism. Indeed, from the very beginning, racial capitalism *evolved* out of feudal Europe and its pre-existing racialism ('antagonistic differences' across 'racial, tribal, linguistic, and regional particularities') (Robinson 1983: 10). Racial designations in Europe were marked by a number of variables, including, but not limited to, those that might define people as 'indentured peasants, political outcasts, [the] poor

or orphaned females', or any number of other strata belonging to Europe's own 'barbarians' (Ibid). Rather than to homogenise and flatten in Europe, throughout feudalism and especially into the capitalist era, racial capitalism has mandated an accentuation of difference along 'regional, subcultural, and dialectal' lines forging these into 'racial formations' (Omi and Winant 1986; Robinson 1983). These formations continue to have salience, further fortifying the digital periphery through techno-development

Today, well-known technology giants like Cubic (involved in defence contracting with Israel), Intersection/Alphabet (track record of involvement in the development of tools used for surveillance), Amazon (extensive record of workers' rights abuses and the provision of AWS server space that powers ICE's digital deportation infrastructure), and Microsoft (designed the Domain Awareness System in NYC, and provide Azure Cloud Infrastructure services to ICE, among others) are embedded within this same system of racial capitalism. They are well-documented enablers of violent policies in different domains that affect migrant populations in particular. As actors who either directly supply both border control and smart city technologies (New York City and ICE), while directly or indirectly funding or setting up initiatives focused on refugees and newcomers (in Berlin and UNHCR supported refugee camps), there is a complex and somewhat dialectical exercise of control, in which the actor relies on both white-washing as well as demonization and securitisation for legitimation. The digital periphery comes to fruition in-part through this interfacing of technology corporations with modernisation logics and marginalised populations such as refugees, undocumented immigrants, and communities of colour in particular.

7.2. Techno-space

While newcomers are nowhere near the idealised "refugee camp", the metaphor of the camp still elicits an affective reaction in the audience of concern (notably *not* refugees or migrant populations). In this way, the digital periphery creates techno-space from abstracted and essentialised tropes about displaced communities with transient immigration status. Techno-developmental imaginaries are, in other words, reproduced through techno-space.

Georgiou defines 'digital infrastructures' as two-dimensional socio-technical systems with 'a functional dimension (access, connectivity, use of technologies) and a performative dimension (engagement with technology for seeing and representing one's self and others and enacting citizenship digitally)' (2019: 602). These digital infrastructures have attained value at least in part through the 'outernet', which can be understood as the material and planetary movements informing

‘flows of labour, culture, and power’ (Terranova 2004: 75). This comes through in e.g. how initiatives such as Jobs4Refugees and Refugee.info generate value from refugeeness alone, absent the refugee. The technology initiative generates racial capital by selling the cultural and political significance of the ‘vulnerable’ refugee, as a potentially lucrative site of extraction, through their apps. Drawing on Lefebvre’s ‘representational space’ (1992), in this section I argue that so-called ‘digital infrastructures’ manifest digital tropes and socio-technical imaginaries about migrants in material form. They layer physical infrastructure with symbolic space, which in turn has consequences for the re-ordering of both. I elucidate how the digital periphery operates in part through this – what I will refer to as *techno-space*, where marginalized and, in particular, formerly colonized populations are contained physically and symbolically. Through techno-space, the surface area available for the extraction of racial capital is expanded.

It is striking that a towering LinkNYC kiosk on Church Ave lets perhaps the largest concentration of undocumented communities in the borough know that they are under observation, aiding Intersection’s linguistic and cultural targeting of ‘communities of interest’[115] as if to colonise spaces of refuge through surveillance. New York City has seen digital infrastructures undergirding the physical urban environment, such as LinkNYC, IDNYC and others, retrofitted into an experimental migration control apparatus (the urban milieu is in other words converted into techno-space, altogether). They give rise to what can be best described, observationally, as ‘information panics’, or what privacy scholars have referred to ‘chilling effects’[116] (Penney 2016). Alhasan, the organizer with the Darfur People’s Association of New York (DPANY), along with many other informants ostensibly from immigrant communities, had underscored how it would be inconceivable to connect to Wi-Fi in public spaces of transit, particularly as these did not prompt him before reconnecting. This is not surprising, once the otherwise “invisible” (at least to the naked eye) internet is conceived of as material space – Benjamin raises the example of hostile architecture (e.g. ‘oddly shaped and artistic-looking bench[es] that make it uncomfortable but not impossible to sit for very long’) (2019: 89). In the same manner, then, information panics are representative of the human reactions to a hostile digital architecture, which does not strictly render the city uninhabitable, but pose significant hazards and discomforts, making resistance harder.

Similarly, privacy activists with Rethink emphasized that the gaze of surveillance in NYC had material and traumatic consequences for marginalized populations, yet there is a visceral fear of

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[115] Field note, Isabel, March 2019, online.

[116] As per Penney, the “chilling effect doctrine” was first define as an encouragement to ‘courts to treat ruels or government actions that "might deter" the free exercise of First Amendment rights "with suspicion"' (2016)

challenging it 'out of fear that you might be targeted, or that your community might'. For New Yorkers of means and citizenship, interventions such as LinkNYC have become normalized parts of the urban landscape.[117] For most informants in precarious conditions actively looking for ways to organize for everyday survival, refusal of techno-space and an increased engagement in trusted diaspora channels took the centre-stage in fighting what was very much seen as an extension of ICE's security apparatus.

Meanwhile, newcomers in Berlin have been entirely side-lined owing to an instrumentalization of their selves. Here, abstracted subjectivities, i.e. *digital refugeeness*, have been transformed into sandboxed spaces for experimentation. Digital initiatives, insofar that they hold the power to classify groupings in the public imaginary, contribute to the objectification of human subjects into manageable *others*. In so doing, "refugeeness" attains a technologically mediated racialised disposition (Garner 2007). Notably, in the city, this separates the newcomer from the illusory homogenous whole of citizens while centring German "Wilkommenskultur" and generosity. The underlying integration logic underpinning this is something newcomers continue to resist, as evident from the G100 workshop. Somewhat more perversely, this is how Tom is able to attract funding to Jobs4Refugees; the 'outernet' dictates that the imagery and symbolism of the refugee has value (not least as it continues to serve as a sensationalist spectacle in the tug of war between progressive and, conversely, nativist and xenophobic politics), while refugee tech, in turn, has material consequences. The symbolic or virtual space demarcated by digital refugeeness contains 22,000 digital refugees (or avatar) within them. The actual number, in reality, does not matter, the digital representation of subjectivities does, or rather, the symbolic value ascribed to Black and Brown likes and images. I am reminded that to Tom, measuring the extent to which refugees actually used their initiative wasn't necessarily a 'highly effective cost to evaluate.'[118]

Both cities invariably constitute what Mirzoeff refers to as 'white space'; a space in which regime 'oversight', by analogy of the plantation overseer, polices and 'ensures maximum production and minimum resistance' (2020: 2). The historical echo of these digital forms of enclosure, as Mirzoeff alludes to, harken back to e.g. the use of human collateral to 'raise a significant amount of cash and credit' in the colonial South of the US through mortgaging slaves (Martin 2010: 819). Today, as evidenced in New York City and Berlin, the digital periphery works through techno-space to expand the surface area available for technology deployments. In so doing, it extends our traditional

[117] Somewhat tangentially and yet bizarrely, at the time and place of writing, the same hardware provided by Intersection for LinkNYC have emerged across London, warning the good people of Hackney that the risk of COVID-19 transmission in their particular area is "high".
[118] Interview, Tom, May 2019, Berlin

conceptualizations of the border to encompass the boundaries of otherness and encodes the latter in technologically exploitable terms. The allure of technology in both cities for solving complex problems relates to displaced bodies – or as is mostly the case in my examples, find problems for deterministic solutions – relies on the willful ignorance of the experiences of violence and precarity along racial lines, in service of the continued technology deployment.

7.3. Techno-government

In New York City and Berlin, governments and institutions rely on technology actors and their digital urban interventions, symbiotically, to identify, exploit and control immigrant communities. Technology actors share in migration governance by deploying ICoTs that either instrumentalise urban migrant environments or subjectivities, thereby constraining movement and exploiting fugitivity for racial capital. These cities of refuge demonstrate how the digital periphery works along techno-governmental lines.

Easterling has shown how this is possible because urban space is often a site of 'multiple, overlapping, or *nested* forms of sovereignty, where domestic and transnational jurisdictions collide' (2014). In Easterling's conception, urban infrastructure attains an 'active' form, as opposed to the static fixed state conventionally attribute to urban structures (Stein 2015). This sustains technological experimentalism, data extraction, and the mobilization of vast amounts of capital for profit and drives symbolic and political capital from governments and local authorities to tech actor; what Easterling would call the exercise of 'extrastatecraft' (2014). In this section, I show how governments can erect a mirage of order and control through tech deployments while allowing technology corporations to become an essential part of the performance of governance (even if they are not openly acknowledged as such). Techno-government, in similar ways, allows for liberties to be granted to technology corporations in exchange for enabling and sharing in governance (historically at the expense of migrant labourers, prohibiting e.g. strikes, lowering minimum wages, etc).

The digitalization of cities has implications for the distribution of power between city and technology actors. In the context of New York City, there is a greater centralization of control and surveillance powers with authorities (including at the federal level). This is reinforced through new technological innovations, which in turn inserts technology actors in the business of governance. As Chapter 5 showed, this comes through in the background to and deployment of Intersection's LinkNYC kiosks. De Blasio not only situated the city as a 'testbed for new technologies [transforming] the relationship between city government, community, and the tech industry' (NYC

gov) in October 2017 but went as far as to appoint tech giants including Facebook, Google, IBM, Microsoft and Verizon to its NYCx Advisory Board and several other elite city committees (Zukin 2020). When the MOIA and LinkNYC partnership was announced, purportedly with the objective of providing information to immigration communities, it was already a known fact that ICE has conducted significant numbers of deportation raids across the city, and that their work was supported by software infrastructure provided by the very tech giants who had just been given unfettered access to NYC as an urban "testbed".

While this techno-deterministic orientation to governance at the macro-level exposes a revolving door between the tech industry and government [119], it is also indicative – at the micro-level – of design practices that transpose these nested sovereignties to the street level (Easterling 2014). For instance, my conversations with Intersection demonstrated that middle managers working at the level of deployment were genuinely convinced they were designing for a more just city; that they were providing a public good. I recall how they explained that public consultations in the design phase of the kiosks had adequately involved the community in the design of the product. The perception among "communities" – who were, in my experience, neither a homogenous whole nor always in agreement – was, needless to say, a far cry from this understanding. As my informants insisted, surveillance capabilities had *not* been presented to them at the design consultation stage, which included cameras, Bluetooth sensors, and data collection defaults of several data points that could be used to establish demographics (including device type, phone language, a hash key for Wi-Fi reconnection and email address). Similarly, the proposed RFID upgrade to IDNYC was a later addition that the city incessantly pushed despite vehement resistance from activist and public defenders on grounds of potential function creep and data exploitation by ICE. Constanza-Chock has noted in her seminal work on design justice, that 'too often, design teams only include "diverse" user personas at the beginning of their process, to inform ideation'. These design decisions ultimately serve to give impetus to urban governmental entanglements between the state and the tech industry – they provide the "sensors" through which data on communities is collected, processed and shared with the state (and used in the constant reiteration of new product lines).

Conversely, in Berlin, technology actors have been left somewhat to their own devices in the context of technology interventions for refugees in particular – they step in as outsourced providers of "integration". By cutting through the red tape associated with the German bureaucracy, and authorities remaining either ambivalent or actively opting-in to the intervention, technology actors

[119] At the time of writing, President-elect Biden has appointed Eric Schmid and other Chan-Zuckerberg Initiative personnel to his cabinet.

not only occupy significant agenda-setting powers but also positions of authority concerning refugee integration. As I explored in Chapter 6, at the macro-level, state actors such as the BAMF were getting involved only as potential funders. I also learned that larger companies, such as Salesforce, Google and Facebook were investing in the research and development of refugee tech. This largely laissez-faire approach enabled experimentalism with vulnerable populations and rendered oversight particularly difficult. The interventions I interrogated in Berlin did not have a public consultation process by which their intervention was legitimated. In the case of Integreat, I learned from the founders (as was the case for Jobs4Refugees and several other initiatives) that the only usability testing they conducted for their tools were with their clientele of municipalities. They relied on 'word of mouth', as one of my informants claimed, from authorities about refugee experiences. Curiously, a tool for which the objective is the delivery of crucial information for refugees did not have a feedback loop through which this delivery is assessed. Constanza-Chok's description of design-driven exclusion best summarises their consequences: 'if you're not at the table, you're on the menu' (2020). In both cities, technology actors benefit from extended powers granted through the situatedness of technology giants as essential to governance.

Historically, the evolution of capitalism in Europe has been contingent on the deployment of similar 'artificial visions' (Mirzoeff 2020). In England, in a bid to assure greater socio-economic fortunes, 'enclosures, the poor laws, debtors' prisons [and] transportation (forced emigration)' (Robinson 1983: 26) were used liberally to make 'white space' – the 'systemic erasure of colonized terrain and existing social relations in that space [to make] space perceptible to the "conquering" gaze' (Mirzoeff 2020: 1). In a more fundamental sense, Europe needed 'new mystifications, more appropriate to the times', to justify its inhumane means of maintaining and expanding the civilisation. A "periphery" of sorts was needed (Amin 1974). The egregious imagery of the mythical *Herrenvolk,* for whom Europe — and superiority in general — was a birthright, helped position *race* as this new mystification, creating 'the rationalisation for the domination, exploitation, and/or extermination of non-"Europeans" (including Slavs and Jews)' (Robinson 1983).

In its bid to extend the production frontier, England further intensified its use of slave labour — and African slave labour in particular. Robinson's account of how African slaves were, in our terms, *peripheralised,* through their emergence into the European invention of the "negro". Indeed, a distinction was made between those who had been born on the plantation versus those who hailed directly from the continent, with individuals who held most distant lineage with continent considered at once both more assimilated, and yet less human:

> 'The invention of the Negro was proceeding apace with the growth of slave labour. Somewhat paradoxically, the more that Africans and their descendants assimilated cultural materials from colonial society, the less human they became in the minds of the colonists' (Robinson 1983: 119)

Just as African workers were conditioned to fit the servile periphery in service of Europe's source of value in trade, and secondly, as a source of further value extraction to meet the production demands of the world market (Ibid), the proximity of newcomers and immigrant populations to Western urban centres today has generated a greater need for creating distinct strata in which these proximate "others" can be contained (hence *refugeeness*), and under the auspices of whom (and on the backs of whom) production (and in particular, tech production) can be justified. This maintains the colonialities, keeping racial capital flowing between the tech industry, funders and government. As Fanon noted in 1961, 'private companies, when asked to invest in independent countries' first erected impossible conditions that couldn't possibly be met, agreeing to lend money to young states, but only on conditions that this money is used to buy manufactured products and machines: in other words, that it serves to keep the factories in the mother country going' (2004: 59)

A final feature of the techno-governmental manifestation of the digital periphery is limited to cities with more protruding smart infrastructures, such as NYC, where there is a stigmatization of technology refusal. In New York City, instances of anti-LinkNYC activism through e.g. breaking cameras on kiosks as per the case of Juan Rodriguez, have been highlighted as vandalism and criminal activity. A more recent development includes the activism against the new tap system which has started to be deployed across the Metropolitan Transport Authority. The system, called OMNY, was provided by San Diego-based Cubic Transportation Systems (the vendors behind London's Oyster cards) as part of a $553.8 million-dollar contract with the Metropolitan Transport Authority.[120] Cubic has been operating London's contactless public transit payment system since 2003 — the system, which works through an RFID-enabled "tap and go" card, has since been upgraded to support contactless credit cards and other smart devices with NFC support (initially through the Apple and Google Pay service). Cubic has been criticized previously for providing their EST2000 product, a virtual training system that provides a highly realistic, cost-effective training solution to enhance warrior combat readiness and marksmanship, to the Israeli Defense Forces with contracts amounting to at least $19.9 million.[121] A recent report by the Gothamist highlighted that the OMNY card readers

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[120] Cubic Transportation Systems: https://www.cubic.com/news-events/news/cubic-wins-contract-new-york-mta-replace-iconic-metrocard-system-world-class-new

[121] Israeli Defense Forces: https://www.fool.com/investing/general/2013/05/10/cubic-wins-199-million-israeli-defense-forces-cont.aspx

contain cameras; a fact that is not at present documented and acknowledged elsewhere (a spokesperson from Cubic claimed the cameras were only in place for QR codes and are currently not used for any biometrics).[122] Much like LinkNYC, OMNY has situated itself as an incontestable feature of the digital urban infrastructure of New York City, even going as far as to pair the act of 'vandalizing OMNY readers' with unattended packages and other suspicious, conventionally terrorism-attributed behaviour.[123] This comes as OMNY readers were smashed during the 'J31' day of action against the NYPD on January 31, 2020.[124]

The mandates of these interventions as service providers and public goods, and their intersection with policing, via stigmatization, criminalization and data sharing, shows how the digital periphery justifies the techno-governmental interventions, whilst at the same time being situated as a threat to it.

7.4. Life in Urban Refuge

In this section, I reflect on the transformation of the post-Fordist city into digital urban infrastructures and discuss the implications of the digital periphery for life in urban refuge. Life in urban refuge, as experienced by occupants of the digital periphery across New York City and Berlin, is a stark reminder of how the city as a destination of sanctuary has been transformed in two major ways over the last thirty years: first, through the erection of digital urban infrastructure that bifurcates the city beyond post-Fordist terms, and; second, through the production of speculative value contingent on the image (but simultaneous absence) of marginalised subjects.

Under post-Fordism, the formerly demarcated 'ghetto' is excluded, rather than in an active state of direct exploitation (1997). However, the combination of these post-fordist changes, along with the emergence of the digital periphery through digital urban infrastructures, make possible the simultaneous exclusion, domination and exploitation of "undesirable" populations. Information panics, for example, are one example of this. ICoTs, such as LinkNYC, evoke information panics, which accelerate the digital sedimentation of the post-Fordist socio-spatial order through regulating how subjects can move in urban space, based on characteristics such as, immigration status and race, in particular. In the 'mobile outcast ghetto', of which undocumented and other vulnerable migrant populations can be designated a constituent part, 'logistics orchestrates the control and management

[122] https://gothamist.com/news/the-mtas-new-omny-scanners-have-cameras-in-them-but-theyre-not-watching-you-yet
[123] https://omny.info/see-something-say-something, https://www.ny1.com/nyc/all-boroughs/news/2020/02/07/mta-day-of-action-omny-screen-smash
[124] https://itsgoingdown.org/decolonize-this-place-on-j31-and-beyond-people-are-becoming-ungovernable/

of surplus populations, keeping them in their (social and economic) place, even as they move about the city' (Shapiro 2020: 11). The map of public Wi-Fi kiosks against deportation raids (figure 5.1.) showed how limited vulnerable migrant populations are in terms of physical movement, lest they be sensed by adversarial urban infrastructures, should they opt to venture into the digital 'citadel' (Shapiro 2020). Sterling's speculative description of the "smart" city provides an incisive description of this predicament:

> 'The "bad part of town" will be full of algorithms that shuffle you straight from high school detention into the prison system. The rich part of town will get mirror glassed limos that breeze through the smart red lights to seamlessly deliver the aristocracy from curb into penthouse' (Sterling in Shapiro 2020: 152)

Marcuse and Shapiro's analysis, however, does not address the digital periphery, which creates the conditions under which the simultaneous expulsion and inclusion of undesirables are mutually reinforcing phenomena that allow for the generation of racial capital. This is the second transformation of cities as refuge: the digital periphery is as much about the categorisation and containment of marginal physical bodies, as it is about the exploitation of their digital "avatars". Beyond the bifurcation of the city into mobile 'outcast ghetto' and digital 'citadel', digital urban infrastructures use the image of those in the digital periphery to legitimate its intervention. For instance, Intersection uses the ad screens on their kiosks to advertise themselves as gateways to immigration services, while also broadcasting occasional "fun facts" about e.g. immigrant – and African-American – histories for passers-by in the same vein.

The municipal ID system, IDNYC, also works to advance both of these transformations. Without completely replacing existing IDs, they stratify city populations into those at greater risk of being stopped and potentially detained on the suspicion of being undocumented, versus those with "regular" citizen IDs (once again invoking afore-mentioned bifurcation). These interventions single out particular populations, thus reinforcing underlying discriminatory narratives. In Berlin, several app initiatives generate artificially distinct channels for access, entrenching ethnic and national differentials— not unlike the 'mobile' ghetto. As AbuJarour has shown in her work, refugees and newcomers hardly use these distinct tools; nevertheless, their discursive power is not to be underestimated. In cities of refuge, New York City and Berlin, in particular, technology often acts as a gateway for authorities and institutions to appeal to narratives of gratitude and victimhood. This is particularly problematic against the backdrop of a global hostile immigration environment, in which the politics of the welfare state are inextricably tied up with the xenophobic posturing, by right-wing parties in particular, of racialized populations as abusers of public benefits.

Across both New York City and Berlin, interventions made in the name of displaced populations demonstrate a continued neoliberal move towards conjecture as the engine of value creation. In a limited sense, applicable almost exclusively to communities living under conditions of suspended or limited rights, for instance by being perceived as less deserving of a right to work, it emerges that the ‘direct labour of humans is no longer of exchange or use value in digital capitalism’ (Hickman in Wei and Peters 2018)

Both case studies have demonstrated that digital urban infrastructures often work antithetically to their purported objective (often framed in terms of e.g. access, connectivity and welfare). While structural inequities are often invisibilised under digitalization efforts, they endure. Equally, access to the “gates” of the services (e.g., ability to access the online application for affordable housing, as is the case with NYC Housing Connect) does not mitigate the problem of gatekeeping, and therefore does not guarantee procedural fairness and better outcomes. The tendency has instead been to augment and exacerbate existing discriminatory practices already faced by communities living under conditions of urban refuge.

7.5. Trust and Data-scepticism

Zuboff has referred to the turn in the usage of meta-data as the function of a new era of *surveillance* capitalism, which ‘lays claim to private experience for translation into fungible commodities that are rapidly swept into the exhilarating life of the market’ (2019). This, she claims, is a fundamental shift in the economic model of capitalism. Under surveillance capitalism ‘[…] behavioural data that were once discarded or ignored were rediscovered […] as a means of generating revenue and ultimately turning investment into revenue. [Users] became a means to profit in new behavioural futures markets in which users are neither buyers nor sellers nor product’ (Zuboff 2019: 13). Zuboff presents a model under which users provide the “raw materials” for capitalism, through their digital behaviour.

In this dissertation I have distanced myself from this particular orientation for two reasons: 1) surveillance, through categorisation and containment, has always been a driving force of *racial* capitalism (a concept which Zuboff scarcely engages with), and; 2) my encounters in New York City and Berlin demonstrate that technology deployments do not, in fact, depend on meta- or -behavioural-data. Rather, they depend on what can be thought of as *surrogate* data. That is, data that is not generated by those who they purport to pertain to. Instead, this data is based on conjecture about abstract racialised categorisations of identity, forged out of white imaginaries about the “other” (Brock 2016). This, too, can be considered “artificial” intelligence (albeit much different to normative

conceptions of “AI”). Take away the human futures markets and the liberal usage of behavioural data, and racial capitalism still extracts and secures capital through surrogate data extracted from the digital periphery. Rather than behavioural data or human futures markets, this is given shape by 1) panoptic aesthetics embedded in the urban environment, actively imparting insecurity on undocumented migrant populations, who in turn resist them; 2) obfuscation of the actual extent of control, which forecloses contestation of the ways in which ICoTs do (or do not) describe, categorise and lay claims to migrants, and; 3) conjecture about migrant populations.

First, perceptions of data collection matter for how individuals experience marginality. For communities contained in the digital periphery, scepticism about digital infrastructures is tantamount to scepticism about institutions and the governing class. In privacy discourse, critiques of such practices are often framed in terms of what Morozov calls ‘data extractivism’, a logic that sees users as ‘valuable stocks of data’ for whom:

> ‘[…] technology companies, in turn, design clever ways to have us part with that data — or at least share it with them. They need this data either to fuel their advertising-heavy business models — more and better data yields higher advertising earnings per user — or they need it in order to develop advanced modes of artificial intelligence centred around the principle of “deep learning”’ (Morozov 2017)

However, in digital cities of refuge, scepticism about access to data goes beyond this technical analysis. Chapters 5 and 6 illustrated why controversies around the use of meta- and -behavioural data have become particularly rife in recent years. The presence of always-on technologies with inexplicable (and often unreported) sensors, in particular, pose a significant data extraction risk to migrant communities, whose lived everyday realities are shaped by e.g. intensifying ICE deportation raids, and unsolicited reporting. The prospect for e.g. smart RFID-enabled IDNYC, allowing for more detailed tracking of locations and demographics, even if only in theory, are thus resisted. This is hardly surprising given the association of the existing IDNYC system with several immigrant detentions by sheer virtue of being presented to law enforcement. These ICoTs, then, while panoptic – irrespective of actual surveillance capabilities – impart insecurity on migrant populations, whose resistance does not necessarily dissuade the continued insistence on the deployment of the technologies.

Second, and even more perniciously, my informants indicated a general lack of clarity around who has access – especially at the federal level – to data coming through digital urban infrastructures including Wi-Fi kiosks, automated licence plate reader data (ALPRs), OMNY cards and more. These fears are not unfounded; Cheney-Lippold describes in great detail how a number of discreet

categorisations of behaviours, based on data *about* how people behave on the internet, are classified into many different algorithmic brackets (e.g. 'male', 'Brown', 'programmer', 'artist') – what he calls 'measurable-types' (2017). Benjamin describes how the New Jim Code of Silicon Valley uses this model of algorithmic classification in tandem with carceral logics inherited from Jim Crow to, among other things, describe 100s – perhaps even 1000s – of racial classifications, each describing an observed algorithmic behaviour (2019). It stands to reason that these interventions likely operate according to similar logics, at the technical level. Especially in hostile immigration environments, where organisations like Mijente and Brooklyn Defender Services remind us that the availability of a vast number of data-points can be instrumentalised by federal immigration enforcement officers for location tracking, detention, and eventual deportation. However, the general obscurity and inaccessibility of how these systems operate, and who has access to them, makes it nigh impossible to challenge the ways they do (or do not) describe, categorise and lay claims to migrant identities.

Finally, as evident in Berlin, there is a discrepancy between the platforms that are being built by technologists (oftentimes with no experience of displacement, and no history of engagement with displaced communities), versus the platforms that are in actuality used by refugees in everyday information architectures. This knowledge should be sufficient to reconsider whether these interventions provide anything of value at all. However, tools like Facebook 'pages' provide new avenues for conjecture, which combined with reductive key performance indicators (KPIs), allow "refugee-tech" initiatives to falsely equate their Facebook audience of 'likes' with 'refugees'. This is what I have referred to as *digital refugeeness*. Both the *digital anti-sanctuary* and *digital refugeeness*, are manifestations of the *digital periphery*.

7.6. Urban Migration Control

My engagements with technologists and affected communities in both cities unveiled how technology initiatives work through modernisation logics, space, and governments, to categorise and contain displaced subjects. The variation across each city is emblematic of how the modes of subjugation central to racial capitalism, categorisation and containment, continue to play a role today, with particularly egregious consequence for displaced communities. The digital periphery has, in other words, given further impetus to the disaggregation of migration control, bringing the border both closer to the city and the body. This has implications for how technological deployments in contexts of urban refuge should be viewed going forwards.

As digital urban infrastructures increasingly govern how people access services, connectivity, communicate with authority, work, access housing, and immigration services, analysing these interventions through the lens of the digital periphery unveils how technology deployments such as those covered in this dissertation, are in fact about mobility governance and contemporary practices of bordering. Understanding how ICoTs specifically exercise control as the border allows future research to expand the scope of inquiry, both when investigating borders and border technologies, widening and updating both fields of research. Below, I delineate the two forms of informational control at the centre of these technological deployments.

The technologies reviewed in chapter 5 and 6 are engaged in predominantly two forms of informational control, which have implications for how individuals epistemically—and thus also physically—move through refuge, resettlement, and integration. One type of informational control builds on Fricker's notion of testimonial injustice[125] and is the capacity to directly or indirectly coerce the voluntary or involuntary surrender of information of an individual to the particular authority. This includes biometric technologies used for registration, digital vouchers, and surveillance, but also tools used to gather personal data, meta-data or construct surrogate-data, in more indirect ways (e.g., through monitoring browsing behaviour, device characteristics—such as system language, IMEI number, and region of origin—transactional histories, TelCo data on call and messaging habits, image scraping etc). The second type of informational control is based on hermeneutical injustice and is the capacity to control what information people have to act on, precipitating certain action or inaction, deemed desirable by the particular authority.[126] Technologies falling under this description include information dissemination initiatives, e.g., tools for orientation in the context of integration, and tools for navigating bureaucracy.

Both types of informational control converge at times, particularly in technology-driven migration governance. It is a common configuration that limited information or access is provided, often in exchange for extraordinary amounts of data. Cities are particular sites in which this convergence plays out. In New York City, refugees, asylees, and undocumented immigrants alike are given access to digital services purportedly intended to improve life in urban refuge, at the expense of giving up data that could be used to detain and deport them. This gives rise to information panics and system aversion, further compounding precarity, insecurity and by extension, their containment. In Berlin, newcomer communities are asked to potentially engage with dozens of apps, proven to be

[125] A perceived deficit in the credibility of an individual due to physical attributes and characteristic related to their identity (Fricker 2007).

[126] The social condition under which the knowledge needed to act in the best self-interest of an individual is withheld (Fricker 2007)

more or less void of functional value, specifically designed for "refugees". Their epistemologies are muted in favour of an artificial one that drives racial capital. In this way, start-up capital is kept in circular motion between funders, the state and technology initiatives.

As populations who do not possess the same level of protection as citizens, occupants of the digital periphery, that is refugees, asylum-seekers, undocumented immigrants, and other racialized displaced communities at large, are used as experimental sites. Furthermore, they are subjected to a technology-mediated hostile immigration environment, inherited from a century of anti-immigrant policies across both cities, as explored in Chapter 4. While technology deployments in migration contexts are framed in emancipatory language, they can also be described as digital trojan horses of xenophobia. Within the digital periphery, racialised non-citizens are exploited for racial capital.

The ways in which urban migrant environments and subjectivities are datafied and commodified reveal the inner workings of the digital periphery. With cities posturing as "sanctuaries" while facilitating the rapid and lucrative entrenchment of Silicon Valley in the fabric of urban and migration governance, they have become a legitimising ground for the Valley; a final frontier for the exploitation of those fleeing persecution and hunger.

7.7. Machine-breaking and Neo-Luddism

In the preceding sections, I've sought to sketch out how the digital periphery is an enclosure embedded within the continuing legacy of racial capitalism. Throughout Chapters 5 and 6, however, my informants described routinised practices of refusal. The fear of deportations against the backdrop of an advancing digital urban infrastructure had exacerbated the information panic in New York City, leading communities to engage in practices of refusal, such as urban concealment. Sousveillance and neo-Luddite tactics were and are still on the rise amongst immigration, privacy, and anti-policing activists in particular, e.g. through organisations such as RethinkLinkNYC, the Immigrant Defense Project's 'ICE Watch' amongst others) and the mobilisation of alternative information channels through the 'e-diaspora' (Appadurai 1996; Srinivasan 2007; Ponzanesi 2020; Georgiou 2006). RethinkLinkNYC, who organise with undocumented communities, in particular, are fighting the kiosks in particular because it stands to obstruct future resistance. To them, the dynamics of attempting to speak truth to power are stifled in similar ways as survivors of domestic abuse who are expected to report their abuser. Knowing that one is being watched in the first place is experienced as a looming threat. This is why Rethink supported Juan Rodriguez when he was apprehended under the auspices of mental instability. It is also why they place public engagement stickers, printed with

the motif of a yellow warning sign, cautioning passers-by that a camera is, in fact, present on the mundane LinkNYC boxes individuals walk past every day.

Across both cities, the diaspora was resisting and organising in groups designed with their communities in mind. 'Refusal' in these groups meant not a mere rejection of technology the merits of which were either unevenly distributed or negatively impacting them, but about the power structures, logics and policies powering the technology in the first place. Sarina was organising G-100 in Berlin in an effort to 'reposition refugees as the ones producing the knowledge, as owning their space, and *you* as the guest, where previously we were the guests.' For her, the G-100 was an epistemic reclamation; a negation of *refugeeness* altogether. Spaces like Surische Frauen created safe spaces, bordering away the German gaze and its insistence on a linear and top-down "integration" policy. The group has flown under the radar because information about it was disseminated through members of the diaspora, *for* the diaspora. Technology augmented spaces for displaced populations are less inundated by the sensationalism afforded to refugee-tech, even if 'mundane' in form (Brock 2020). It is an inherent refusal of the gaze that would otherwise view space of digital refuge with the market potential front of mind.

Through techno-development, -space, and -government, I demonstrate how this moment, while certainly shaped in its structurings by technology, is not strictly about technology. Rather, it is about how people are racialised, how race is instrumentalised, and how bodies are exploited as a result. As Ruha Benjamin aptly posits, race itself, in this way, is a form of technology:

> 'Racism is, let us not forget, a means to reconcile contradictions. Only a society that extolled "liberty for all" while holding millions of people in bondage requires such a powerful ideology in order to build a nation amid such a startling contradiction' (Benjamin 2019: 34)

Other initiatives had made a point out of demonstrating the possibility for an alternative vision for technology, but had, in turn, encountered funding difficulties as a result, not in small part owing to the refusal benefit off of conditions of suffering. They, in line with sympathetic immigration lawyers, have adjusted to the reality of New York City as a site for migrant violence, with an acute understanding of the fears around deportation raids in particular, and actively self-sabotage – by taking a data minimizing approach – through encouraging their clients to be mindful about the information they share with them. Good Call's approach was one such initiative, intentionally locking themselves out of the prospect for accessing or granting access to data from their clients, who are often calling as a last resort in attempts to rectify conditions of unjust incarceration. This, too, is a negation of the power structures, logics and policies reproduced by the dominant paradigm in the tech

industry. It is a refusal to accept the 'social cost of technological progress' promised by the moment, which is otherwise a pre-requisite to the production of wealth in the digital periphery (Benjamin 2019: 34).

Racial capitalism orders and organizes the production (and deployment) of the very machines Luddites originally rallied against. In 1990, Chellis Glendenning published her 'Notes toward a Neo-Luddite Manifesto', in which she applauded 19th century Luddites for taking laissez-faire capitalism to task for enabling the 'increasing amalgamation of power, resources, and wealth, rationalized by its emphasis on "progress"'. She rationalised their 'last-ditched effort' in taking up arms against the machine as a means towards saving what little remained of a 'world […] on the verge of destruction' (Glendenning 1990). In the 20th century and at the time of Glendenning's writing, neo-Luddites were – and largely remain – the 'activists, workers, neighbours, social critics and scholars, who question the predominant worldview, which preaches that unbridled technology represent progress'(Ibid). She formulated three principles undergirding neo-Luddism, in summary:

> 1. '*Neo-Luddites are not anti-technology [...]* What we oppose are the *kinds* of technologies that are, at root, destructive of human lives and communities'
>
> 2. '*All technologies are political* […] They tend to be structured for short-term efficiency, ease of production, distribution, marketing, and profit potential — or for war-making. As a result, they tend to create rigid social systems and institutions that people do not understand and cannot change or control'
>
> 3. '*The personal view of technology is dangerously limited.* The often-heard message "but I couldn't live without my word processor" denies the wider consequences of widespread use of computers (toxic contamination of workers in electronic plants and the solidifying of corporate power through exclusive access to new information in databases)' (Ibid)

In a 2014 Forbes article, a new wave of emergent Luddism is described as situating its focus squarely on privacy, an alleged diversion from the 18-19th century revolts against the job-stealing machine (Hill 2014). Contemporary invocations of the term, however, have not been in dialogue with critical race and postcolonial scholarship around themes such as refusal, abolitionism and violence, despite their pertinence to how and why technology is e.g. resisted in racially marginalised contexts. Syed Mustafa Ali proposed a nascent framework[127], making a first attempt at rectifying this gap. He described 'fugitive decolonial Luddism', in short, as constitutive of the following:

> 'Luddism, as an active, oppositional stance toward specific technological developments, is usefully retrieved through 'entanglement' with decolonial computing, and further enhanced by the adoption of a fugitive orientation toward surveillant datafication drives'

[127] First presented at the Intercultural Digital Ethics Symposium at the University of Oxford in October 2019,

Much like Fanon's 'triumphant communiqués' of missionaries seeking to implant foreign influence 'in the core of the colonized people' (Fanon 2004: 42), techno-solutionism speaks religiously of a scientifically perfectible world, albeit with one caveat; it does not consider itself as a source of the imperfect. Fanon's violence, then, as 'a cleansing force [which] frees the native from his inferiority complex and from his despair and inaction', must in the digital age, include a Luddite imperative; to first and foremost resist, side-line, co-opt, and break the containment chambers and borders written in ones and zeros. The tactics used to navigate refuge in the digital periphery thus far give limited but novel insight into what a decolonial neo-Luddite approach to digital technology interventions in the 21st century might look like.

These examples go some way in explaining why epistemologies of migrant survival must be conceptualised as in fundamental opposition with the dominant information regime, and as an abolitionist and fugitive undertaking. While both cities have been a site through which the experimental logics of the digital periphery have been especially revealing, it has also set the stage for the accentuation of modes of techno-racial resistance. Through a reconciliation of practices of refusal documented throughout this chapter, it is apparent that alternative emancipatory decolonial imaginations concerning technology are possible.

Chapter 8 | Conclusion

In the aftermath of the Syrian refugee "crisis" of 2015, the possibility of ICTs to ameliorate conditions of displacement was met with great elation. Everything ranging from the provision of information, housing, employment, resettlement and integration were squarely situated within the domain of the technology sector. In 2016, the Migration Policy Institute hailed the "smart city" for harbouring particular potential for addressing integration, socioeconomic access and inequality among refugees and migrant communities at large, valorising 'digital tools [for navigating] local services', gig economy jobs, and sharing-economy initiatives (Benton 2014). Combined with the concurrent emergence of initiatives like Techfugees, which falsely conflated the plight of refugees with technical problems waiting to be addressed by the "hackathon", this techno-solutionist and techno-chauvinist orientation (Morozov 2013; Broussard 2020), fundamentally banished considerations around bordering, the adjacency of the technology sector to the security industry (and the military, prison, border industrial complexes), and potential transformations in relations of power to but a mere afterthought. Yet, it was orientations like these that permitted the accelerated intrusion of Silicon Valley in the lives of displaced populations. Against the backdrop of a free software/libre/open-source (FLOSS) community that was incrementally being co-opted and recruited into mainstream corporate Silicon Valley giants, tech companies like Facebook, Microsoft and Google adopted the usage of emancipatory language to situate themselves as political stakeholders working towards justice-oriented goals.

In negation of this particular epistemology, and in contribution to more critical epistemologies that are void of considerations around race and coloniality, I have demonstrated how the techno-solutionist and chauvinist orientation, and its ascribed actors, have transformed migrant environments and subjectivities into contested spaces in the battle for racial capital. While the technical *how* of Information Control Technologies (ICoTs) have been interrogated plentifully by STS and critical race and digital studies (CRDS) researchers, in this dissertation I sought to shed light instead on the experienced *how* – the result of which I have conceptualised as the digital periphery. Within the bounds of my two distinct geographies, I have argued that race, border and migrant entanglements have intensified in the digital age, giving rise to the digital periphery through disciplining mobilities and exploiting "unruly" bodies via techno-development, techno-space, and techno-government. This, nevertheless, implicates how researchers understand and study race, migration, and technology, which must henceforth be examined as interconnected and mutually constitutive phenomena.

Through this particular analytical lens rooted in the Black radical tradition, critical migration studies, and STS, I have attempted to contribute to critical and emergent debates on migration technologies, as well as critical race and digital studies (CRDS). My contribution to this literature are two-fold: 1) I contribute to CRDS through the migration lens of this dissertation, demonstrating the centrality of migration and the management of mobilities to digital manifestations of racial capitalism; 2) additionally, it contributes to critical migration studies, through its CRDS orientation, demonstrating how practices of bordering, migrant surveillance and exploitation play out through racialised technology production.

In these concluding sections, I reflect on the implications of the digital periphery for a future research agenda. Here, I make the case that the digital periphery reveals new and crucial ways of viewing cities, borders, interstitial geographies such as refugee camps and detention centres, and global movement, as interconnected nodes in the production and reproduction of racial capitalism. Finally, I pose a series of open questions about the possibility of effective resistance.

8.1. Cities, Revisited

Life in digital cities of refuge is a stark reminder of the transformations that have occurred in "smart" urban environments, and the terrains that racial capitalism will avail for value generation. In chapter 5 and 6, I observed these transformations empirically. These case studies showed how such transformations were two-fold: first, through the erection of digital urban infrastructures that bifurcate the city beyond post-Fordist terms, and; second, through the production of value contingent on the image (but simultaneous absence) of marginalised subjects. As a result, I found that cities such as New York, who welcome and facilitate ICoTs in the form of Public Wi-Fi enabled ad boards that offer immigration services, municipal ID systems, and online affordable housing lotteries can continue posturing as "sanctuaries" while facilitating the rapid and lucrative entrenchment of Silicon Valley in the fabric of urban governance. I referred to the city as a "digital anti-sanctuary", to emphasise how fugitivity is stunted and exploited through an implicit consensus between the city, Silicon Valley, and immigration enforcement. This in turn is sparking neo-Luddite refusal of datafication through urban concealment among affected communities. A larger implication of this is that the digitalization of cities reconfigures existing distributions of power between city and technology actors. In New York City, the market reinforces the state, by giving it a greater centralization of surveillance power. This is emphasised through new technological innovations, which in turn insert technology actors in the business of governance.

In Berlin, *digital refugeeness* allows corporate entities behind refugee-tech to keep capital in circulation in the name of refugees, while state actors retain a symbolic veil of proactiveness against the backdrop of the "refugee crisis", as explored in Chapter 6. While this is undoubtedly exacerbated in the digital era, Chapter 4 also traced how early 20th-century anti-immigration sentiment in Germany seeps into how the state negotiates its relationship to "foreign" (read: from outside the EU) immigrants. It is politically expedient to advance the myth that refugee preferences for literacy, flexibility and stability are different, and by nature harbours a greater propensity towards precarity, when faced with the prospect of being reliant on refugee labour, albeit necessarily at a discount. In the name of techno-urban entrepreneurship, spheres under the purview of local authorities and the state, have in this way increasingly been encased in privatized digital instances specifically tailored towards refugees.

New York City and Berlin are key examples of how the digital periphery weaves together seemingly disparate geographic contexts in the pursuit of racial capital. However, they are by no means the only ones. While I was limited to just two field-sites in this research, due to funding and timing constraints, it is paramount that future research engages in mapping the digital periphery across further cities of refuge with rapidly digitalizing infrastructures. For example, Nairobi and Barcelona have in recent years seen major digital transformations that likely have significant implications for how their sizeable populations of refugees, in particular, move in the city. Under Mayor Colau, Barcelona has led a public effort to purportedly restore citizen control over data, but in so doing, has also inadvertently articulated an understanding of urban citizenship through which data is encouraged to be actively and voluntarily shared (Mahmoudi 2020). This model, framed under the auspices of the digital data commons, is equated with good citizenship, and could potentially advance a scenario in which a willingness to engage in more data-sharing is equated with a greater amount of privileges and prestige (Ibid). This could have dire consequences for refugee and "irregular" migrant communities who live in fear of the Centros de Internamiento de Extranjeros (CIE).[128] While structural inequities are often hidden under digitalization efforts – even at times coopted as the problem justifying the deployment of the particular technology – they endure. Ultimately, the analysis in Chapter 7 made it apparent that digital urban infrastructures often work antithetically to their purported objectives, while reliant on emancipatory framings such as e.g. the myth of extending access (to what?), connectivity (on whose terms?) and welfare (at what cost?). The tendency has instead been to augment and exacerbate existing discriminatory practices faced by communities living

[128] Immigrant detention centres and staff

under conditions of urban refuge. As such, interrogating further digital cities of refuge in techno-developmental, techno-spatial, and techno-governmental terms, can help shed light over how the digital periphery is constituted and exploited in different contexts.

8.2. Interstitial Geographies

The digital periphery squarely positions this technological paradigm within a historical moment of racial capitalism and opens up the possibility for a new research agenda more aligned with the output from the burgeoning field of critical race and digital studies (CRDS). In combination with the 'critical geographies of migration' school of thought, these works of literature have been instructive in analysing the border beyond its physical manifestations (Gilmartin and Kuusisto-Arponen 2019; Mbembe 2019; Vaughan-Williams & Pisant 2018; De Genova 2016; Salter 2012; Paasi 2012; Bauder 2011). As I sought to expand conventional and distinctly "physical" conceptions of the border, I demonstrated how new forms of digital enclosure perform migration control in cities of refugee. Throughout the process of this research, however, it has become clear that there is a need for the development of a more comprehensive research effort focused on mapping the global digital periphery across a number of interconnected geographies. Furthermore, the greater impetus given to the diffusion of ICoTs at the time of writing, under the continued pandemic conditions of COVID-19, warrant a transnational effort to analyse the contingency of these deployments on marginalized displaced communities.

As mentioned in Chapter 2 and 3, refugee camps, and borders, have been the site of a great many research efforts concerned with the deployment of biometric and other emergent technologies in particular. E.g. Stenum's work has argued that biometric deployments in camps, in particular, were increasingly carving the border into the body (2017). Compounding this, blockchain-based ID initiatives risk hardcoding the border with the body in potentially irreversible ways, rendering what Weitzberg has called 'machine-readable refugees' (2020). These practices constrain 'choices, their survival strategies, their hopes for a better future, none of which can be captured on a digital scanner or encoded into a database' (Ibid). However, resulting harms are not simply unforeseeable side-effects of systems deployed with the interest of displaced populations in mind. As described in Chapter 3, and as evidenced in Chapter 5 and 6, the digital periphery comes into existence not in small part due to the perception of marginalized communities as constitutive of an "emergent" market. It allows technology actors to engage experimentally not only on terms related to innovations in security (i.e.

national security, immigration enforcement, or border control) but also, simultaneously, on humanitarian grounds.

Even along routes of transit, the digital periphery is there to provide. Investments in research and development for experimental border control and policing technologies by the European Commission, under the Horizon 2020 grant,[129] has amounted to €1.7bn and included systems such as unmanned drone surveillance to aid in Frontex's interception of migrants (Molnar 2020; Campbell et al 2020; Ahmed 2020). The fund also enabled the development of proto-eugenicist 'lie detection' systems based on 'micro-expressions' – a practice by which someone's momentary expressions are taken as an indication of their emotional state. The technique, which is based in controversial pseudo-scientific fields of phrenology and physiognomy, follows similar logics to research enabling the systematic and state-sanctioned oppression, internment, and murder of Uighur Muslim minorities in China (Mozur 2019; Brandom 2020). Research published on IEEE in 2010 by Duan et al., for example, 'create[d] a face database of ethnic groups and extract[ed] facial features by using face recognition technology' among 'Tibetan, Uighur and Zhuang' ethnic groups. The digital periphery, in this way, operates across vast distances, tying together marginal geographies for technology-driven extraction of racial capital.

Working in concurrence with these overtly nefarious interventions, more subtle applications of ICoTs under humanitarian auspices also remain in place along paths of refuge. These include, but are not limited to, collaborations between humanitarian organisations such as Mercycorps and Google, emitting Wi-Fi across these pathways to promote the usage of their informational tool for refugees. While on fieldwork, my path crossed with several humanitarian workers who had been contracted by a major humanitarian organisation to specifically oversee technology deployments such as these. They lamented that they had been hired to create '[…] things that don't work, creating things for show', noting that a mere 'download is a win in the humanitarian sector'[130] – here, a win is equated with meeting funder requirements and securing incoming flows of funding in future.

A research effort drawing on the lens of the digital periphery would interrogate ICoTs through placing these sites in dialogue, in addition to integrating other interstitial spaces such as prisons and detention centres. If the conventional lines drawn around borders have moved, so research must seek to understand the technology-driven extraction of racial capital as a multi-sited force that works

[129] https://ec.europa.eu/programmes/horizon2020/en
[130] Field note, Maddie and Rebecca, April 2019, online.

across afore-mentioned scales. At its extreme, and once at full saturation, the digital periphery will hardly make distinctions across immigration status.

8.3. Global Movement

The increasingly digital realities of global movement through ICoTs have changed practices of bordering, and therefore also the possibility for movement. As movement is increasingly datafied and commodified, it becomes difficult to conceive of movement void of racial capitalist enclosure. Instead, the digital periphery has created the conditions under which *refuge without fugitivity* is the apparent reality. As will be clear from this section, migration scholars, particularly those of the abolitionist orientation, will have to contend with fugitivity from technology deployments as part and parcel of their analysis of refuge and movement, going forward.

For example, technology giants including Amazon, who have an extensive record of workers' rights abuses, have also been known to supply Amazon Web Services to provide cloud infrastructure for other technology products used by ICE (Mijente 2018). ICE uses this software, e.g. Palantir's Gotham or Foundry products, to facilitate deportation, recommend detention, and assess immigrants' propensity to make 'positive contributions' to society (McCarroll 2020). Microsoft, who also designed New York City's largest police video surveillance infrastructure (the Domain Awareness System), provides Azure Cloud Infrastructure services to ICE, and until earlier this year, held a 40% stake in controversial Israeli facial recognition startup, 'AnyVision' (Dastin 2020). Yet, the company also works in collaboration with Accenture, under the endorsement of the UNHCR, to develop digital ID systems for refugees. As actors who either directly supply both border control and/or humanitarian technologies in camps and cities of refuge, or indirectly fund initiatives designed in the name of refugees and newcomers, they convert migrant struggles into profit – an undeniable aspect of the digital periphery under racial capitalism. These are the very companies who have historically profited from utilising the Global South as a "lab" for untested experimental technology interventions. They continue to do so under a self-ascribed auspice of 'tech for good' (Fejerskov 2017; Madianou 2019).

As made apparent through the genealogy of refugee and migrant reception in New York City and Berlin in Chapter 4, there has been a convergence of the hostile immigration environment and Silicon Valley logics (Mbembe 2019; Georgiou 2019; Robinson 1983) – logics that UN Special Rapporteur, Professor Tendayi Achiume, as recently as November 2020, warned were being deployed in the advancement of 'xenophobic and racially discriminatory ideologies' (Achiume 2020). While the interactions between the technology sector and the racialised politics of migration appear unique

and novel, they are undergirded by both a coloniality of migration (Gutierrez Rodríguez 2018) and the two modes of subjugation central to the construction of racial capitalism (Robinson 1983).

There seems to be a consensus in the discourse on migration and technology, that technology is the intuitive solution to complex social issues (techno-solutionism), but that certain aspects of it are undesirable. The critiques are limited at best and have for instance advanced terms such as 'Digital litter', (RAND and the Migration Policy Institute) to warn against:

> […] the sizeable amount of technology developed specifically for refugees […] that […] has been launched but not maintained, leading to […] a trail of outdated information: broken links; and false impressions of rich, available digital tools', leaving refugees in potentially dire circumstances, should they act on obsolete or wrong information (Culbertson et al. 2019: 19).

On the contrary, I would argue that the task at hand goes far beyond the MPI's computationally feasible suggestion of cleaning up 'digital litter'. Digital litter, in many ways, is the event horizon of the contemporary business model of technology deployments in migration contexts. As humanitarians and technologists develop ICoTs in the image of what they, subjectively and stereotypically, perceive as the plight of the modern refugee, they construct computational perversions of refugee subjects, creating axiomatic representations of an enormously diverse population of peoples, housed within the flattening essentialism of the digital periphery. An orientalism for the digital age, which while appearing immaterial, has material and potentially dire consequences for how migrant populations move and the spaces they can access. Fugitives will no longer be able to seek refuge – rather, moving bodies can move into the digital periphery, where their containment simply changes state.

8.4. Escaping the Digital Periphery?

Reflecting on the involvement of tech companies in US immigration enforcement, my informant from Mijente succinctly describes Silicon Valley's market penetration: 'It's their innovation curve: start with war, then refugees, then the mass.' Campaigns such as Close the Camps, Mijente's NoTechForICE, RethinkLinkNYC and the Immigrant Defence Project have taken direct action at the offices of technology giants such as Google, Amazon, and Palantir.[131] They are not interested in 'alternative smart urbanism,' as per Söderström and McFarlane (2017). They build on a rejection of the "smart" altogether. They present a break with approaches that seek to improve the experience of marginalised populations with technology deployments, and that also assume the inevitability of tech.

[131] See Annex II for expanded list of relevant campaigns

Their refusal, whether in the form of urban concealment, the use of alternative technology configurations, or physical tech-sabotage, presents a critical neo-Luddite epistemology of migrant survival for life in digital cities of refuge.

In the year following the conclusion of my fieldwork, these efforts have begun being referred to as strictly abolitionist. In their 2020 report titled *Technologies for Liberation: Toward Abolitionist Futures*, the Astraea Lesbian Foundation for Justice and partners including Mijente, state:

> 'What distinguishes abolition as a strategy is that it does not assume that the use of carceral technologies and mass criminalization are inevitable. [...] If surveillance is, as one organizer put it, about "constant control of the body," then movements for abolition ask: How do we make structures of oppression and control irrelevant?'

In their non-use and refusal, communities confer meaning and reveal partial truths about ICoTs and how they 'function to serve particular interests' (Schwandt 2007; Harvey in Mather and Novelli 2008). In so doing, they present the possibility for change and a vision in stark contrast and negation of techno-solutionism and techno-chauvinism (Morozov 2013; Broussard 2019). Displaced communities, immigrants' rights advocates, and privacy activists, who I encountered in both New York City and Berlin (see Chapters 5 and 6), have sought to challenge ICoTs deployed against migrants in particular, on grounds of their potentially devastating consequences within the communities they purportedly intend to serve. Nonetheless, it is important to acknowledge that discourse in critical technology spaces, and even in the limited body of literature rooted in a neo-Luddite analysis, are taking place above the heads of populations whose experiences are at issue, and whose lives are at stake.

In conclusion, I would like to highlight three key problems for further inquiry. First, the problem of the increasing pervasiveness of the criminalization of anti-surveillance activism, particularly as this works asymmetrically along lines of race. How is 'techno-crime' formulated, framed and disciplined in the digital periphery? Lyndon Johnson's Cold War-era global 'War on Crime', meant 'treating the political dedication of revolutionaries as the permanence of crime and the incorrigibility of criminals.' (Schrader 2019: 50). Set against the backdrop of decolonization and the civil rights movement, this conflation between race, crime and communism in law enforcement agencies meant the conflation of 'crime with subversion'. Today, neo-Luddite refusal of the kinds documented throughout Chapters 5, 6 and 7 is a fundamental negation of the practices of control permitted through digital urban infrastructures. Ranging from its subtler forms, e.g. urban concealment, to Mijente's actions against Palantir, the direct actions undertaken by Rodriguez against LinkNYC kiosks, and by the New Yorkers against OMNY readers during the J31 day protests, these practices of refusal are

already in the process of being criminalised. As such, under the conditions of the digital periphery, the criminalisation of technological 'deviance' begs the question; how can these systems, if at all, be contested under the current socio-legal paradigm, which is layered on racial capitalism? What happens when, as per Brayne, the 'watcher becomes the watched' ? (Brayne 2020: 99)

Secondly, scholars must seek to understand and categorise the roster of technologies underpinning the interface between borders, cities and the technology industry, including software suites, hardware, funders and vendors. This is especially urgent against the backdrop of the data-intensifying COVID-19 pandemic (Taylor et al. 2020), and the counter-terrorism and security responses, ostensibly targeting Muslim communities. In November this year, a Vice report unveiled that the U.S. military had been purchasing 'granular movement data of people around the world' from seemingly 'innocuous' apps, such as a 'Muslim prayer and Quran app […], a Muslim dating app, a popular craigslist app, an app for following storms' – even a leveller app for DIY work (Cox 2020). These developments tell us that most, if not all, networked consumer technologies are ICoTs, and therefore unavoidably about control. This warrants an expansive investigation involving both constructing afore-mentioned roster of technologies, while also documenting how the increasing saturation of the digital periphery does away with what has come to be known as 'function creep' (when data intended for one purpose 'exceeds its original purpose') (Jacobsen 2015), situating the 'creep' as an inextricable and deliberate 'function' of ICoTs.

Finally, there is an urgent need to put in conversation the constituent parts of the digital periphery, e.g. across cities and other interstitial geographies such as camps, prisons and detention centres. As explored in Chapter 3 and 7, the digital periphery operates across prisms of borderization that are less concerned with geographic boundaries, than they are about marginal subjectivities and environments at large. Needless to say, that the activities of technology actors increasingly follow the planetary rhythms of violence that animate global human movement as much between, within, across and without borders. Brenner and Schmid's call for 'new theoretical categories through which to investigate the relentless production and transformation of socio-spatial organisation across scales and territories', has as such never been more salient (Brenner and Schmid in Gandy 2011: 13). As a force situated within the bounds of the process of 'planetary urbanization' (Ibid), the task of comprehensively mapping the digital periphery 'across scales and territories', promises to unveil how the military, prison, and border industrial complexes connect and work together (Eisenhower 1961; Davis 1999; Miller 2019). As critical technology scholars become more urgently invested in knowledge production within practices of neo-Luddite and decolonial refusal, these lines of inquiry complement critical ethnographic perspectives, such as the one I have presented in this dissertation.

While this dissertation has ultimately complicated celebratory narratives around technology deployments in marginalized contexts, it has sought to do so in solidarity and active participation with communities concerned. The future research agenda suggested on these pages has been conceived of in continued solidarity and the hope that it will help unravel how race and alterity are constituted, innovated, and weaponised in service of racial capitalism, and how this can be resisted. This also continues to inform my own praxis, as I examine my situatedness, proximity to, and simultaneous complicity in, the promulgation of the digital periphery, for example, through my participation in the No Tech For Tyrants movement.[132] The findings of this dissertation can thus also mobilise scholar-activist endeavours to imagine academia divested from e.g. its 'linkages with violent technology actors and the hostile immigration environment.'

[132] https://notechfortyrants.org/

Annex I

Data collated by Betterplace Lab and Matt Mahmoudi on "refugee-tech" initiatives in Berlin. Detailed breakdown available in co-produced report.

Initiative	Link	Description	Type	Founded
#germanforrefugees	http://www.germanfo rrefugees.com	Digital language courses in English and German free of charge.	App	
ADIA Erding	http://www.adia-erding.de/index.php	A directory of services available to refugees and helpers, categorised under Lernen/Leben/Arbeiten/Internet	Website	2015
AIDEN	https://myaiden.co/	A social business which mediates casual gig work, e.g. gardening, removals etc. The workers, mostly envisioned as a pool of Syrian refugees, are advertised to arrive within 30 minutes and will earn at least minimum wage.	App	
Alle helfen jetzt	http://alle-helfen-jetzt.de/	A platform for companies who want to engage around refugees. Projects are listed that companies can support, financially, in-kind or with know-how.	Platform	Dec/2015
Alles Klar	https://play.google.com/store/apps/details?id=com.memorado.hackweek.namaste	Connecting refugees to volunteer translators	App	Oct/2015
Arab Almanya	https://arabalmanya.com/	Information and news for Arabic speakers living in Germany.	Website	
Arriving in Berlin	http://arriving-in-berlin.de	A crowdsourced map developed by refugees showing available services in Berlin, including medical and language services etc. Information is in Germany, Arabic and Farsi	Website	Oct/2015
Bazaar	https://www.shareonbazaar.eu/	Locals and newcomers can share their skills on Bazaar.	Platform/App	2015
Berlin hilft!	http://berlin-hilft.com/	A directory of information about refugee accommodation in Berlin, a forum for volunteers to exchange and coordinate, and a listing of job vacancies at refugee organisations.	Website	

Bunt&Verbindlich	https://www.buntundverbindlich.de/de	Connects people who want to donate something with people who want to use this donation meaningfully for the integration of refugees in our society.	Platform	Oct/2016
Bureaucrazy	https://www.bureaucrazy.de/	A service to help refugees and newcomers navigate German bureaucracy.	App	Mar/2016
clarat	http://www.clarat.org/refugees/	A well-resourced project providing a comprehensive directory of services available to refugees, broken down and categorised by services not only organisations.	Website	Oct/2015
Devugees	https://digitalcareerinstitute.org/en/	The Digital Career Institute operates with Devugees a training program for refugees and those who have the right to stay, who are interested in a technical qualification for the German job market.We are convinced that Devugees will help to integrate refugees more effective into Germany and the German society. In our opinion education is the most important key for a succesfull life and work start. We don´t only say "Refugees welcome!" - we want to implement and live it.	Coding School	
Eed be Eed	http://eedbeeed.de/	"Hand in Hand" – An online newspaper set up by a Syrian in Berlin for other Syrians. Eed Be Eed is a multimedia platform in Arabic to distribute the most important information about life in Germany, trough several different channels like a facebook page, a website and a youtube channel. It aims to raise awareness and collect information that's of the interest of newcomers and refugees in several areas	Platform	
Feid	https://play.google.com/store/apps/developer?id=Carthago%20Biz&hl=en	The goal of "Feid " is to give the Arabic-speaking people the opportunity to find their way around Berlin quickly and to inform themselves about cultural and educational opportunities. Since there are events in "Feid", as currently the Syrian cooking class and the 7th Arabic-German Education Forum, we also see the app as a bridge for intercultural exchange and getting to know each other. "	App	Jan 2016
First Contact	www.first-contact.org	Important information for refugees in transit.	Website	
Flüchtlinge Willkommen	http://www.fluechtlinge-willkommen.de/	Flatshare-Site for refugees. Individuals and flat-shares with a spare bedroom can post on the platform. There is also crowdfunding to pay the refugees' rent.	Website	Nov/2014

Frauenloop	-	Train EU resident and immigrant women to participate in the digital economy through hands-on learning and professional coaching in Python, JavaScript, Git, SQL, HTML and CSS	Coding School	2016
Freifunk	http://freifunk.net	A community dedicated to providing refugees with internet access, including by making ad-hoc hotspots.	WiFi	2003
GiveNow	https://play.google.com/store/apps/details?id=io.givenow.app&hl=en	An app to coordinate in-kind donations	App	Feb/2016
GoVolunteer	https://govolunteer.com/	A platform for coordinating volunteers with an impressive range of functionality, including for instance a calendar function for organisers.	Platform	Feb/2016
Handbook Germany	https://handbookgermany.de/de.html	Handbookgermany.de is an information portal from Communities for the Communities of Refugees. We do not want to work FOR but WITH the people who visit our site. In a multilingual editorial office, we bundle existing information offers. This format, which was created in collaboration with our target group, provides information that were shared with all. Through direct access to the communities of people newly arrived in Germany, we can spread reliable information.	Portal	Feb/2017
helperchain	http://helperchain.org/	A service for organisations to find and coordinate volunteers efficiently with minimal spamming.	Service for NGOs	Oct/2015
Helplinge	http://helplinge.com/en/home/	Information portal for helpers. Links to VolunteerPlanner and WohinDamit for volunteering and in-kind donations respectively, and offers resources and learnings.	Portal	Sept/2015
HiMate!	https://himate.org/de	(formerly Waslchiraa) Making Willkommenskultur concrete through electronic vouchers. Companies who want to give to and support refugees can offer vouchers for free products and services, and refugees can download and redeem them.	Platform	Nov/2015

I Bridge Pro Academy	https://www.ibridgepro.academy/	A for-profit online learning platform tailored to Arabic speakers. Current courses include professional English, project management and Java Beginner, with prices ranging from €30 to €690.	Platform	#######
InfoCompass Berlin	http://www.info-compass.berlin/	Information and communication platform with, by and for refugees. The aim of the platform is to provide information and offers for refugees and helpers in several languages on the Internet, but also for the location in the accommodations.	Platform	#######
Integreat-App	http://integreat-app.de	Orientation for newly arrived refugees.	App	Launched Nov/2015
Interpreteer	http://www.interpreteer.de/en/	Platform to match volunteer translators with refugees. Launch was planned for Fe. 2016.	Platform	Geplant Feb 2016
ipso e care	https://ipsocontext.org/	Ipso e-care offers personal, strictly confidential client-orientated psychological counseling via tele-video sessions through the client portal. Refugees and migrants are trained as psychosocial counselors.	Platform / Training	2008
Jobs4Refugees	jobs4refugees.de	A job-matching platform	Platform	Dec 2015
Kiron	https://kiron.ngo/	Our vision is to provide millions of refugees worldwide with the opportunity to graduate with an accredited university degree, free of charge. No more time, potential, or lives wasted.Kiron uses an innovative combination of online and offline learning to provide accessible, sustainable, and cost-effective education.	Online Course	Mar/2015
Konfetti4Change	https://www.konfettiapp.de/#	Konfetti supports pointing out relevant things to be done in your neighborhood. It is a task-manager for local communities to connect newcomers and locals.	App	Oct/2015
LAGeSoNUM	http://www.lagesonum.de/	In the LAGeSo in Berlin (the municipal authority where all refugees must register on arrival), people are given a waiting number and can end up waiting days or even weeks to be called. This project keeps an online track of which number is up so that people can remotely track when they need to present themselves.	Website	#######
Let's Integrate	letsintegrate.de	Matching refugees with locals who want to start conversations	Website	#######
LS Germany	http://www.lsgermany.com/articles/all	An information site for Syrians about life and studying in Germany.	Website	

Make It German	https://www.makeitgerman.com/home/all	An information site aimed at Syrian students to give them an orientation in the German university system.	Website	#######
Metacollect	http://metacollect.de	An open data project which gathers current information about civil society refugee projects and makes it publicly available through an API	Database	#######
MigrantHire	http://migranthire.com/	Finding refugees jobs at German tech companies. The working language is typically English, making jobs more accessible. Refugees register and complete a telephone interview, after which they are presented to companies. The founders have stated their intention to either reinvest or donate to refugeee projects all profits, and to eventually hand over the running of the project itself to refugees.	Platform	Jan/2016
mygreatjobs	https://mygreatjobs.de/de/start/	Job-platform for migrants and refugees	Platform	#######
Place4refugees	http://place4refugees.de/	Arrangement of temporary accommodation for refugees by private providers	Website	#######
ReDI: School of Digital Integration	http://redi-school.org/	Teaching refugees in Germany coding skills to increase their employability.	Coding School	Sept/2015
Refoodgee	https://play.google.com/store/apps/details?id=com.memorado.refoodgee&hl=en	App to invite refugees for dinner.	App	Oct/2015
Refuchat	http://www.refuchat.com/	A translation app for helpers to communicate with refugees which anticipates most commonly used phrases using the Google Translate API.	App	Nov/2015
Refufy	http://refufy.de/	Refufy.de is an online platform supporting cultural exchange by connecting locals and refugees. Participants define activities themselves, enabling direct personal experience, a powerful tool to unite people from disparate living environments.	Platform	
Refugee Board	http://refugee-board.de/	Listing of current initiatives supporting refugees on their arrival in Germany. Volunteers can filter to find opportunities to help.	Platform	Oct/2015

Refugee Phrasebook	http://www.refugeephrasebook.de/refugee_phrasebook/#more-55	online-dictionary for refugees open for everyone to contribute to.	Google Doc	Apr/2015
Refugees on Rails	http://refugeesonrails.org/en/	A programme to enable refugees to learn programming skills. Refugees on Rails provides laptops, technical courses and workshops and a network of locals to learn from and share experiences	Coding School	Sept/2015
Refugees Online	http://refugees-online.de/	Providing WiFi and computer rooms in refugee homes in Germany. Also give courses on basic ICT skills.	Connectivity/ hardware	Dec/2014
RefugeeText	refugeetext.org	Refugee Text work with trusted organisations to deliver critical information refugees need via automated messages.	Chatbot (SMS, website, Facebook Messenger, Telegram)	2016
Refugees Welcome Information	https://refugeeswelcomepad.wordpress.com	This blog collects information about law, refugee-organization, health and care and so on.	Blog	Sept/2015
Refugees Welcome Map	http://refugeeswelcomemap.de/	The goals of the Refugees Welcome Map: - It shows the entire infrastructure for refugee assistance and integration - informs and honors volunteer and professional help - becomes multilingual to inform refugees about help offers	Website	2015
RefugeesHome	http://www.refugeeshome.de	On this platform, owners can offer their vacant housing, which they want to provide for refugees. The employees of the collective accommodation can now quickly search the offers according to various criteria, have the results displayed on a map and contact the provider. Access to the data is only available to registered agents.	Website	
Refugermany	https://play.google.com/store/apps/details?id=com.memorado.welcomeGuide	Basic information for refugees arriving in Germany about asylum procedure, opening a bank account, etc etc.	App	Oct/2015
Refugeeswork	http://www.refugeeswork.com/en/info	Remote IT and development freelancing job matching platform	Website/app	#######

Schnell Helfen	https://www.schnell-helfen.de/	Information platform for refugees, helpers and institutions. It provides an overview of information on how to help, whether as an individual, project or donor.	Platform	Oct/2015
SINGA Deutschland	http://singa-deutschland.com/en/	SINGA Deutschland connects newcomers, often unexpectedly coming to Germany as refugees, and locals by creating opportunities for them to participate in and co-create projects and activities together. Our current programs include Professional Mentoring, Language Exchange and a variety of Social & Cultural Events.	Platform	2012 (in Paris)
Speakfree	http://getspeakfree.com	The provided app offers attractive, mobile and anonymous chat communication. App users can thus contact people in their environment, exchange information and network. The current idea is to improve this opportunity for people and to adapt the app to the needs. These could get information about supporting structures via the app and thus use the smartphone as an "escape helper". The ability to automatically translate the sent messages into various languages such as English, French, Russian, Arabic, Dari and Urdu also allows the app to act as an intermediary between cultures.	App	Mar/2015
Start with a Friend	http://www.start-with-a-friend.de/	We want to support refugees arriving in Germany by bringing them together with locals. Locals can help to make a difference for them with both their experience in everyday life and their commitment.	Platform	Oct/2014
Taqanu	http://www.taqanu.com/#overview	Taqanu is opening the financial ecosystem for anyone by using a blockchain based digital ID to enable financial inclusion and create equal opportunities	Blockchain	#######
Volunteer Planner	https://volunteer-planner.org	Platform to coordinate volunteer work.	Platform	#######
WeConnect	http://www.weconnect.berlin	Bringing locals ans refugees together to better intgrate them into society through activites such as cooking, sports, events...	Website	March (?)/ 2015
Wefugees	http://www.wefugee.org/k	Wefugees' Q&A platform accompanies refugees from the beginning of their stay to the following years in Germany by providing answers to their questions.	Platform/Forum	Nov/2015

Wefugees	https://play.google.com/store/apps/details?id=de.wefugees.app	Wefugees is an App which gives you answers to your questions, around the topic "Arriving in Germany". This app complements the existing since 2015 platform "Wefugees", now available as an app.	App	
Welcome Dinner Berlin	http://welcomedinnerberlin.de/	A platform where Berliners can welcome refugees by inviting them to their homes for dinner.	Platform	Sept/2015
Willkommen bei Freunden	https://play.google.com/store/apps/details?id=de.willkommenbeifreunden.wbfapp	The Welcome to Friends app brings volunteers and projects in refugee aid quickly and easily together. Helpers will find in our Welcome to Friends app access to appropriate initiatives and can directly see what kind of support is currently needed. Aid organizations can create a profile online and indicate their specific support needs.	App	2016
Work For Refugees	https://www.work-for-refugees.de/	A job-matching service: refugees can enter their qualifications and state their eligibility to work; employers can list vacancies.	Website	Oct/2015
Workeer	http://www.workeer.de/	A job-matching platform to get refugees into jobs and training.	Website	Jul/2015
Yallah Deutschland	http://de.yallahdeutschland.de/	Yallah is a bilingual medium for young people interested in refugee issues. Yallah is journalism optimized for small screens (smartphones), published in close interaction with our audience. The goal is to publish news, inspire our audience and stimulate communication.	Website	Jan/2016
Zusammen für Flüchtlinge	http://www.zusammen-fuer-fluechtlinge.de	A crowdfunding portal from betterplace.org to support refugee organisations and initiatives. A volunteering platform is also planned later this year.	Website	Dec/2015

Annex II

A number of advocacy coalitions have formed in recent years, which counter the adverse digitalisation developments mentioned in this report. A non-exhaustive list of current organisations and efforts countering violent technologies from an immigrants' rights perspective, across cities covered above, have been included below:

Organisation	**Purpose**	**Contact info**
New York City		
Coalition against financial technology integrations in IDNYC	Calling for the end of financial technology integrations in IDNYC due to the harms potentially caused against undocumented communities in particular.	Deputy Director, Immigrant Defense Project (maizeki@immigrantdefenseproject.org); Natalia Aristizabal, Make the Road New York (natalia.aristizabal@maketheroadny.org); Daniel Schwarz, Privacy & Technology Strategist, New York Civil Liberties Union (dschwarz@nyclu.org).
RethinkLinkNYC	Calling for the end of surveillance technologies on LinkNYC kiosks	http://rethinklink.nyc/pages/take-action
Mijente/NoTechForICE	Seeks to disrupt this cozy alliance in several ways, including exposing tech's outsized role in criminal justice justice and immigration enforcement.	https://notechforce.com/contact/
New Sanctuary Coalition	Multi-faith immigrant-led organization that creates support systems for and empowers those navigating the immigration system. Involved in resisting the technology driven deportation machinery as well.	info@newsanctuarynyc.org / https://www.newsanctuarynyc.org/get-involved
Close the Camps NYC	A coalition of groups and organizers working to Close the Camps and Abolish ICE. Have set up several actions against Palantir, Microsoft, and other ICE supporting tech corps.	info@closethecampsnyc.com
The FTP	Decolonize This Place is an action-	https://decolonizethisplace.org/co

Movement/Decolonise This Place	oriented movement and decolonial group in New York City. It is part of the many organisations who came together to start the FTP formation. FTP actively fights privatisation/commodification of movement/public transit, and has engaged in a number of anti-surveillance and anti-OMNY activism.	ntact
Tech Workers' Coalition NYC	Work towards building worker power and an inclusive & equitable tech industry through rank & file self-organization and education. They discuss and take action on the impacts of technology on workers and communities.	info@techworkersco.nyc
New York Taxi Workers Alliance	NYTWA is the 21,000-member strong union of NYC professional drivers, uniting drivers of yellow cabs, green cars, black cars & app-dispatched. Have organised in response to especially app worker suicides.	media@nytwa.org
NYCMesh	Bringing free mesh networking to New York, 'a neutral network [who] do not monitor, collect, store or block any user data or content'	https://nycmesh.slack.com/join/shared_invite/enQtNzk4ODQ3MTgyMTEzLTg2ZDJiODQ0YThmZDcyMWYwYjI2OTY3ZDU0MjE1YWZmMTNjYTRjYTY4YzFiNDcyYTEzNGRlZDJmYmFlNmZlYmU#/
Berlin		
Fuck Off Google	Google steals and exploits our data for profit and turned this behaviour into a norm. It also colonizes our physical spaces. Google canceled its plan for a 'Google Campus' in Kreuzberg, Berlin under pressure by the neighborhood; yet it continues its expansion worldwide. As a decentralized network of people, we want to keep our lives and spaces free from this *law- and tax-evading* company and its peers, and oppose the *dystopian*	https://fuckoffgoogle.de/contact/

	future they offer.	
Tactical Tech	Tactical Tech is an international NGO that engages with citizens and civil-society organisations to explore and mitigate the impacts of technology on society.	ttc@tacticaltech.org
G-100 Berlin	G100 aims at creating an interactive space for dialogue between newcomers and locals Europeans in the communities where refugees live in order to foster dialogue, find solutions for certain social problems, and make refugees' voice heard in decision-making processes.	g100berlin@gmail.com
Jugendliche Ohne Grenzen (Young People Against Borders)	Border abolitionist organisation, working towards the rights of refugees and migrants.	jog@jogspace.net
Betterplace Lab	Digitalization is changing our lives. The betterplace lab is changing digitalization. Betterplace Lab engages in critical explorations of digital interventions in everyday life, including widescale analysis of technologies deployed in migrant and refugee contexts.	https://www.betterplace-lab.org/en/kontakt
Society for Civil Rights	A Berlin-based non-profit NGO founded in 2015. Its mission is to establish a sustainable structure for successful strategic litigation in the area of human and civil rights in Germany and Europe. They've brought cases against Hessen Data/Palantir, and done extensive investigative research on phone tapping by border patrol officers in Germany.	lea@freiheitsrechte.org
Seebrucke	As a civil movement we stand for solidarity with people on the run and freedom of movement. In more than 100 cities and communities, SEEBRÜCKE groups are campaigning to ensure that their communities become Safe Harbours. This means,	action@seebruecke.org

	among other things, that the city receives people rescued from distress at sea in addition to the existing quota, joins a city alliance of Safe Harbours and/or assumes sponsorship of a sea rescue organisation.	
OPlatz Group	Created as the voice of the Refugee Movement based at the protest camp at Oranienplatz ("Oplatz") in Berlin, which was set up in 2012 to protest against the disfranchisement of refugees by the German state. Since the eviction of the camp in 2014, the website as well as the structure of refugee protests have changed and developed. Various groups with different focuses have emerged, including the Oplatz Media Group, which is continuing to fill this website with news about protests of refugees in Berlin, throughout Germany and beyond. It also publishes the newspaper by and for refugees – "Daily Resistance".	media@oplatz.net
Center for Political Beauty	The Center for Political Beauty engages in the most innovative forms of political performance art- an expanded approach to theatre: art must hurt provoke and rise in revolt. In one basic alliance of terms: aggressive humanism	contact@politicalbeauty.de

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