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Data colonialism: the census, the map, and the software

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ABSTRACT

This paper investigates how colonial logics of population mapping and administration find a continuity with the extraction and use of data in the Global South and its borders to the West. Understanding technologies of colonial management such as cartography and the census as sites of knowledge production, we draw parallels with contemporary, global forms of data-based governance. Rooted in recent theories of 'data colonialism', our paper shows how it continues, yet reconfigures, colonial power and objects of knowledge in establishing data-based relations. We develop this case by first discussing the genealogy of data extraction in relation to the organising of bodies and territories in different colonial contexts. One condition of continuity that we present is how European imperial censuses in the nineteenth century and colonial technologies of counting and ordering more broadly, are reshaped and reused in postcolonial contexts. We examine how data colonialism plays out in the Global South, specifically in the advancement of biometrics in postcolonial India. Further, expanding the notion of data colonialism, we look at how European migration management software makes populations on the move governable. In another retooling of the colonial census, the anticipation and management of migrations is enabled through the mapping and archiving of human mobility.

Keywords

data colonialism, census, map, biometrics, empires, borders

Introduction

This paper addresses a question of growing importance within theories of data and digital politics, comparing contemporary forms of data-based governance to colonial technologies of population mapping and knowledge production. With few, if any, political and economic arenas in which data does not play a strategic role, much of the scholarship produced on these topics locates data exploitation within theories of capitalist accumulation (Dyer-Whiteford 2015; Skeggs and Yuil 2018; Srnicek 2017), or within the study of surveillance apparatuses (Bigo 2002; Dijstelbloem et al. 2017; Zuboff 2015). Taking a step backwards, both historically and conceptually, we approach 'data colonialism' (Couldry and Mejias 2019a; Thatcher et al. 2016) through a study of biometric and satellite data in relation to the administration of colonies. Although for postcolonial scholars the study of administration is in no way a novelty, it is only recently that it has become a way to frame digital data as a resource sharing striking similarities with archives, demographic tools and cartographies of colonial heritage (Isin and Ruppert 2019). For data is increasingly seen – and used – as an *instrumentum regni* for the making and governing of populations in postcolonial contexts. We

argue that its genealogy should be traced back to the colonial census of populations, territories and resources. This genealogy allows us to draw on scholarship that looks at historical modes of colonial government for an understanding of data colonialism that encompasses and goes beyond extractivism (Couldry and Mejias 2019; Mezzadra and Neilson 2017), surveillance (Treguer 2019; Zuboff 2015), or the digital divide (Thatcher et al. 2016).

However useful it may be to focus on a single paradigm to address the new frontier of capitalism – as Mezzadra and Nielson (2017) have brilliantly done – we agree it is necessary not only to go "beyond the literal extraction" (2017, 193) but to go beyond extraction as a single framework of analysis. After all, data governance does not concern exclusively extractive processes, nor just surveillance or unequal access to the Internet. Rather, it concerns a whole set of operations, more or less visible, in which all of these aspects take part. Since the digitalisation of the economy and its modes of production concern not only the appropriation of data as a natural resource (Terranova 2000; Dyer-Whiteford 2015; Srnicek 2017) we agree with Couldry and Mejias that an expanded study of data colonialism must pay equal attention to how such resources are produced and reproduced. Not just through the exploitation of labour but through a *modus operandi* affecting almost all spheres of human life. Our priority, however, is not to conceptualise new models of analysis, neither to critique others' approaches to the matter. In this paper, we hope to complement recent works about the rise of data governance by focusing on its colonial architecture. To do so, we intend to discuss how the whole 'supply chain' of data governance operated historically in British colonies, specifically in the Indian subcontinent, through different and unique procedures. While British colonial administration developed over time in different territories, the Census of India became one of the major bureaucratic efforts of the British colonial era (Christopher 2008, 276).

Furthermore, we look at the technologies that continue to shape postcolonial states in their relationship with new forms of imperialism, and how they affect power dynamics between the Global North and South. In proposing a condition of continuity, we contend that data, and information technologies more generally, continue yet reconfigure colonial power and objects of knowledge in establishing data-based relations amongst individuals, platforms, and states. Working through links and gaps of data colonialism theories, we identify resemblances especially with administrative tools and techniques that enhanced domination through demographic planning and population management. Understanding this genealogy is crucial to grasp the constitutive force of data colonialism in the organising of individuals and territories (Isin and Ruppert 2019, 207).

To sustain this inference, one has to define the conceptual boundaries of data colonialism and the extent of its force; looking at how it functions and how it differs from historical forms of colonialism. We do so in the first section, showing the strong link between colonial

administration and the use of data. In the second section, we look in detail into how data colonialism takes place in the Global South, discussing its narratives, and the actors it involves through case studies of biometrics initiatives in India and South Africa. Lastly, we discuss how software employed by the European Union for the management and record of migration and digital archives make data an instrument for the government of people on the move.

Data colonialism, digital sovereignty

With the growing economic and political role that data plays on a global level, theories comparing the 'datafication' of nearly all spheres of life to colonial expansion have been proliferating (Sadowski 2018; Couldry and Mejias 2019c). How and in which ways data politics relate to colonialism, however, depends on how colonialism is understood. Colonialism is a practice "of domination involving the subjugation of one people by another through military, economic and political means" (Mignolo and Walsh 2018, 116) and "of writing on the ground a new set of social and spatial relations" (Mbembe 2003, 25). Data colonialism, according to Couldry and Mejias, combines the most advanced forms of computing and data mining with the predatory and racial mindset of colonialism, establishing data-based relations in which peoples, objects, knowledge, and power are defined by whoever holds data (2019a, 337). As we will discuss in the following sections, in exploiting labour, information, and infrastructures, data holders restage power dynamics between colonisers and the colonised, reflecting geographical and economic asymmetries between the North and the South (Nyabola 2018).

In this respect, our quarrel with Thatcher et al.'s (2016, 992) argument is that data colonialism is not just a metaphor to describe how data is appropriated. To begin with, it should not be forgotten that the extraction of data and data politics more broadly are facilitated by the very material extractive practices that are taking place today under neo-colonial conditions (Mezzadra and Neilson 2017, 200). However, Mezzadra and Neilson also point out that "it is not only when the operations of capital plunder the materiality of the earth and biosphere, but also when they encounter and draw upon forms and practices of human cooperation and sociality that are external to them that we can say that extraction is at stake" (2017, 188). It is also worth considering that the productivity of extraction and commodification in the case of natural materials bears many similarities with the processes of data extraction, in that like coal or the mushroom, the data gains value through the labour of sorting, counting, inventorising etc. (Tsing 2005; Tsing 2013).

Couldry and Mejias (2019b) have recently opened an interesting line of inquiry centering their analysis around data's costs and infrastructures. Positing data as a natural resource, the 'new oil,' urges us to look at its modes of extraction and refinement: its capture unfolds an opaque set of operations that chimes with colonial practices of the extraction and trading of resources. Both in theory and in practice, this framework resonates with the

pervasive and ubiquitous use of data in governmental practices. Just as historical forms of colonialism favoured the development of industrial capitalism in the nineteenth and early twentieth century (Arrighi 1990, 387; Williams 1994, 135), capitalism now turns to data to sustain its growth in the face of a long decline in manufacturing (Srnicek 2017, 6). The result is capitalism's incontrovertible tendency to give data a priority of agency, thus allowing new forms of dispossession that echo colonial missions and ideology (Couldry and Mejias 2019a, 337).

Let us analyse this point further: in his *Platform Capitalism*, Nick Srnicek reports an Oracle-sponsored[1] MIT review custom stating that "from a data-production perspective, activities are like lands waiting to be discovered. Whoever gets there first and holds them gets their resources – in this case, their data riches" (2017, 98-99). Or, to give another taste from the same source: "Utilities installing smart meters, brokerages creating mobile advisory apps, travel sites recording all the offers visitors *don't* click on – all of these are colonizing new data lands" (MIT 2016, 6). Nothing better exemplifies our argument than the immediate parallel between such colonialist ventures and *terra nullius*, the notion of 'no man's land' in British colonial law: an unowned place at the disposal of adventurers and conquerors ready to be occupied (Cohen 2015, 3). Formulated on the presumption of prosperity and abundance, *terra nullius* – and hence colonial occupation – is a narrative that began around the end of the seventeenth century. As John Locke put it in 1690: "in the beginning all the World was America" (1947, 45), meaning that for the Europeans the Americas were available for occupation due to an alleged absence of prior claims or inhabitants. Just as this framing is relevant for the study of colonialism, to think of data as an unlimited and unowned resource is a framing that allows new colonial powers to thrive. If today we have come to understand, however reluctantly and contentiously, that natural resources are limited, big data is still passed off as an example of unlimited, raw, unowned resource, ready to be exploited (Srnicek 2017, 98). Although we can confidently argue that "raw data is an oxymoron" (Gitelman 2013, 2), the idea of running out of data is inconceivable because of a lack of transparency about how it is produced, harvested, and traded.

As historical colonialism produced 'scrambles' for resources, so does data colonialism, seeking power through "intercapitalist competition" and the imperative to collect more data (Srnicek 2017, 2). After all, data is not just instrumental to capitalist economic systems, but it is profoundly involved in statecraft and racecraft (Pistor 2020; Benjamin 2016). It is not surprising that platforms and data management infrastructures today hold as much power as states or institutions, to such an extent that they come to affect the very notion of statehood and sovereignty. As argued by Katherine Pistor (2020) in her study of "digital statehood," sovereignty is today expressed through the dominion over streams of data, so much so that platforms are increasingly involved in the garb of statehood (2020, 4). Mark Zuckerberg himself affirmed that Facebook resembles a government more than just a company and

Libra, the global cryptocurrency circulating on his platform, was named after the Roman empire's coin (Pistor 2020, 6). Trying to further grasp the resemblance between empires and tech companies, Couldry and Meijas have proposed a comparison between the Terms of Service or End-User-License-Agreements of social media platforms and the imperial 'contracts' or proclamations that were used to legalise and legitimise conquest, such as the Spanish *Requerimiento* (2019a, 340; see also Thatcher et al. 2016). However compelling that juxtaposition is, in the following section we propose that to understand the specific ways data relations work in postcolonial contexts and the colonial logic underpinning it, an analysis of the census and the map can add to the existing scholarship.

From empires to platforms, from the census to biometrics

Today, it would be easy to believe that companies like Facebook, Cambridge Analytica, Uber or Palantir have little to do with the politics and administration of postcolonial states, or states in the Global South. The simple reason is that after the 2008 financial crisis, many tech giants have been thriving economically and dominating the political scene mostly in Western Europe and North America (Srnicek 2017, 36). Yet, capitalism is inherently attracted to cheap labour and resources. Although operating in different sectors – consultancy, advertising marketplaces, data analytics and on-demand services – big tech ultimately rely on and benefit from imperial relations they contribute to establishing. The push to set foot in low-income economies is nothing new (Harvey 2003), and neither is the collection of data for the classification of populations. The institutions that collected and interpreted data of a given territory, and which are essential parts of the history of empires (Christopher 2008; Hacking 2015), share striking similarities with the global push of tech giants, states, and international organisations towards the identification of all citizens and communities.

Through the institution of social protection and electoral programmes like the Aadhar in India, the Biometric Voter Registration system in Kenya, or South Africa's Social Security Agency (SASSA), the automation of demographic tools is not only acclaimed, but encouraged. Most major tech companies, including Microsoft, Accenture, Google, Amazon, Palantir, and Facebook, to name a few, have collaborated with United Nations' agencies and humanitarian programmes. In charge of developing so-called innovative and cost-saving approaches to technological fixes and humanitarian issues, tech giants are increasingly responsible for the identification of beneficiaries and the distribution of benefits, which they enforce through the access of development programmes' datasets (Alston 2019). A *quid pro quo* that makes tech giants' philanthropic intents more convincing and easily sells them as benign actors (Madianou 2019). For instance, Facebook's attempt to bring Internet to the Global South derives from its competition with Google, rather than from a genuine humanitarian mission: while Facebook's own services are free to navigate, other services pass through Zuckerberg's platform, increasing the amount of data that Facebook holds (Srnicek 2017, 111).

Similarly, public-private partnerships with corporate giants such as MasterCard in South Africa are established to smoothen and verify compliance with the conditionalities associated with some cash transfer programmes, all functioning through biometric technology (Sepulveda-Carmona 2019, 10).

Biometrics aims to reproduce the body itself: through fingerprint, iris scan, voice recording, signature and other bodily measures, data is gathered in exchange for access to a given benefit or programme (Sepulveda-Carmona 2019). Recently, much has been written about the use of biometrics and its resemblance with colonial and racial technologies. According to Ruha Benjamin, the cultural notion of race is increasingly inscribed in innovation processes: technology, she suggests, "is not just a metaphor for innovating inequity. It is, in fact, one of the effective conduits for remaking race" (2016, 3). Looking back at how technology was deployed in the colonies, we agree with Scannell that "it is impossible to distinguish between efforts to inscribe 'race' and racial difference on human bodies and efforts to quantify, compare, evaluate, and surveil the human" (2019, 120). UN Special Rapporteur Philip Alston (2019) writes that in low-income countries, biometric programmes are laying the foundation for new forms of governance, pushing for the legal identification of every single individual, as praised by the UN's Sustainable Development Goals and by the World Bank's "ID4D," Identification for Development (2019, 5). Whereas the use of biometric technologies in Western European and North American countries is not frictionless, although increasingly common, in the Global South beneficiaries' data is exploited almost without restriction and serves as testing ground for experimentation with the mapping of bodies and the census of citizens (2019, 16).

As Immanuel Wallerstein (2011) explains, states are profoundly implicated in the expansion and development of capitalism and colonialism. They are thus no less guilty than tech giants in exploiting data. The Unique Identification Authority of India (UIDAI) is perhaps the most valid example for our argument. Aadhaar, a 12-digit identification number is issued by UIDAI's database of fingerprints, iris scan, face picture, social data, gender, and other information (Rao 2019, 13). Part of the Indian government's welfare programme, the Aadhaar scheme was designed in 2009 in concert with Infosys, a technology consultancy corporation that runs its operations, whose CEO Nandan Nilekani was appointed UIDAI's head (Bhatia and Bhabha 2017, 65). Like other British ex-colonies, as Keith Breckrenridge writes, the Aadhaar scheme is "an effort to escape the limits of the old paper state – of slow, susceptible or unreliable bureaucratic processing, of forgery, deception and translation in the preparation of documents" (2014, 16). Aadhaar is vigorously supported by Narendra Modi, after his former Prime Minister Singh "circumvented traditional government lines of accountability by placing the new programme directly under his office, without the mediating control of cabinet or any other government ministry" (Bhatia and Bhabha 2017, 65). Aadhaar will entirely supplant old welfare programmes, supposedly replacing paperwork and admin-

istrative costs by becoming the only accepted form of ID across the country (Rao 2019, 14). Since independence in 1947, despite a strong focus on national identity and social citizenship, India has been slowly tuning with neoliberalism and its mission to cut and automate welfare provisions in the name of efficiency. Extending Aadhaar numbers to car licences and college degrees, the government creates a sort of digital caste, where freedom of choice of releasing personal data is merely virtual:

> There are already reports of citizens being denied welfare services, including children unable to receive school lunches when their Aadhaar could not be authenticated. In this way the New Jim Code gives rise to digital untouchables. (Benjamin 2019, 136)

Making digital identity an integral and mandatory part of Indian citizens, Aadhar "can be said to produce illegality rather than screen for it," exposing women, Dalits, religious and sexual minorities to surveillance and sanctions in case of economic non-compliance (Benjamin 2019, 136-7). Not just a matter of surveillance then, but a system for categorising individuals that resembles British colonialism and its assumption about the traceability and legibility of all subjects (Bhatia and Bhabha, 2017). Aadhaar's promise to "generate real-time data that map an entire population while still allowing agencies to disaggregate statistics [...] in order to see the position of individuals within various systems" (Rao 2019, 16) reimagines the relationship between citizens and data-holders.

The case of India echoes Benedict Anderson's (2006) study of the census, proving that together with cartography and the mapping of a territory more broadly, these tools are to be intended not just as an administrative, descriptive task for the representation of colonies, but as innovative technologies for the production of knowledge that postcolonial states inherited and reused. As remarked in the second edition of *Imagined Communities* (2006), Anderson observes that technologies of knowledge, be they institutions, disciplines, or objects, were crucial in shaping the relation between former colonies and imperial states. He admits that his original take on postcolonial nation-building was short-sighted in assuming that "nationalism in the colonized worlds of Asia and Africa was modelled directly on that of the dynastic states of nineteenth-century Europe" (2006, 163). Instead, "the immediate genealogy [of postcolonial states] should be traced to the imaginings of the colonial state" (2006, 163), in which the map and the census were a significant expression of colonial dominion. Correcting his first edition, Anderson draws back to these colonial institutions as necessary in making the identity of those nations moulded over the very categories that empires instituted: "they profoundly shaped the way in which the colonial state imagined its dominion – the nature of the human beings it ruled, the geography of its domain, and the legitimacy of its ancestry" (2006, 163).

Likewise, in his study of the use of statistics and demographics, Ian Hacking seems to confirm that "the fetishist collection of overt statistical data about populations," in controlling

and surveilling its subjects also implies "disinformation and mismanagement" (2015, 281). Hacking identifies the genealogy of big data with the early-nineteenth century 'invention' of the population, a study inaugurated by Foucault,[2] when the British imperial government began to categorise and conduct a census of its colonies. For the British Empire, the map and the census were arguably the most fundamental enquiries. Although fragmented and incoherent, censuses became a requirement for all British colonial governments and were unified in the mid-nineteenth century for collection and interpretation in the Central Register Office (Isin and Ruppert 2019, 213). Enumeration of individuals was only useful insofar as it created a bigger picture of the colonies at a distance, a way of producing knowledge about the colonised population. Dividing and categorising by way of administrative districts and standardised identifiers such as name, occupation, or constructed races, the performative force of the census as well as the map lay in enunciating truths about the colonised land and people that could thus be imbued with the force of law. As noted by Christopher,

> the quest for a systemic synchronised population census of the British Empire lasted for a hundred years. It represented an attempt by the Colonial Office to obtain a view of the Empire as a whole as an aid to its efficient administration, although the precise use of the census was never explicitly stated. (2008, 284)

Seeing like a border agency

The expression *fabrica mundi* began to circulate among Renaissance philosophers after its appearance in Gerardo Mercatore's *Atlante*. In critically analysing the relevance of Mercatore's work, amongst the first 'scientific' cartographers, Mezzadra and Neilson (2013) wonder about the ontological meaning of drawing borders as the passage to modern cartographic science. Only through a focus on the constructive dimension of representation of borders and territory can we fully understand the function of a map: the moment a map is drawn reflects the moment a territory is 'fabricated' and thus understood (Mezzadra and Neilson 2014, 11). In a similar manner, Scott states that typifications like the map and the census and similar techniques of schematisation continue to be "powerful form[s] of state knowledge," allowing management and intervention with new levels of sophistication but unchanging motives (2006, 259). Beyond their descriptive function, "projects of legibility" (Scott 2006, 260) produce the populations and landscapes they aim to describe:

> when allied with state power, [maps] would enable much of the reality they depicted to be remade. Thus, a state cadastral map created to designate taxable property-holders does not merely describe a system of land tenure; it creates such a system through its ability to give its categories the force of law. (Scott 1999, 3)

The vast amount of data extracted, collated, and analysed for imperial purposes reveals how knowledge about colonies and colonised subjects was managed and 'imagined' in the sense Anderson and Scott identified: as produced. In the following, we look at the functioning of two

monitoring and mapping systems implemented by Frontex, the *European Agency for the Management of Operational Cooperation at the External Borders* funded by the EU: Eurosur and Jora. Tracing the genealogy of these software systems back to the colonial map allows us to recognise their constitutive bio- and necropolitical power.

Frontex works with two migration mapping software systems, Eurosur and Jora, which by "collecting, exchanging and analysing information on incidents [of cross-border movement]" (Asseco n.d.) automatise and visualise migrations to create digital archives and maps of the border. The data feeding the mapping software comes from satellite images, ship reporting systems, and interviews with migrants about the people involved in their journey to Europe (Tazzioli 2018, 280; European Commission 2015). So-called migratory events, usually referring to vessels of people on the move, are visualised as dots on the map, to which the number of passengers and other information about the event is subsequently added. Thus, the cartography of Eurosur and Jora is based on a combination of digital data, aerial and close-up pictures, and a form of migration census, in which migrants are not considered as individuals but as part of groups (Tazzioli 2018, 276) and as 'cross-border movement.'

Visualisation was always a central technique of modern regimentation (Scott 2006, 250); the gaze at a distance, almost God-like, remains fundamental to the mapping and census-taking operations in postcolonial contexts of Europe's borders. "Seeing like a state" (Scott 1999) or seeing like a privatised European border agency means to obtain a view at a distance (Christopher 2008, 269) that schematises and codes the population and the territory in such a way to allow governmental intervention. With respect to Frontex' monitoring mapping systems, Tazzioli argues that its gaze is characterised by multiple scales (from on-the-ground to satellite) and temporalities: "The monitoring activity – visibility as the act of sight – is effectively in real time, while visualization is not – not even the rationality of intervention that [...] is in fact future-oriented" (2018, 282). In fact, even though Eurosur and Jora are described as border surveillance programs, they do not primarily – if at all – surveil migrants crossing borders, because the delay between the detection and the visualisation of vessels in the software is too big to be used for the purpose of border surveillance. Even representatives of the Italian Navy themselves, who use Eurosur, and a representative of a company in charge of improving the software have stated that the quantities of data require time to be processed such that the usefulness of the program lies in its archival and predictive function, rather than real-time monitoring (Tazzioli 2018, 281). Like colonial archives shifted from "archives as source to archives as subject" (Lucarini 2019, 83) – meaning that they were no longer perceived exclusively as a cultural strategy for the preservation of past events, but began to be approached as producers of knowledge (Stoler 2002; Elkins 2015, 853) – so are databases like those created by Eurosur producing knowledge to be used for the calculation of risk. Although these softwares are promoted as a tool to save

migrants from drowning and to fight smugglers, their actual purpose is the tracking of shifts in migratory routes and the prognostication of stress for a specific border territory. The goal is improving and regulating the exchange of information amongst member-states, through a European communication platform with standardised data representation (Ellebrecht 2014, 234).

Jora superimposes a number of different angles from which migratory events are looked at, quite literally, such as an aerial view, or a close-up view of the vessel used by a group of migrants to cross the Mediterranean (Tazzioli 2018, 278). Through satellite and other data that is mainly, but not exclusively visual, Jora allows to track the spatial transformation of an area and deduce economic and infrastructural transformation. For example, in the case of Sabrata in Libya, in one particular section of the coast an increase in boats and people was detected and monitored, and that change in the local traffic was read as the place becoming an important site of smuggling and departure (Tazzioli 2018, 278). Eurosur's maps are characterised by dots representing migratory events and – based on an archive of those dots – a colour code for borders, where three different colours represent three different levels of risk. These risk assessments are used as a basis for establishing the amount of money invested by the European Commission for increased border security in that region (Tazzioli 2018, 279). In fact, the decision on the colour of the border is not a technical but a political one which is not taken without conflicts between member-states and the EU. Ultimately, however, the establishment of these migration monitoring and mapping systems favours the integration of a European border management system and thus the enforcement of a European external border through the sharing of information and the standardisation of data representation and risk assessment (Ellebrecht 2014, 234).

Another system of dots, described by Scott, is found in the map called *The Distribution of Jews in the Municipality* produced by the City Office of Statistics of Amsterdam under Nazi occupation. This map, with each dot representing ten Jewish people, guided the rounding up and the deportation of the Jewish population living in Amsterdam (Scott 2006, 260). Scholars of colonialism and modernity have argued that the same necropolitical logic has characterised the administrative technologies and the terror of colonial occupations, genocides in both Europe and its colonies, today permeating the management of subaltern populations (Césaire 2004, Fanon 2001, Mbembe 2003) which Foucault called "return effect" (2003, 103).

One could argue that the performative force of the mapping system lies in the assessment of risk becoming a self-fulfilling prophecy for migrants crossing those high-risk borders, as increased securitisation has been exposing migrants to ever riskier travels and increased state violence (De Genova 2017). The placement of dots and colouring of borders are data-fuelled processes that make bordering territories and migrating populations objects of power. And, as Isin and Ruppert (2019, 208) argue, "the data produced about an object at the same

time exceeds its will to power and attains constitutive powers in shaping and forming that object." What 'giving a picture' of the European borders through digitalised and datafied cartography really means then, is a remaking of geopolitical reality. Albeit with the new temporal dimension of digitalised borders, migration-mapping software systems remain projects of legibility. Beyond constructing governable migrant populations, migration databases and mapping software reproduce the image and authority of Europe as a rationalised sovereign supra-state (Badenhoop 2020). The "virtual border" has expanded the border mandate, such that the need to assess and respond to risk justifies intervention beyond the territorial border itself (Ellebrecht 2014, 240). Paradoxically, it is the claim of the alleged risk, of the state being exposed to an objective, visible and trackable danger that conveys it its sovereignty, because it rationalises a constant preparedness for the imagined threat of the migrant as the Other. And, as Achille Mbembe argues:

> The perception of the existence of the Other as an attempt on my life, as a mortal threat or absolute danger whose biophysical elimination would strengthen my potential to life and security – this, I suggest, is one of the many imaginaries of sovereignty characteristic of both early and late modernity itself. (2003, 18)

But the risk scenarios projected by Eurosur and Jora are just as much an illusion as the predictability these systems construct. In reality migration evades predictive calculations, not just because data is never sufficient but because people on the move always find new routes, networks and logistics of travel, despite the deadly border regimes they have to surmount.

Conclusion

Although we are not the first to argue that "software alters the condition through which society, space and time, and thus spatiality, are produced" (Kitchin and Dodge 2011, 13), we have tried to offer a historical and comparative perspective on how digital data contributes to the production of knowledge and information in continuity with the function of colonial technologies. In recognising the strength of tech giants and states competing for 'digital resources,' especially in countries historically ravaged by colonial powers, we argue that it is essential to recognise the colonial logics underpinning them. The dispossession and racialised violence at play in data relations requires further study of the implications of data in colonial practices and imperialist projects, rooted in a historical understanding of modern (and thus colonial) statehood. Drawing from the work of historian Carlo Ginzburg (2014), we agree with Lucarini (2019, 87) that colonial archives should be read against the intention of those who produced them. For us, this is an exhortation to study the use of data against the intention of those who extract and need it. As we discussed, administrative, descriptive, and bureaucratic tasks fulfilled a function beyond the immediate control and regulation of life in

the colony, as they all responded to the broader missions of producing knowledge. As we have laid out, in the Global South data plays a role that is specific to histories of imperial relations and colonisation: big data is proposed as a way of widening access to the necessary technology of knowing populations (Isin and Ruppert 2019, 217), a legitimising framework akin to the paradigm of *tabula rasa*. The economic and political development of those countries is explained as a lack of statistical, scientific knowledge; as such big data represents the key to capitalist development. The Global North increasingly depends on the collection and archiving of data as a technology for the reproduction of sovereignty, with the necropolitical implications we discussed. Knowledge production about populations and territories is never a matter of national governance; rather, it operates at an imperial level.

Notes

[1] Oracle is one of the most famous data management platforms.

[2] In his books and lectures at the Collège de France, Michel Foucault coined the concept of biopolitics to describe the regime of regulatory mechanisms that is concerned with population as an object of knowledge and power (Foucault 1978; 2003; 2007).

References

Alston, Philip. 2019. “Report of the Special Rapporteur on Extreme Poverty and Human Rights.” *Human Rights Commission*. https://chrgj.org/wp-content/uploads/2020/07/Alston-Poverty-Report-FINAL.pdf. Accessed September 11, 2020.

Anderson, Benedict R. [1983] 2006. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. London: Verso.

Arrighi, Giovanni. 1990. “The Three Hegemonies of Historical Capitalism.” *Review (Fernand Braudel Center)* 13 (3): 365-408.

Asseco, n.d. “Joint Operations Reporting Application.” https://pl.asseco.com/en/sectors/uniformed-services/security-sector/joint-operations-reporting-application-378/. Accessed November 9, 2020.

Badenhoop, Elisabeth. 2020. “Contextualising Frontex: A Long-Term Perspective on Database Monitoring of Migrants.” *Verfassungsblog*. https://verfassungsblog.de/contextualising-frontex-a-long-term-perspective-on-database-monitoring-of-migrants/. Accessed February 4, 2020.

Bigo, Didier. 2002. “Security and Immigration: Toward a Critique of the Governmentality of Unease.” *Alternatives: Global, Local, Political* 27 (1-Supp): 63-92.

Benjamin, Ruha. 2016. “Innovating Inequity: If Race is a Technology, Post-Racialism is the Genius Bar.” *Ethnic and Racial Studies* 39 (13): 2227-2234.

——, ed. 2019. *Captivating Technology. Race, Carceral Technoscience, and Liberatory Imagination in Everyday Life*. Durham: Duke University Press.

Bhatia, Amiya, and Jacqueline Bhabha. 2017. “India’s Aadhaar Scheme and the Promise of Inclusive Social Protection.” *Oxford Development Studies* 45 (1): 64-79.

Breckenridge, Keith. 2014. *Biometric State. The Global Politics of Identification and Surveillance in South Africa, 1850 to the Present*. Cambridge: Cambridge University Press.

Césaire, Aimé. 2004. *Discours sur le colonialisme*. Paris: Présence Africaine.

Christopher, Anthony John. 2008. “The Quest for a Census of the British Empire C.1840-

1940." *Journal of Historical Geography* 34 (2): 268–285.

Cohen, Julie. 2015. "The Biopolitical Public Domain: The Legal Construction of the Surveillance Economy." *Technology and Philosophy* 31: 213-233.

Couldry, Nick, and Ulises A. Mejias. 2019a. "Data Colonialism: Rethinking Big Data's Relation to the Contemporary Subject." *Television & New Media* 20 (4): 336-349.

——. 2019b. *The Cost of Connections: How Data is Colonising Human Life and Appropriating it for Capitalism.* Stanford: Stanford University Press.

——. 2019c. "Datafication." *Internet Policy Review* 8 (4): 1-10.

De Genova, Nicholas. 2017. *The Borders of "Europe": Autonomy of Migration, Tactics of Bordering*. Durham and London: Duke University Press.

Dijstelbloem, Huub, Rogier Van Reekum, and Willem Schinkel. 2017. "Surveillance at Sea: The Transactional Politics of Border Control in the Aegean." *Security Dialogue* 48 (3): 224-240.

Dyer-Witheford, Nick. 2015. *Cyber-Proletariat: Global Labour in the Digital Vortex.* London: Pluto Press.

Elkins, Caroline. 2015. "Looking Beyond Mau Mau: Archiving Violence in the Era of Decolonization." *American Historical Review* 120 (3): 852-868.

Ellebrecht, Sabrina. 2014. "The European Border Surveillance System EUROSUR: The Computerization, Standardization and Virtualization of Border Management in Europe." In *OSCE Yearbook* 2013, edited by Organization for Security and Co-operation in Europe, 231-243. Baden-Baden: Nomos.

European Commission. 2017. "Eurosur." *Migration and Home Affairs*. https://ec.europa.eu/home-affairs/what-we-do/policies/borders-and-visas/border-crossing/eurosur_en. Accessed September 11, 2020.

Fanon, Frantz. 2001. *The Wretched of the Earth*. London: Penguin.

Foucault, Michel. 1978. *The History of Sexuality: An Introduction*. New York: Pantheon Books.

——. 2003. *Society Must Be Defended: Lectures at the Collège de France, 1975-76.* Translated by D. Macey. New York: Picador.

——. 2007. *Security, Territory, Population: Lectures at the Collège De France 1977-1978*. Basingstoke: Palgrave Macmillan.

Ginzburg, Carlo. 2014. *Rapporti di forza. Storia, retorica, prova*. Torino: Einaudi.

Gitelman, Lisa. 2013. *"Raw Data" is an Oxymoron*. Cambridge, MA: MIT Press.

Harvey, David. 2003. *The New Imperialism*. Oxford: Oxford University Press.

Hacking, Ian. 2015. "Biopower and the Avalanche of Printed Numbers." In *Biopower: Foucault and Beyond*, edited by Vernon W. Cisney and Nicolae Morar, 65-80. Chicago: University of Chicago Press.

Isin, Engin, and Evelyn Ruppert. 2019. "Data's Empire." In *Data Politics. World, Subjects, Rights*, edited by Didier Bigo, Engin Isin, and Evelyn Ruppert, 207-228. New York: Routledge.

Kitchin, Rob, and Martin Dodge. 2011. *Code/Space*. Cambridge, MA: MIT Press.

Locke, John. 1947. *Two Treatises on Government*. New York: Hafner Publishing Co.

Lucarini, Niccolò. 2019. "Sovvertire l'archivio coloniale: note etnografiche sulla decolonizzazione keniota." *From the European South* 5: 81-95.

Madianou, Mirca. 2019. "Technocolonialism: Digital Innovation and Data Practices in the

Humanitarian Response to Refugee Crises." *Social Media + Society* July-September 2019: 1-13.

Mbembe, Achille. 2003. "Necropolitics." *Public Culture* 15 (1): 11-40.

Mezzadra, Sandro, and Brett Neilson. 2013. "Fabrica Mundi: Producing the World by Drawing Borders." *Scapegoat*: *Architecture, Landscape, Political Economy* 4: 3-19.

——. 2017. "On the Multiple Frontiers of Extraction: Excavating Contemporary Capitalism." *Cultural Studies* 31 (2-3): 185-204.

Mignolo, Walter D., and Katherine E. Walsh. 2018. *On Decoloniality: Concepts, Analytics, Praxis*. Durham, NC: Duke University Press.

MIT Technology Review. 2016. "The Rise of Data Capital." http://files.technologyreview.com/whitepapers/MIT_Oracle+Report-The_Rise_of_Data_Capital.pdf?_ga=2.197646892.2050095012.1614068786-1969061692.1614068786. Accessed September 10, 2020.

Nyabola, Nanjala. 2018. *Digital Democracy, Analogue Politics. How the Internet Era is Transforming Politics in Kenya*. London: Zed Books.

Pistor, Katharina. 2020. "Statehood in the Digital Age." *Constellations* 27 (1): 3-18.

Rao, Ursula. 2019. "Biometric IDs and the remaking of the Indian (welfare) state." *Economic Sociology* (21) 1:13-21.

Sadowski, Jathan. 2019. "When Data is Capital: Datafication, Accumulation, and Extraction." *Big Data & Society* 6 (1): 1-12.

Scannell, Joshua R. 2019. "This is not Minority Report: Predictive Policing and Population Racism." In *Captivating Technology. Race, Carceral Technoscience, and Liberatory Imagination in Everyday Life*, edited by Ruha Benjamin, 107-129. Durham: Duke University Press.

Scott, James C. 1999. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven, CT: Yale University Press.

——. 2006. "Cities, People, and Language." In *The Anthropology of the State: A Reader*, edited by Aradhana Sharma and Akhil Gupta, 247-269. Oxford: Blackwell Publishing.

Sepulveda-Carmona, Magdalena. 2019. "Biometric Technology and Beneficiary Rights in Social Protection Programmes." *International Social Security Review* 72 (4): 3-28.

Skeggs, Beverley, and Yuil Simon. 2019. "Subject of Value and Digital Personas: Reshaping the Bourgeois Subject, Unhinging Property from Personhood." *Subjectivity* 12 (1): 82-99.

Srnicek, Nick. 2017. *Platform Capitalism*. London: Pluto Press.

Stoler, Ann Laura. 2002. "Colonial Archives and the Art of Governance." *Archival Science* 2: 87-109.

Tazzioli, Martina. 2018. "Spy, Track and Archive: The Temporality of Visibility in Eurosur and Jora." *Security Dialogue* 49 (4): 272-288.

Terranova, Tiziana. 2000. "Free Labor: Producing Culture for the Digital Economy." *Social Text*, 18 (2): 33-58.

Thatcher, Jim, O'Sullivan, David, and Dillon Mahmoudi. 2016. "Data Colonialism through Accumulation by Dispossession: New Metaphors for Daily Data." *Environment and Planning D: Society and Space* 34 (6): 990-1006.

Treguer, Félix, 2019. "Seeing Like Big Tech: Security Assemblages, Technology, and the Future of State Bureaucracy." In *Data Politics. World, Subjects, Rights*, edited by *Data Politics. World, Subjects, Rights*, edited by Didier Bigo and Engin Isin, and Evelyn Ruppert, 145-164. New York: Routledge.

Tsing, Anna. 2005. *Friction: An Ethnography of Global Connection*. Princeton: Princeton University Press.

——. 2013. “Sorting Out Commodities: How Capitalist Value is Made through Gifts.” *HAU: Journal of Ethnographic Theory* 3 (1): 21-43.

Wallerstein, Immanuel. 2011. *Historical Capitalism*. London: Verso.

Williams, Eric E. 1994. *Capitalism and Slavery*. Chapel Hill: University of North Carolina.

Zuboff, Shoshana. 2015. “Big Other: Surveillance Capitalism and the Prospects of an Information Civilization.” *Journal of Information Technology* 30 (1): 75-89.

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