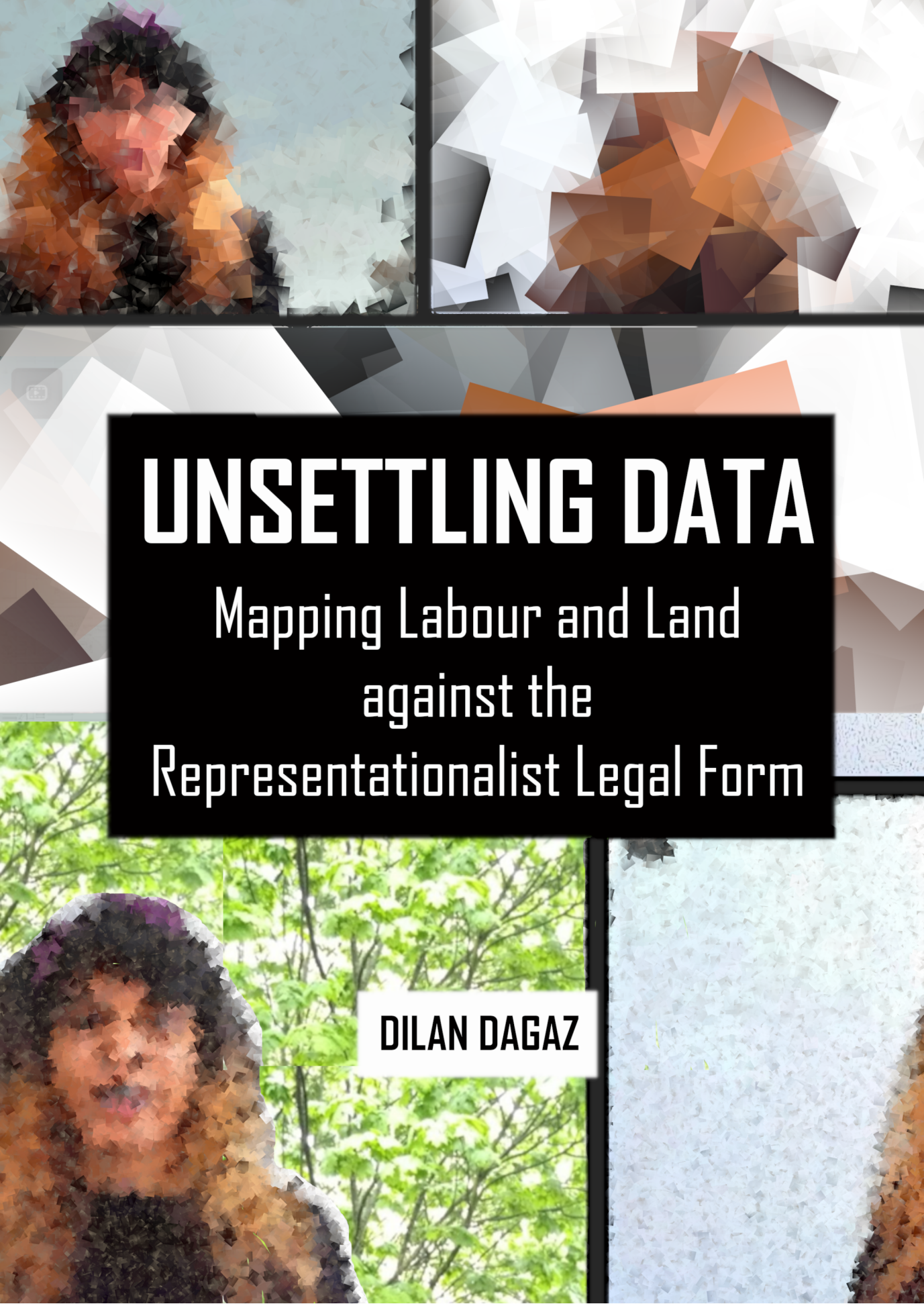

UNSETTLING DATA

Mapping Labour and Land against the Representationalist Legal Form

DILAN DAGAZ

UNSETTLING DATA

What prevents data governance law from redressing the widespread exploitation of labour and land rampant across the data economies of our digital Earth? *Unsettling Data* answers this question by scrutinising the legal grammar of 'data' to expose the persistence of hierarchical power relations between the observer and the observed. The role of the modern legal form in fortifying and obscuring these power relations is elucidated. Proposing representationalism as the framework to map these hidden yet pervasive power relations, the book reveals how the representationalist legal form serves to delink the agency of the data subject from unjust labour and land exploitation in the digital political economy. Highlighting the importance of Indigenous/Adivasi perspectives for unsettling the philosophical core of Western(ised) data governance, *Unsettling Data* argues for the formal reconceptualisation of data as the entangled human and unhuman agencies implicated in its production; paving the way for a new legal grammar of data rooted in relational reciprocity. *Unsettling Data* will be of interest to readers in critical legal theory, law and humanities, law and political economy, data protection, information law, AI governance, intellectual property as well as anyone seeking to understand the legal form or aesthetics of data from a critical lens.

Dilan Dagaz is an independent researcher and writer based in the UK. He has previously served as a Lecturer (Assistant Professor) in Law at the University of Exeter and holds a PhD in Legal Sciences *summa cum laude* from the Humboldt University of Berlin. Having worked under different names with the civil society and academia across India, Germany, and UK, he holds significant international experience of policy advocacy, research communication, teaching and organising on issues of digital rights, net neutrality, media law, algorithmic regulation, data governance, and intellectual property. Stepping away from academia and the mainstream legal world, Dilan currently practises as a witch, with research interests at the intersection of magic, law, science, and the nature of reality. More about his work can be found on his website www.theunsettlingwitch.com.

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Mapping Labour and Land against the Representationalist Legal Form

Dilan Dagaz

The Institute for Technology in The Public Interest

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Dedicated to the trees of Hasenheide, Neukölln

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Note from the Author

Research for this book was developed from 2017-2021 as part of my doctoral thesis, undertaken with the support of the German government's DAAD Graduate School Scholarship Programme at the Humboldt University of Berlin. Building on the thesis, the book manuscript was developed largely over 2022. I have made a few edits since for purposes of clarity and organisation, but the core content remains largely unchanged. Initially, I was eager to publish this book with an established university or academic press; however, as the genocide in Palestine unfolded since 2023, leading to increasing personal dissonance with academia, I struggled with motivation to interact with academic structures and institutions. Talks I had been in with ostensibly critical series editors at reputed academic presses fell through due to various political misalignments. As I grappled with my academic identity, coming out as transsexual in 2024 made the institutional violence of academia even clearer. And although in many ways, I had never truly related to university and academic spaces, in 2025, I was compelled to leave academia sooner than expected.

I had expected to publish this book while still an institutionalised academic; but that was not to be. So, with the encouragement of a few lovely academic friends and thoughtful mentors, who incredibly, are still interested in this work, I am publishing it with The Institute for Technology in the Public Interest (TITiPI), who have been fantastic in their support. Since the writing of this book, there have been many new legal developments as well as developments in the discourse of data governance, which may not be reflected in the contents of the book; and for that, I apologise. But I believe that the core argument still holds in the wake of these developments; and I hope that in finally releasing this work into the world, the right people may find it, and make use of it in the ways they need. That being said, any errors or inaccuracies in the book remain mine.

Acknowledgments

This book has been a magical journey of many unexpected synchronicities. Thank you to Prof. Joris van Hoboken and Dr. Seda Gürses for guiding me through many academic and emotional roadblocks over the years. Sans their consistent feedback and enthusiasm, this book would not be. I am grateful for the DAAD Graduate School Scholarship Programme; and to Prof. Philipp Dann, who recommended my application. He facilitated infrastructural support and academic discussions, which helped me develop some structural thinking for this book; while also providing insight into the White supremacist biases of German academia donning liberal garb. Thank you to Prof. Angela Daly and to Dr. Andrea Wallace, whose critical engagements have definitely helped improve this book. I am also grateful for discussions with Dr. Seeta Peeña Gangadharan and Prof. Helen V. Pritchard, which helped me familiarise with cutting-edge approaches in media studies and art. Special thanks to Prof. Kavita Philip for many generous early conversations, which were influential in helping me find my voice for this book, and beyond. Crucially, a big thank you to everyone at TITiPI, especially Femke Snelting and Prof. Miriyam Aouragh, whose support in the publication process has been pivotal.

I am also grateful for engagements with the Indian civil society between 2009-16, on issues of representation, political economy, and media. Working with the communities around Alternative Law Forum, Centre for the Internet and Society, Sarai, Centre for the Study of Developing Society, and Centre for the Study of Culture and Society gave me good grounding in postcolonial critiques, digital media, and data governance landscape; while eventually also realising their limitations in casteist, settler, and neocolonial contexts. Many thanks to Families Minj and Hemrom for their early presence; it helped me read between the lines years later. Thanks to Sunita and Sanjeev for teaching me about pain and resilience.

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I am not your data

Poem by Abhay Flavian Xaxa

I am not your data, nor am I your vote bank,
I am not your project, or any exotic museum object,
I am not the soul waiting to be harvested,
Nor am I the lab where your theories are tested.

I am not your cannon fodder, or the invisible worker,
or your entertainment at India habitat centre,
I am not your field, your crowd, your history,
your help, your guilt, medallions of your victory.

I refuse, reject, resist your labels,
your judgments, documents, definitions,
your models, leaders and patrons,
because they deny me my existence, my vision, my space.

Your words, maps, figures, indicators,
they all create illusions and put you on pedestal,
from where you look down upon me.

So I draw my own picture, and invent my own grammar,
I make my own tools to fight my own battle,
For me, my people, my world, and my Adivasi self!

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Part I

Framing Representationalism

CHAPTER 1
INTRODUCTION

"I am not your data, nor am I your vote bank,
I am not your project, or any exotic museum object…" [1]

1.1. Data/Law/Power

It is said that we live in a knowledge society of global scale. Increasingly central to this knowledge society is the idea of 'data.' For a large part of European history, the word 'data' was simply understood to denote the act or state of being given.[2] As a relatively new term in the popular contemporary sense of "*facts, esp. numerical facts, collected together for reference or information*,"[3] data today seems inescapable. In some past 500 years, data has become progressively crucial to the organisation of society and economy. As well, data have become varied, ubiquitous, produced at large scales, or simply, 'big.' Indeed, amongst the buzzwords of the 2010s, few terms stand out quite like 'big data.' Core to the functioning of today's globalised economy, big data has sparked off new technologies for its processing and application. These 'data technologies' include data analytics, machine learning

[1] Abhay Flavian Xaxa, 'I am not your data' (2011) <https://www.roundtableindia.co.in/i-am-not-your-data-nor-am-i-your-vote-bank-in-memoriam-sociologist-and-activist-abhay-xaxa-2/> accessed 19 February 2021

[2] Daniel Rosenberg, 'Data as Word' (2018) 48 (5) Historical Studies in the Natural Sciences 557, 559

[3] *"Data, n." Oxford English Dictionary* (Clarendon Press 1989). *See also* Daniel Rosenberg, 'Data before the Fact' in Lisa Gitelman (ed.), *Raw Data is an Oxymoron* (MIT Press 2013)

algorithms, autonomic computing, and Artificial Intelligence or AI— all of whose functioning is entirely reliant upon such data. Within these technological configurations, data today is deployed in the globalised economy for the management of manufacturing processes[4], administration of global value chains[5], trading in capital markets,[6] forecasting demand and supply trends for price setting as well as for consumer-oriented price discrimination.[7] As the administrator of one of the richest markets globally, the European Commission identifies big data as a the most important economic resource in the 21st century.[8]

The story of data however is not all rosy. Large datasets and the technologies they have spawned have also been experienced as disruptive. This disruption has occurred not just in the tech evangelist sense of "disruptive innovation" popularised by digital entrepreneurs,[9] but importantly also in the more pessimistic assessment of data technologies and the unjust societies they create. Data and technologies based upon it are noted today to perpetuate gendered, racialised, ableist discrimination,[10] exploit workers,[11] cause environmental

[4] Jay Lee *et al*, 'Recent Advances and Trends in Predictive Manufacturing Systems in Big Data Environment' (2013) 1 (1) Manufacturing Letters 38, 40

[5] Edward Curry, 'The Big Data Value Chain: Definitions, Concepts and Theoretical Approaches' in Jose Maria Cavanillas *et al* (eds.), *New Horizons for a Data-Driven Economy* (Springer, 2016)

[6] Frank Pasquale, *The Black Box Society: The Secret Algorithms that Control Money and Information* (Harvard University Press 2015)

[7] Matthew Waller & Stanley Fawcett, 'Data Science, Predictive Analytics, and Big Data: A Revolution That Will Transform Supply Chain Design and Management' (2013) 34(2) Journal of Business Logistics 77

[8] European Commission, 'Big Data' (March 2019) <https://ec.europa.eu/digital-single-market/en/big-data> accessed 25 September 2019

[9] *See* for example, Lilly Irani, *Chasing Innovation: Making Entrepreneurial Citizens in Modern India* (Princeton University Press 2019) for an account of the tech evangelist sense of "disruptive innovation" in the global and Indian contexts.

[10] Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code* (Polity Press 2019); Safiya Umoja Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism* (NYU Press 2018); Cathy O'Neill, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* (Crown Books 2016)

[11] Javier Sanchez-Monedero, Lina Dencik *et al,* 'What does it mean to 'Solve' the Problem of Discrimination in Hiring?: Social, Technical, and Legal Perspectives from the UK on automated

destruction[12] and in general, deepen social and economic inequality as part of the capitalist programme of exploitation.[13] Amidst this chaos, law is called upon to bring some order, restore some sanity, and even dispense justice. Many legal professionals and scholars of law and technology see it as part of their repertoire to renegotiate and fix using law, what data technologies break or disrupt in society.[14] To do this, they broadly seek to use legal tools to govern data. Accordingly, legal norms are sought to be developed in order to create a desirable society that protects fundamental and human rights and/or ensure an efficient economy. For instance, a recent European Commission proposal for a data governance regulation seeks to "*address the barriers to a well-functioning data-driven economy.*"[15] This is just one miniscule example of the many legislations and policy

hiring systems' (2020) FAT* '20: Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency 458, 462. *See also,* Janine Berg, 'Protecting Workers in the Digital Age: Technology, Outsourcing and the Growing Precariousness of Work' (2019) 41(1) Comparative Labor Law and Policy Journal; Valerio De Stefano, '"Negotiating the Algorithm": Automation, Artificial Intelligence, and Labour Protection' (2018) ILO Working Paper No. 246 <https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_policy/documents/publication/wcms_634157.pdf> accessed 21 April 2021; Uma Rani & Parminder Jeet Singh, 'Digital Platforms, Data, and Development: Implications for Workers in Developing Economies" (2019) 41(1) Comparative Labor Law and Policy Journal

[12] Emily M. Bender, Timnit Gebru *et al,* 'On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?'(2021) FaccT '21: Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency, 610; Marisol Sandoval, 'The Hands and Brains of Digital Culture: Arguments for an Inclusive Approach to Cultural Labour' in Eran Fisher & Christian Fuchs (eds.) *Reconsidering Value and Labour in the Digital Age* (Palgrave Macmillan 2015); Jennifer Gabrys, *Digital Rubbish: A Natural History of Electronics* (The University of Michigan Press 2011)

[13] Paula Chakravartty & Yuezi Zhao (eds.), *Global Communications: Towards a Transcultural Political Economy* (Rowman & Littlefield 2008); Miriam Aouragh & Paula Chakravartty, 'Infrastructures of empire: towards a critical geopolitics of media and information studies' (2016) 38 (4) Media, Culture & Society 559; Manuela Bojadžijev & Sandro Mezzadra, 'Debating Platform Capitalism' (2020) 7 Notas Y Discusiones, *Soft Power. Revista euro-americana de teoría e historia del apolitical y del derecho* 237; Kalindi Vora, *Life Support: Biocapital and the New History of Outsourced Labour* (University of Minnesota Press 2015). *See additionally*, Soshanna Zuboff, *The Age of Surveillance Capitalism* (Profile Books 2019); Christian Fuchs, *Digital Labour and Karl Marx* (Routledge 2014)

[14] *See for instance*, Roger Brownsword, Eloise Scotford *et al* (eds.), *The Oxford Handbook of Law, Regulation, and Technology* (OUP 2017)

[15] European Commission, 'Proposal for a Regulation of the European Parliament and of the Council on European Data Governance (Data Governance Act)' COM (2020) 767 final, 25 November 2020, Recital 4

documents concerning data flows and data protection that seek to govern data with the aim of ensuring a good society and/or economy. The proper governance of data is thus seen to be crucial for the functioning of the socio-economy in a desirable way.

Given this emphasis on the governance of data as a legal entity, curiosity about how the law understands data is naturally provoked. How does the modern law understand and even construct 'data'? This question serves as the departure point for this book. In asking this question, I am not interested in reproducing some legal definition of data provided in legislative texts or even in using doctrinal tools of legal argumentation and interpretation to discover what data might mean in the law. Rather, I am interested in excavating something more fundamental. I am interested in legal form or aesthetic of data; in other words, the internal structure of the legal thinking which produces the very concept of data. These are the unwritten processes that law undertakes while conceptualising data but does not acknowledge. More than answering *what* the law thinks data is, I am then called to understand *how* law imagines data, and in turn how it imagines knowledge and the world itself. By asking how the law approaches data, I intend to map the multiple layers to the law's imagination of data. This layered imagination of data is embedded not just in the law but is also cultural since the law does not exist outside of its culture. The intention in this book thus is to reveal the narratives and the cultural lifeworld that act beneath and within the law to enable it to conceptualise data as it does today.

At first glance, this might sound like a highly abstract intellectual endeavour with no particular practical relevance; however, it is not. Despite its broad formulation, as the question about law's imagination of data came to me, I was guided to follow it because of a nagging suspicion, a seed planted by Indigenous, Adivasi,

transsexual, queer and working-class voices from so-called 'global south' geographies. That seed indicated that while seemingly innocent, this question could reveal a lot about the politics of knowledge-making and its implications within the digital Earth.[16] And in my research this has been proven true. The conceptualisation of data undertaken today by law, specifically by modern law rooted in European systems of knowledge or the Western cultural archive[17] has huge implications for the administration and everyday exploitation that occurs within global value chains of data. In many ways, the law's ability to recognise and address such exploitation turns upon how the latter is able to imagine data and how it is not. The point is that there is a linkage between law's imagination of data and the creation of exploitative relationships of power in our digital Earth. By asking how law conceives data, this book intends to reveal this linkage.

In hindsight, I realise that the breadth of the question concerning the law's imagination of data was not so much an impediment to academic rigour as much as necessary in order to present what anthropologists have described as 'thin description.'[18] In a world populated by immersive expertise or 'thick' accounts, it is often too easy to take for granted categories, concepts, and distinctions like 'data', 'law', or even 'knowledge' that are fundamental to a field or discipline. It is also easy to lose sight of the pervasiveness of certain (historically and culturally-

[16] I use the word 'knowledge' here in the broadest sense to refer to ways of knowing and meaning-making. In this regard, both the terms 'data' and 'information' should be understood as aesthetic forms of knowledge.

[17] Michel Foucault has described the cultural archive as "*the general system of the formation and transformation of statements"* which "*reveals the rules of a (cultural) practice that enables statements both to survive and to undergo regular modification*." See Michel Foucault (trans. A.M. Sheridan Smith), *Archaeology of Knowledge* (Routledge 2002) 146. In this sense, knowledge systems like law and science are thus to be understood as a part of the cultural archive and not above or outside of it. *See also in this regard,* Renisa Mawani, 'Law's Archive' (2012) 8 Annual Review of Law and Social Science 337

[18] John L. Jackson Jr., *Thin Description: Ethnography and the African Hebrew Israelites of Jerusalem* (Harvard University Press 2013)

shaped) modes of research and knowledge-making, the boundaries created to define fields and disciplines within cultural archives and the effortless legitimacy granted to production and reproduction of knowledge *within or in alignment* with these boundaries. As an analytical strategy, thin description seeks to challenge the given-ness or obviousness of these inter- and intra-disciplinary boundaries and connect disparate fields of research all the while being guided by lived experiences of power.

This thin research tactic becomes especially important in our digital Earth where data, news, and information cycles often enact power by drawing detailed attention to some geographies, peoples, or even aspects of individual life while normalising other aspects as 'fringe' or 'marginal.' The ability to pose broad research questions to challenge received wisdom about disciplinary relevance, concepts, and boundaries and connect purportedly unconnected things and disparate fields of knowledges then becomes essential. For without these challenges to received knowledges and making improbable connections, we may not speak truth to power that operates today not monolithically but in a highly fragmented way.[19] In the words of sociologist Ruha Benjamin, "*Thinness, in this way, attempts a humble but no less ambitious approach to knowledge production. Thinness allows greater elasticity, engaging fields of thought and action too often disconnected. This analytic flexibility, in my view, is an antidote to digital disconnection, tracing links between individual and institutional, mundane and spectacular, desirable and deadly in a way that troubles easy distinctions.*"[20]

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[19] On the fragmentation of power *see for example*, Kalyan Sanyal, *Rethinking Capitalist Development: Primitive Accumulation, Governmentality and Post-Colonial Capitalism* (Routledge 2007). For a discussion of how the idea of monolithic or universal power has been questioned in the international legal discourse, *see* Luis Eslava and Sundhya Pahuja, 'Beyond the (Post)Colonial: TWAIL and the Everyday Life of International Law' (2012) 45(2) Verfassung und Recht in Übersee 195. *See also,* Michel Foucault, 'The Subject and Power' (1983) 8 (4) Critical Inquiry 789, 791-792

[20] Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code* (Polity Press 2019) 42

Another reason why one might be exacted to ponder upon modern law's understanding of an ostensibly innocuous term like 'data' is because legal words carry significance of a particular kind. In his influential speech-act theory, British philosopher J.L. Austin has proposed understanding law as a series of performative speech-acts.[21] Law's language is then not mere words but inheres performance of those words and produces action in the world. And despite what the dominant strand of legal positivism would have us believe, these performative words cannot be perceived as neutral or apolitical. As the US-American legal scholar Robert Cover has famously observed, "*Legal interpretation takes place in a field of pain and death*."[22] The French philosopher Jacques Derrida additionally describes the founding moment of law as one of performative and interpretative violence.[23] Though granted, my study is not merely about the word 'data' or its legal interpretation but rather about the specific culture of knowledge production which modern law draws upon to construct or formulate its understanding of 'data'; nevertheless, the performative and oft-violent burden carried by words in modern law does provide an impetus to begin an enquiry into law's imagination of 'data.' In any case, legal words do inhabit a narrative that corresponds to law's normative world.[24] In this scenario, it would perhaps be almost impudent to encounter a word like 'data' in law without attempting to excavate its larger narrative and the politics underlying it.

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[21] J.L. Austin, *How to do Things with Words*, 2nd edition, J.O. Urmson and M. Sbisá (eds.) (Harvard University Press, 1963). Austin's work was influential for several legal philosophers, particularly in the analytic legal tradition. *See for instance*, H.L. A. Hart, *Essays in Jurisprudence and Philosophy* (Clarendon 1983); H.L.A. Hart, *The Concept of Law,* 3rd edition (Clarendon 2012); Neil MacCormick, *Legal Reasoning and Legal Theory* (OUP 1994)

[22] Robert Cover, 'Violence and the Word' (1986) 95 Yale Law Journal 1601

[23] Jacques Derrida, 'Force of Law: The Metaphysical Foundation of Authority' in Drucilla Cornell, Michel Rosenfeld *et al*(eds.), *Deconstruction and the Possibility of Justice* (Routledge 1992)

[24] Robert Cover, 'Nomos and Narrative' (1983) 97 Harvard Law Review 4

The third and perhaps the most critical reason why the question about law's imagination of data should not be too easily dismissed is a matter of positionality. Positionality refers to the notion that our knowledge about the universe is always subjective and is shaped by social and spatial positions indicated by race, gender, class, geography and other aspects of social identity.[25] Additionally, neither these spatial or social positions nor the relationships between these positions are fixed or given but are in constant flux even as they are highly dependent on time and context.[26] Consequently, not only is knowledge a product of one's specific position reflecting particular places, cultural spaces, and social identities but also, the understanding of cultural positions and identity perpetually shifts due to the creation of such knowledge.[27] This means that what we know or how we understand 'data' or 'law' is highly dependent on from where we approach these concepts.

Our differing positions in digital Earth can thus reveal not just unproblematised relationships of difference but problematic differential relationships *of power* to both law and data. Asking what is unjust about data governance today from the positionality of a White cis-gendered European legal positivist for instance,

[25] Positionality may be defined as the notion that "*personal values, views, and location in time and space influence how one understands the world. In this context, gender, race, class, and other aspects of identities are indicators of social and spatial positions and are not fixed, given qualities. Positions act on the knowledge a person has about things, both material and abstract. Consequently, knowledge is the product of a specific position that reflects particular places and spaces.*" Luis Sanchez, 'Positionality' in Barney Warf (ed.) Encyclopaedia of Geography (Sage, 2010). For a detailed discussion on positionality *see*, Stuart Hall, 'Cultural Identity and Diaspora' in Linda McDowell (ed.), *Undoing Place? A Geographical Reader* (Taylor & Francis 1997)

[26] Chandra Talpade Mohanty, 'Feminist encounters: locating the politics of experience' in Linda Nicholson and Steven Seidman (eds.), *Social Postmodernism: Beyond Identity Politics* (CUP, 1995); Trinh T. Minh-Ha, *Woman, native, other: writing postcoloniality and feminism* (Indiana University Press, 1989). *See also*, Patricia Hill Collins, *Black Feminist Thought*: *Knowledge, Consciousness, and the Politics of Empowerment* (Hyman, 1990)

[27] Brenda Cossman, 'Turning the Gaze Back on Itself: Comparative Law, Feminist Legal Studies, and the Postcolonial Project' (1997) 2 Utah Law Review 52, 529; David Rubin, 'Situating Feminist Epistemology in a Global Frame' (2009) 10 (1) intersections 454

would incur a very different mode of questioning and response than would come from say, a Black trans-gendered African critical race theorist. Similarly, approaching the research question about modern law's imagination and construction of data can yield quite different studies depending on one's positionality. Given this, it is time to clarify my own positionality for the purpose of the present study. In this book, I have sought to approach the research question from the position of a queer brown trans man who grew up in the 'third world' and who is now resident in Western Europe. This positionality has shaped my experience of both data, data technologies as well as law (both "there" and "here"), which has seldom been benevolent. More often than not, I have witnessed law, data, and technology being used as instruments of neocolonial power and have known law to be complicit in enacting new projects and paradigms of knowledge, data, and technology of an oppressive nature, and vice-versa. Because it brings together two systems— law and science & technology — which both enact oppressive power, the question of legal imagination of data for me absolutely cannot be posed without accounting for and problematising power relations that emanate from the experience of law, data, and technology. This political orientation is perhaps evident in my inclination to connect questions about exploitative relations of power in digital Earth to legal thinking about data.

Another identity which is implicit in my positionality for this book and shapes my political orientation is the experience of growing up in a neocolonial technological settler community occupying Indigenous lands[28] in the state of

[28] By 'Indigenous lands' I mean lands belonging to Indigenous peoples. The UN Indigenous and Tribal Peoples Convention identifies Indigenous peoples as follows:
"*(a) Tribal peoples in independent countries whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations;*
(b) Peoples in independent countries who are regarded as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or

Jharkhand currently in eastern India. Shaped by the larger Western cultural hegemony and neocolonial global racialised economy, like many other modern nation-States, India was developed as a homogenising settler-colonial State since its inception. It was into this so-called 'post'colonial context that I was born. Being formally educated in European linguistic and knowledge systems from a young age, my knowledge and thinking were moulded to become a part of the Western cultural archive and contribute to the neocolonial settler project on Indigenous territories in eastern India. My formal legal education in India and Europe was a continuation of this project of settler privilege and indoctrination, not separate. At the same time, through my upbringing and later studies, I am grateful to have encountered Indigenous ways of thinking and knowledge-making that are vastly different from European modes of knowledge. Not to mention that I witnessed at an everyday level how European and Westernised knowledges operating as 'science and technology' and 'law' in neo-/'post'colonial settings were and are used to delegitimise and heap violence upon Indigenous peoples' knowledges and ways of life.

Given my privileged settler positionality, I was unfortunately often an unwitting participant in such violence as well because I was a product of my community and did not know any better. I regret such participation immensely. It has been a long journey since where I have tried to reflect upon, make sense, attempted to humbly learn from these experiences and my mistakes and heal so that I do not repeat that cycle of violence. This self-healing process of course is continuous,

colonisation or the establishment of present State boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions." Additionally, self-identification as Indigenous or tribal is regarded as a fundamental criterion for determining Indigeneity under the UN Convention. See UN Indigenous and Tribal Peoples Convention, 1989 (No. 169), <https://www.ohchr.org/EN/ProfessionalInterest/Pages/Indigenous.aspx> accessed 26 April 2021. Throughout this book, I use the term Indigenous (with capital I as opposed to the small i) to refer to this understanding of Indigenous peoples.

eternal, and still ongoing. But over the years, this process has committed me to a lifelong interest in the politics of knowledge-making, including how modern law as part of the European knowledge system and the Western cultural archive, produces knowledge, and what kinds of power relations such productions enact. So, when I ask how law imagines or constructs data in this book, I intend to not just problematise power relations in context of law, data, and technology, but also to *unsettle* the idea that modern law's conception of data is either obvious or benign.

1.2. On Unsettling

This notion of unsettling is important for this book. First, colonialism, either of the pasts or of presents, is built foremost upon colonisation of the mind that is, colonisation of knowledge systems in which language plays a central part.[29] The significance of the fact that I am writing this book in English— a language my ancestors were colonised with but which now I speak as my primary language, and which wittingly or unwittingly is still used to wield power over Indigenous and non-Indigenous 'post'-colonised peoples— is not lost on me. But there is more to knowledge systems than a superficial difference of language. Because the colonisation of language is political. Colonialism attacks and delegitimises ideas and concepts, ways of seeing the world and making knowledge through a language that are incommensurable to the coloniser or settler's lifeworld.[30] It thus underpins culturally-validated processes of deep structural violence. Even as they enact violence, the settler's systems of knowledge, and modes of knowledge

[29] Ngũgĩ wa Thiong'o, *Decolonising the Mind: The Politics of Language in African Literature* (Heinemann Educational, 1986), Achille Mbembe, *On the Postcolony* (University of California Press, 2001)
[30] Eve Tuck & K. Wayne Yang, 'Decolonisation is not a metaphor' (2012) 1(1) Decolonisation: Indigeneity, Education & Society 1, 4-10, 23-30

production acquire a hegemonic status through processes of colonisation.[31] So when I use the term 'settler' to talk about myself, I do not use it comfortably.[32] The settler position today implies a complicity in erecting and maintaining the hegemony of knowledge systems that reinscribe the status quo to wield oppressive power over others.

The second point necessary to emphasise here is that colonialism is a problematic asymmetrical power relationship between the coloniser and the colonised and not something which happens 'out there' in the periphery or colony while the centre or metropole 'here' stays unaffected, secure, and unoppressed.[33] Both the

[31] Corey Snelgrove, Rita Kaur Dhamoon *et al,* 'Unsettling settler colonialism: The discourse and politics of settlers, and solidarity with Indigenous nations' 3(2) Decolonisation: Indigeneity, Education & Society 1, 3, 13-15

[32] I invoke 'hegemony' here in Antonio Gramsci's sense of cultural hegemony, which underpins oppressive power relations and thus by definition cannot be unproblematic or comfortable. Modern cultural studies is in many ways indebted to Gramsci's theory of hegemony. By hegemony, Gramsci meant "*the ways in which the institutions of civil society (education, religion, culture) exercise power by inducing consent rather than through outright coercion. This idea is particularly important for illuminating the ways in which mass-mediated popular culture gets its ideological power: it doesn't force people to believe one thing or another, it merely makes certain ways of thinking and acting as being seem utterly normal and natural.*" See Naomi Mezey, 'Mapping a Cultural Studies of Law' in Austin Sarat & Patricia Ewick (eds.), *The Handbook of Law and Society* (Wiley 2015). *See also*, Naomi Mezey & Mark C. Niles, 'Screening the Law: Ideology and Law in American Popular Culture' (2005) 28 Columbia Journal of Law and Arts 91 for a discussion on the relationship of Western law and hegemony.

[33] The centre/periphery, metropole/colony binary has been widely challenged. Instead, a broader analytic frame that extends beyond the modern State and embraces transnational and global approaches that track the transcontinental criss-crosses of postcolonial and colonial agents, imperial subjects, and citizens, ideas, and objects, has been advocated amongst historians, cultural studies scholars as well as critical law and society scholars. See Ann Laura Stoler and Frederick Cooper, 'Between metropole and colony: Rethinking a research agenda,' in Frederick Cooper and Ann Laura Stoler (eds.) *Tensions of Empire: Colonial Cultures in a Bourgeois World* (University of California Press 1997). *See additionally*, Renisa Mawani (2012), *supra* n. 17, 348; Renisa Mawani, 'Law and migration across the Pacific: narrating the Komagata Maru outside and beyond the nation' in A. Perry, K. Dubinsky, H. Yu (eds.) *Thinking Beyond the Nation* (University of Toronto Press, 2012); Renisa Mawani, 'Spectres of Indigeneity in British Indian migration', 46(2) Law and Society Review 369. *See also*, Tony Ballantyne, 'Mr. Peal's archive: mobility and exchange in histories of empire,' in Antoinette Burton (ed.) *Archive Stories: Facts, Fictions, and the Writing of History* (Duke University Press 2005); Tony Ballantyne, *Between Colonialism and Diaspora: Sikh Cultural Formations in an Imperial World* (Duke University Press 2006); Marilyn Lake & Henry Reynolds, *Drawing the Global Colour Line: White Men's Countries and the International Challenge of Racial*

dominant culture of knowledge-making and the colonised one are implicated in colonialism. Turning to the Other to understand one's culture and systems of knowledge can then offer a drastically different view of One's Self and make visible aspects of oppression and violence that were not visible before. That is why in this book, I turn to Indigenous conceptions of knowledge and data in order to study, review, contextualise, and provincialise modern, Western, and European systems of knowledge.[34]

In this context, unsettling may be understood as a research tactic which tries to undo by chipping away the oppressive hegemony of knowledge and meaning-making systems which operates within myself and my European as well as neocolonial settler communities within and outside the Western world. This strategy of unsettling seeks to puncture holes in the claim of obviousness and common-sensical complacency in the functioning of such knowledge production cultures while simultaneously unmasking the innocence which they don. Given that modern law is one of the leading hegemonic systems of knowledge-making today, I seek to unsettle one of its concepts in this book viz. 'data,' from my distinct positionality as a Westernised immigrant with settler heritage from the neocolonial State of India. In doing this, I try to make amends by unsettling myself and my Western and settler knowledge communities. In unsettling the Western concept of data in modern law, for reasons of precision and conciseness, I limit myself to focusing on the field of data governance. My hope is that such

Equality (CUP 2008); Durba Ghosh & Dane Kennedy (eds.), *Decentering Empire: Britain, India, and the Transcolonial World* (Orient Longman 2006); Madhavi Kale, *Fragments of Empire: Capital, Slavery, and Indentured Labor in the British Caribbean* (University of Pennsylvania Press 1998); Radhika Viyas Mongia, 'Race, Nationality, Mobility: A History of the Passport' (1999) 11(3) Public Culture 527

[34] Kiran Klaus Patel, 'Provincialising European Union: Co-operation and Integration in Europe in a Historical Perspective' (2013) 22(4) Contemporary European History 649

unsettling will show a mirror to the culturally hegemonic Western knowledge system of modern law in the field of data governance, and reveal the oppressive power relationships which are perpetuated through its conceptualisation of 'data.' Through this critique of modern law and data governance, the aspiration is to create some space for us to reflect upon our own complicity as a privileged legal community in the exploitation prevalent in digital Earth today. At the same time, I also hope that this book can open up some space for starting conversations, building relationships, and learning from Indigenous scholars of law and science in order to further unsettle the legal field of data governance by conjuring alternative imaginations of knowledge and data for modern, settler, or Western law.

1.3. Data in Legal Studies of Technology

The study and practice of data as an object of governance spans multiple legal fields today, prominent among them being the oft-overlapping fields of information law, data protection and privacy law, media and telecommunications law and intellectual property. These fields have different trajectories of development as well as different histories in different parts of the world. For the purpose of this book however, I limit my attention to the legal framework of data governance in Europe, particularly in the EU. This choice is made in part because EU law serves as a luscious example of 'progressive' modern (Western) law, and partly because the EU legal framework on data governance is arguably one of the most influential legal models in the world today.[35]

[35] Note for instance, the Adequacy Decisions provided for under the General Data Protection Regulation (GDPR) enable the European Commission to assess whether a non-EU country offers an adequate level of data protection. On the basis of such assessments, personal data transfers from the EU may take place to third countries and international organisations. This has naturally allowed GDPR to influence the data protection structures in other jurisdictions in order to enable personal data transfers from EU. See, European Commission, 'Adequacy

What however do I mean by the term 'data governance'? Since at least the early 1990s when then-President of the European Commission Jacques Delors identified Europe as an 'information society' in a white paper,[36] the idea of an information-based society has persisted in the imagination of the European legal community. Data, its production, its usage, and its flow, forms a core component of such a society. In studying and developing legal frameworks for data governance, the European legal community has accordingly evolved some consensus about what constitutes "*a civilised and mature information society"* in alignment with its conceptualisation of civilisation. Dutch legal scholar Egbert Dommering defines it in terms of three basic principles that apply to the proper legal handling of information or in other words, data governance. They are first, the principle of intellectual property, second, the principle of free flow of data, and third, the principle of protection of personal information or simply, data protection.[37] In this book however, I limit myself to speaking about the last two legal principles when I talk of data governance. This choice was necessary for reasons of length and analytic clarity. That being said, I do from time to time draw upon examples from the experience and history of intellectual property law to drive home my argument about modern law's imagination of data. But throughout this book, whenever I use the term 'data governance' or 'data governance law,' I mean it in the limited sense to specifically refer to the legal

Decisions' <https://ec.europa.eu/info/law/law-topic/data-protection/international-dimension-data-protection/adequacy-decisions_en> accessed 21 March 2021

[36] European Commission, Growth, competitiveness, employment: The challenges and ways forward into the 21st century White Paper (1993) <https://op.europa.eu/s/pcGZ> accessed 21 March 2021. *See also*, European Commission, 'Bangemann report: Europe and the global information society' (1994)<https://cordis.europa.eu/article/id/2730-bangemann-report-europe-and-the-global-information-society> accessed 21 March 2021

[37] Egbert Dommering, 'Data, Information and Communication in 21st century Europe: A Conceptual Framework' in Thomas Kleist, Alexander Roßnagel *et al* (eds.) *Europäisches und nationales Medienrecht im Dialog* (Nomos Verlag 2010) 51-52

fields and principles of free flow of data (including the study and practice of open data), and data protection.

The fields of information, media and telecommunications, and data protection law, which seek to govern data in various ways, do this by defining new conceptual categories to negotiate rights, obligations, and freedoms in the face of new data practices and technology. In this sense, these fields have historically understood data in conjunction with the technologies used for data processing as well as for data transfer and communications.[38] These technologies include database analytics, data labelling and mining as well as traditional computational codes.[39] More recently, the concern in these fields has also shifted to machine-learning algorithms that are trained on such data, and technologies popularly termed as 'AI', which make automated but non-transparent and often unfair and discriminatory decisions largely on the basis of such training.[40] Various tangled configurations of these technologies have resulted in the creation of even more complex data-driven technologies like neural networks, smart technologies, and autonomic and affective computing.[41] While there is nuance and substantial

[38] *See* for instance, *Supra* n. 36

[39] Paul Dourish, 'No SQL: The Shifting Materialities of Database Technology' (2014) 4 Computational Culture 1

[40] A number of terminologies have sprouted to refer to and differentiate between new data-driven technologies in various fields of analysis and application. These terms include AI, machine learning, autonomic computing, ubiquitous computing, smart technologies, automated decision-making, affective computing, pre-emptive algorithms, and regulatory algorithms, to name a few. For a detailed discussion of these terms and their underlying 'algorithmic' structure, see Paul Dourish, 'Algorithms and their others: Algorithmic culture in context' (2016) 2 Big Data & Society 1

[41] *See for instance*, Jenna Burrell, 'How the machine 'thinks': Understanding opacity in machine learning algorithms' (2016) 1 Big Data & Society 1; Hyo Yoon Kang, 'Autonomic computing, genomic data, and human agency: the case for embodiment' in Mireille Hildebrandt & Antoinette Rouvroy (eds.), *The Philosophy of Law Meets the Philosophy of Technology: Autonomic Computing and Transformations of Human Agency* (Routledge 2011); Soujanya Poria, Erik Cambria *et al*, 'A review of affective computing: From unimodal analysis to multimodal fusion' (2017) 37 Information Fusion 98

differences between all these technologies, for the purpose of this book, I refer to them all using the term 'data technology' or 'data technologies.' This is because despite their differences what these technologies do have in common is their reliance upon the availability and generation of data at a large scale or big data. Additionally, the *primary* concern for this study is the more fundamental question of law's imagination of data, the common determinant amidst all these technologies and not its imagination of specific data technologies. Nevertheless, because of the context outlined above, the law's encounter with these data technologies remains relevant in order to map the modern legal imagination of data itself.

Legal scholars studying data governance in Europe have often made a distinction between data and information as well. To do this, data is defined as a building block of information, and information is understood as *syntactically* organised data, which is data organised in accordance with certain rules that are known and understood by those playing the "information game."[42] These distinctions stem from the post-1945 information theory developed in Western society that was widely shaped by the work of Norbert Wiener in the interdisciplinary field of cybernetics, which created a vocabulary for concepts like 'information', 'feedback,' 'pattern' and 'communication' as core to the organisation and control of human society.[43] The great influence of the cybernetics movement is evident not just in the shaping media theory and computing studies [44] but also subsequently in European media, telecommunications, data protection, and

[42] *Supra* n. 37, 52
[43] Orit Halpern, *Beautiful Data: A History of Vision and Reason since 1945* (Duke University Press 2014). *See also,* Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society* (Eyre and Spottiswoode 1950)
[44] Stefanos Geroulanos & Leif Weatherby, 'Cybernetics and the Human Sciences' (2020) 33(1) History of the Human Sciences 3, 5-7

information law that deal with data governance. Importantly, the cybernetics movement has played a significant role in providing a kind of general intellectual, material, and aesthetic substrate or a quasi-philosophy embedded in data technology[45] and in doing so, has produced new political conceptions of the world and new forms of historical consciousness.[46] In many ways, cybernetic narratives thus play an important but understudied role in shaping some of the most fundamental concepts of data governance in use today. Without going into too much detail here, it must however be noted that in recent times the deep pervasiveness of the cybernetic worldview as obvious or common-sensical and even as a basis upon which it is desirable to organise contemporary society has been questioned.[47] The cybernetic worldview is being unsettled. Such unsettling obviously has implications for the conceptualisation of data and information, both within media and information theory and the law on data governance. In this book, I seek to contextualise these developments against a broader history of data in data governance law. Consequently, I do not rely upon the distinction made by European legal scholars between data and information. Rather, I begin my study on broader terms by understanding data as part of the Western knowledge system or cultural archive[48] and therefore simply, as an epistemic aesthetic or form.

[45] Halpern, *supra* n. 43; *Supra* n. 44, 3

[46] Cybernetic discourse typically imagine the world in terms of data, information, and control without adequately attending to the materialities and infrastructures underlying data and computing technologies. For counter-mapping of data and computing technologies which attend to their materiality and infrastructure see, Wendy Hyui Kyong Chun, *Programmed Visions: Software and Memory* (MIT Press 2011)*;* Jack Linchuan Qiu, Manuel Castells *et al, Working Class Network Society: Communication Technology and the Information Have-Less in Urban China* (MIT Press 2009). See also, Friedrich Kittler, *Optische Medien: Berliner Vorlesung 1999* (Merve Verlag 2011)

[47] Chun (2011), *Supra* n. 46; Halpern (2014), *Supra* n. 43; Neda Atanasoski & Kalindi Vora, *Surrogate Humanity: Race, Robots, and the Politics of Technological Futures* (Duke University Press 2019)

[48] Mark Poster, *The Second Media Age* (Polity Press 2013) 78-81

Parallel to the fields of media, telecommunications, data protection, and information law, data and its governance in terms of free flow and protection has also been studied under the larger field of law and technology.[49] The emergence of this field has been traced to as far back as the 19th century.[50] Conceived as a legal response to public anxiety about the appearance of new technologies, the field became defined sometime in the 1960s-70s in the age of Space Race and In-Vitro Fertilisation.[51] In Europe, the period of 1980s also saw risks posed by nuclear technologies and a growing public awareness about the threats of climate change leading to a characterisation of contemporary society as a 'risk society.'[52] In this context, law and technology studies in Europe have also evolved to study and control the risks posed by new technologies. Since the late 1990s and early 2000s, the field has focused on the governance of data, data technologies, and the virtual worlds of cyberspace.[53] In all these interventions, the field has largely shaped itself through the narrative of the development of a new technology as a crisis event in Western history.[54] In this crisis formulation solidified by the idea of a risk society, new technologies were seen as either risky or as revolutionary capacities that created novel problems with which prevailing law was ill-equipped to deal.[55] Building upon such a narrative, law and technology literature typically focuses on recommending regulatory and legislative strategies as well as possible

[49] In this context, the field of law and technology (including that of law and information technology) should be distinguished from the emerging field of 'Legal Informatics' or 'Automated Law' or 'Legal Tech'. For an introduction to the latter, see Daniel M. Katz, Ron Dolin *et al, Legal Informatics* (CUP 2021)
[50] Kieran Tranter, 'The Law and Technology Enterprise: Uncovering the Template to Legal Scholarship on Technology' (2011) 3(1) Law, Innovation, and Technology 31
[51] *Supra* n. 50, 36-54
[52] Ulrich Beck, *Risk Society: Towards a New Modernity* (Sage 1992); Jane Franklin (ed.), *The Politics of Risk Society* (Polity Press 1998); Niklas Luhmann, *Risk: A Sociological Theory* (Routledge 1991)
[53] *Supra* n. 50, 54-60
[54] Naveen Thayyil, 'Claiming the Social: Beyond Law as Technology' (2015) 11(2) Socio-Legal Review 12-13. *See also*, *supra* n. 50
[55] *Ibid.*

new directions in judicial interpretation which can respond to the demands of new technological practices.

The Oxford Handbook on Law, Regulation, and Technology for instance, serves as a good illustration of this narrative. The Handbook uses the framework of 'disruption'; more specifically, of social and legal disruption created by the emergence of new technologies to characterise its contributions in the field of law and technology.[56] This narrative of disruption not only falls in alignment with the formulation of crisis and risk society but also with the aforementioned idea of 'disruptive innovation' popularised by technologists and digital entrepreneurs in the wake of the 21st century.[57] Unlike technologists and digital entrepreneurs however, the legal assessment of such disruption is not optimistic. The idea that law needs to act like technology itself, instrumentally, in order to bridge that disruptive gap remains pervasive. Anxiety and the need to play catch-up with technology to regulate its dangers as well as the need to control in order to harvest the best of ambivalently-characterised technology prevails in such scholarship.[58]

Law and technology scholar Kieran Tranter has analysed this orientation of the scholarship as part of the modern myth of Frankenstein. Textualised in Mary Shelley's well-known 1818 novel Frankenstein, the formal elements of the story concern a scientist who creates a monster and then spurns it, the monster thereafter learns about its own humanity and monstrosity, becoming pathological

[56] Roger Brownsword, Eloise Scotford & Karen Yeung, 'Law, Regulation, and Technology: The Field, Frame, and Focal Questions' in Roger Brownsword, Eloise Scotford *et al* (eds.), *The Oxford Handbook of Law, Regulation, and Technology* (OUP 2017)
[57] *Supra* n. 9
[58] *See* for example, Gregory Mandel, 'History Lessons for a General Theory of Law and Technology' (2007) 8(2) Minnesota Journal of Law, Science & Technology 551; Lyria Bennett-Moses, 'How to Think about Law, Regulation, and Technology: Problems with 'Technology' as a Regulatory Target (2013) 5(1) Law, Innovation and Technology 1

and climaxing with the monster killing the scientist.[59] Tranter argues that the novel merely formalises a bigger narrative about humanity's relationship with science and technology that assumes mythic proportions in its permeation of modern Western psyche and culture.[60] This naturally has implications for the study of law and technology in Europe and the Western world. Tranter accordingly argues that the Frankenstein myth manifests in law and technology scholarship twice over.[61] First, as the narrative that characterises technology as a dangerous monster which needs the control and order of law. And second, as the narrative which instrumentalises law as a regulatory tool or technology. The reduction of law to instrumentalised technology of regulation in this manner renders the former as monstrous within the Frankenstein myth. Taken together, both these narratives make the risk and crisis framework of technology possible, which then allows law to step in as a regulatory 'cure' or as a more familiar technology that domesticates the new. The Frankenstein myth is thus critical to framing new technology as an untamed problem to which law can offer the benign solution of civilisation. This allows legal practice and scholarship in the field to breed a technocratic, solutionist sensibility much like the instrumentalist vision of technology it seeks to civilise.[62]

If the risk and crisis framing of law and technology studies in general stems from its anxiety about new technology's monstrous or untamed nature, the same anxiety travels to its scholarship on data governance and data technologies. In the early and influential work of US-American legal scholar Lawrence Lessig, law and data technologies are often perceived as similar yet at odds or in competition with

[59] Kieran Tranter, 'Nomology, Ontology, and Phenomenology of Law and Technology' (2007) 8(2) Minnesota Journal of Law, Science & Technology 451
[60] *Supra* n. 59, 451-452
[61] *Supra* n. 59, 452-455
[62] For a discussion on the instrumentalist view on technology in the field of philosophy of technology, see Andrew Feenberg, *Critical Theory of Technology* (OUP 1991)

each other. Lessig's argument for understanding computational code (used for processing data or to execute commands) as the *law* of cyberspace[63] presumes a technocratic or instrumentalist view of both law and data technologies. The proposition that computational code regulates conduct on the internet much as legal code does beyond the internet sets up a framework for law (old technology) to compete with computational or data technologies (new technology) in order to regulate human behaviour in digital contexts.[64] In legal practice, the risk and crisis formulation embedded in the Frankenstein myth additionally seems to have a firm hold as the EU develops legislative strategies for a 'human-centric' framework to regulate data technologies in the context of AI[65]— once again framing technology as the dangerous uncivilised monster in need of taming by human laws for beneficial use. This 'human' on the other hand remains a universalised monolithic figure, undefined and abstract.[66]

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[63] Lawrence Lessig, *Code and Other Laws of Cyberspace* (Basic Books 1999)

[64] *Ibid.* While I use Lessig's work here as an illustrative example, the technocratic or instrumentalist view of technology and of law however is neither limited to Lessig's framing of the law and computational code nor is constrained by the narrative of law and technology as competing modes of governance. *See* for instance, *Joel R. Reidenberg,* 'Lex Informatica: The Formulation of Information Policy Rules through Technology' (1997-98) 76 Texas Law Review 553, whereby although law and information technology are proposed to be inter-dependent (and not competitive) systems, a technocratic or instrumentalist understanding of both technology and the law still prevails. This is because the proposition of the interdependence of law and technology is made in such a way so as on the one hand to harness the benefits of technology to fulfill the aims of the law — thus constructing technology as a sphere that can be tamed to reach legal objectives. On the other hand, law itself is instrumentalised as a regulatory tool for new technology. Together in this narrative of law and technology, the Frankenstein myth is thus produced yet again.

[65] See for example, European Commission, 'Communication: Building Trust in Human- Centric Artificial Intelligence' COM(2019) 168, 8 April 2019

[66] Here, Tranter's proposed Frankenstein myth in the context of law and technology may also be understood through postcolonial theory's lens of the Self and the Other, which may be apprehended as dichotomous categories constructed through an act of exclusion of the Other from the Self. Postcolonial theory however understands the Self and the Other to be dependent and co-constitutive with each other. The constitution of the Self and the Other nevertheless embodies relationships of oppressive power, prominently the erasure and/or civilisation of the Other for the benefit of the Self. See in this regard, bell hooks, 'Eating the Other: Desire and Resistance' in *Black Looks: race and representation* (South End Press 1992) and Frantz Fanon, *Black Skins, White Masks* (Grove 1952). Within this framework, data and data technologies may be understood as the Other constructed in exclusion from the human Self in the context of the

In this manner, the understanding of data as an object of legal governance is influenced by two broad narrative strands: One rooted in post-1945 information theory shaped by the cybernetics movement that has import for a range of legal fields like media and telecommunications law, information law and data protection law that deal with data governance often by defining new rights, freedoms, and obligations in the wake of new data practices and technology. The other strand is underpinned by law and technology scholarship. While the cybernetics strand has been influential in bringing the vocabulary of data, information, communication, patterns and processing to data governance, law and technology scholarship has played a crucial role in setting up the crisis and risk framework embedded in the modern myth of Frankenstein for data and data technologies whereby the law is sought as an instrument for domestication of technology. These two narrative strands provide the context for how the law is understood in the field of data governance today.

1.4. A Co-Productive Approach to Law

My approach to the law in this book however is substantially different from the aforementioned understandings of the law in the literatures on data governance, which either through its aim of renegotiating rights, responsibilities, and freedoms in face of new technologies or constraining the risks and dangers of these technologies, dominantly conceives itself as an instrumental tool for the regulation of technological power. For purposes of convenience, I term this understanding as the *instrumentalist approach to law*. In contrast to the instrumentalist approach to law, I propose approaching law as a cultural

Frankenstein myth, and accordingly sought to be civilised for human Self's benefit. In this context, underpinning the abstracted and undefined human is the implicit traditional presumption of the white, male, property-holder.

phenomenon. Here I conceive of culture in the broadest possible sense to include social, political, economic, and scientific practices, forms, relations, and institutions along with the legal.

The understanding of law as culture is rooted in the study of both law and society and the closely-related and sometimes overlapping field of law and humanities.[67] While the field of law and society perhaps emerged in an effort to understand the gap between law on the books and law in action,[68] the field of law and humanities emerges as interdisciplinary qualitative and theoretical research in response to increasing influence of the law and economics movement in law schools and parallel seductions of empirical as well as quantitative studies of law.[69] Nevertheless, both the fields look to approach law as a cultural practice that cannot be fruitfully studied without accounting for the legal and non-legal cultures within which law is rooted.[70] Following the work of Rosemary Coombe, law and culture here need to be understood not as fixed nor even distinct concepts. Rather, they need to be apprehended as historically contingent categories that are co-constitutive.[71] In other words, law is a set of knowledge or meaning-making practices that exists within and is the product of a particular culture, while simultaneously producing cultural practices that make knowledge

[67] Naomi Mezey, 'Mapping a Cultural Studies of Law' in Austin Sarat & Patricia Ewick (eds.), *The Handbook of Law and Society* (Wiley 2015). *See also*, Rosemary Coombe, 'Contingent articulations: A critical cultural studies of law' in Austin Sarat & T.R. Kearns (eds.), *Law in the Domains of Culture* (University of Michigan Press 1998); Clifford Geertz, *Local Knowledge: Further Essays in Interpretive Anthropology* (Basic Books 1983); Naomi Mezey, 'Law as Culture' (2001) 13 Yale Journal of Law and Humanities 35

[68] Susan Silbey, 'After Legal Consciousness' (2005) 1 Annual Review of Law and Social Science 323

[69] Austin Sarat, Matthew Anderson *et al* (eds.), *Law and the Humanities: An Introduction* (CUP 2010) 13; Owen Fiss, 'The Challenge Ahead' (1989) 1 Yale Journal of Law and Humanities <https://digitalcommons.law.yale.edu/yjlh/vol1/iss1/3> accessed 24 April 2021. *See also,* Sally Engel Merry, *The Seductions of Quantification* (University of Chicago Press 2016)

[70] Austin Sarat, 'Traditions and Trajectories in Law and Humanities Scholarship' (1998) 10 Yale Journal of Law and Humanities 401

[71] Coombe (1998), *Supra* n. 67

and exist within and are the product of a particular set of laws.[72] In this formulation, law is not merely a tool or a force that acts upon culture or society as if from the outside in order to regulate it. Rather, law *produces* cultural knowledge and meaning even as said culture constitutes it. Both law and culture are thus co-constitutive or co-productive of each other. Contrasting this understanding of law to the instrumentalist approach, I term it as the *co-productive approach to law.*

In marking this co-productivity, this book draws upon scholarship not just in the fields of law and society and law and humanities, but also from within science and technology studies (STS) of the law. Much like the interest of lawyers in technology, the interest of STS scholars in law has emerged from the encounters of science and technology with law. However, the approach of STS scholars has also been vastly different from the instrumentalist approach to law dominant within the study of data governance[73] and finds closer alignment with law and humanities or other cultural studies of law. Importantly, science studies and STS scholars both understand scientific practices as a part of a larger set of *cultural*

[72] Mezey (2015), *Supra* n. 67

[73] STS scholar Shiela Jasanoff has outlined these differences by describing five narratives which are deployed to order the relationship between law and technology. According to her the ones which legal literatures most often deploy are first, the law lag narrative whereby it is asserted that legal developments often lag behind technological developments and law needs to play catch up to stay relevant. Second, the culture clash narrative which presents science/technology and law as two distinct cultures of knowledge-making- the former concerned with the progress and the latter concerned with process. This inherent difference in cultures is responsible for conflicts between law and technology under this narrative. Third, the crisis narrative which is a reductive version of the culture clash narrative and posits that law and science consistently disrupt each other's processes of knowledge-making, forever leading towards conflict and contradictory outcomes. And fourth, the deference narrative, according to which law acts as a gatekeeper for 'good' science. In other words, it is the function of law to uphold the scientific standards of validity and reliability. *See* Sheila Jasanoff, 'Making Order: Law and Science in Action' in Edward J. Hackett, Olga Amsterdamska *et al* (eds.), *The Handbook of Science and Technology Studies*, 3rd Edition (MIT Press 2007) 768-772

knowledge-making practices.[74] Like law, science and technology is thus seen as being and producing culture in STS and science studies.[75] In this formulation, science or technology is not disparate from culture but a part it. Building on this understanding of science and technology as culture, STS scholar Sheila Jasanoff formulates law as also being in *a co-productive relationship* with science.[76] This formulation understands law much like it does science— as a system of authoritative knowledge production in contemporary culture, which simultaneously constructs the cultural categories of 'social' and 'natural' order.[77]

The co-productive approach to law in the context of STS has allowed scholars to poke holes in the claim that knowledge-making practices in either the sciences or the law lead to the discovery of transcendental truths. For instance, numerous STS studies illustrate how criminal law through its encounter with science produces specialised regimes of knowledge like evidence[78] or subjectivities like the expert witness.[79] These studies underline that as a cultural practice, law does not 'discover' truths about culture, science, and technology but rather in collaboration with cultural and scientific modes of meaning-making, *constructs* these 'truths' or knowledges within its legal grammar. In other words, there is no

[74] The understanding of Science as Culture has been part of long and multiple trajectories of development in feminist Indigenous and postcolonial science studies. *See for instance*, Sarah Franklin, 'Science as Culture, Cultures of Science' (1995) 24 Annual Review of Anthropology 163. *See also,* Emily Martin, *The Woman in the Body: A Cultural Analysis of Reproduction* (Beacon Press 1987)

[75] Simon A. Cole & Alyse Bertenthal, 'Science, Technology, Society, and Law' (2017) 13 Annual Review of Law and Social Science 351

[76] *Supra* n. 73, 770-71

[77] *Supra* n. 73, 772

[78] *Ibid.*

[79] *See for example*, Hyo Yoon Kang, 'Science Inside Law: The Making of a New Patent Class in the International Patent Classification' (2012) 25(4) Science in Context 551; Simon Cole, *Suspect Identities: A History of Fingerprinting and Criminal Identification* (Harvard University Press 2001); Tal Golan, *Laws of Men and Laws of Nature: The History of Scientific Expert Testimony in England and America* (Harvard University Press 2004); Jennifer Mnookin, 'Scripting Expertise: The History of Handwriting Identification Evidence and the Judicial Construction of Expertise' (2001) 87 Virgina Law Review 1723

absolute truth which law (or science for that matter) as a cultural knowledge system, can discover. Rather, truths are made.

This formulation of law stands at odds with the instrumentalist approach to law whereby for instance, data and data technologies are simply construed as the object of legal regulation without questioning the truth of how law itself understands data. This can only be made possible when law is presumed to be a separate and distinct entity that acts *upon* and not *as part of* culture (which includes data and technological practices.) Issues that are then foregrounded include questions of good versus bad law, legality versus illegality, rights, freedoms, risk, and regulation. In such an approach, law's understanding of data as a whole appears obvious, innocent, even quite natural. In any case, law's imagination of data then manifests as merely a minor detail or a self-indulgent query with little consequence for the real world.

By contrast, the co-productive approach to law raises a very different set of questions. In formulating both law and science as cultural practices of knowledge-making and thereby as practices with no absolute claim to the truth, the co-productive approach is able to generate some space for questions about *how* law creates knowledge or cultural concepts as part of its legality, *who* benefits from such knowledges and who does not etc. It is precisely these kinds of issues that I am keen to raise when I pose the question of modern law's imagination of data. By formulating modern law (and thereby data governance law) as a cultural knowledge-making system, issues that are foregrounded concern how legal knowledges about data are co-produced, what kinds of power relations are enabled and are hidden by such knowledge co-production about data, and who is allowed to contest these legal knowledge claims about data and how, and who remains excluded. As this book will illustrate, these questions are not merely of

an academic import but generate significant real-world consequences with which the legal community in general and in the field of data governance in particular must engage.

1.5. Representationalism and the Modern Legal Form

A co-productive approach to law also allows us to examine the power relationships generated by modern law as a cultural production. As a site of cultural knowledge production, law generates asymmetrical and oft-exploitative relationships of power.[80] To study these power relationships in the context of contemporary digital Earth, this book develops the analytical framework of 'representationalism.' In this sense, I use the term representationalism throughout this book to refer to the Western cultural worldview that ontological enquiries or questions about the world-as-it-is are inherently separate or distinct from epistemological enquiries or questions about how we gather knowledge about said world.[81] Broadly, this dichotomy of ontology and epistemology is based upon the understanding of the universe as it truly exists as one thing and the human perception of the universe as another. The idea that there is an objective world 'out there' waiting to be discovered which is a distinct entity from the subjective human perception of the world 'in here' (our minds, our bodies) is what fuels representationalism at a fundamental level. As a foundational

[80] *Supra* n. 73; Renisa Mawani (2012), *supra* n. 17. *See also*, Martha Minow, *Making All the Difference: Inclusion, Exclusion, and American Law* (Cornell University Press 1990). In the context of law and computing, *see* Kavita Philip, Lilly Irani *et al*, 'Postcolonial Computing: A Tactical Survey' (2012) 37(1) Science, Technology & Human Values 3, 11-13

[81] Barbara Deloria, Kristen Foehner & Sam Scinta (eds.), *Spirit & Reason: The Vine Deloria, Jr. Reader* (Fulcrum Publishing 1999); Leroy Little Bear, 'Jagged worldviews colliding' in Marie Battiste, *Reclaiming Indigenous Voice and Vision* (University of British Columbia Press 2000); Brian Martin, 'Methodology is content: Indigenous approaches to research and knowledge' (2017) 49(14) Educational Philosophy and Theory 1392; Shawn Wilson, *Research is Ceremony: Indigenous Research Methods* (Fernwood Publishing 2008)

assumption of Western as well as many non-Western settler cultures, representationalism is so ingrained into our everyday thinking and modes of interacting with the world that the binary separation of ontology and epistemology seems only natural. Accordingly, representationalism manifests in all aspects of our cultural knowledge production, including philosophy, science and technology, political economy, and modern law.

In Western culture, representationalism is so ubiquitous that it is extremely tough to imagine living and being outside of representationalist assumptions.[82] In many ways, representationalism seems the most obvious way of being-understanding the world (even our language defies thought outside of representationalism!)[83] Importantly, representationalism also seems like an innocent way of apprehending the world. Even if we live by representationalist assumptions, what is the harm in it?, one might ask. Through the development of the analytical framework of representationalism in this book, this is exactly the point that I wish to address. Despite its innocent appearance, representationalism actually does have political implications. Representationalism has a role in consolidating oppressive power and invisibilising exploitation in knowledge economies. This book seeks to unpack these claims in the context of today's globalised data

[82] In this regard, representationalism manifests not just in positivist discourse but also as part of many different critical philosophical and sociological traditions including phenemonology, constructivism and radical constructivist approaches like the Actor-Network-Theory as well as in the case of knowledge production in contemporary scientific fields like quantum physics. For a discussion of how representationalism manifests in all these fields, *see* Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Duke University Press 2007)

[83] Indigenous scholarship for instance, which is rooted in a non-representationalist worldview has often illustrated the limitations of expressing Indigenous knowledges in European languages given their cultural incommensurability. *See for example*, Leanne R. Simpson, 'Anticolonial Strategies for the Recovery and Maintenance of Indigenous Knowledge' (2004) 28(3/4) American Indian Quarterly 373; Aaron Mills, *Miinigowiziwin: All That Has Been Given for Living Well Together--One Vision of Anishinaabe Constitutionalism* (2019) PhD Thesis, University of Victoria 4, 222-230 <http://hdl.handle.net/1828/10985> accessed 4 April 2021; James Tully, *Strange Multiplicity: Constitutionalism in an Age of Diversity* (CUP 1995) 11

economy. I argue that the manifestation of representationalism in modern law affects how data governance law conceptualises data. This, in turn, defines and constrains which forms of oppression in digital Earth are recognised by data governance law and which are not.

Because representationalist thinking is so pervasive, it is extremely difficult to grasp at its politics while being immersed in Western forms of knowledge. So, in this book I often turn to Indigenous scholarship and cultures to excavate the politics of representationalism in modern law. It can be helpful to think about X from the perspective of knowledge traditions that are not shaped by X; this exercise can give one a new perspective on X. In the same way, regarding representationalism from the perspective of Indigenous scholarship and knowledge systems can allow for a vocabulary (though far from perfect) to describe the politics of representationalism in modern law. It enables some opening to interrogate troublesome aspects about modern data governance law in particular, which can be difficult to articulate from positionalities like mine. Today I know that it can be described as representationalism.

For this, I am really grateful to the work of Indigenous and decolonial feminist philosophers and scholars who have a long tradition of critiquing the separation of ontology and epistemology in Western thought. I am especially thankful for the work of Ram Dayal Munda, Linda Tuhiwai Smith, Vine Deloria Jr., Val Napoleon, Vanessa Watts, John Borrows, C.F. Black, and Zoe Todd.[84] Their

[84] *See in this context*, Ram Dayal Munda, *Adi-dharam: Religious beliefs of the Adivasis of India* (adivaani 2014); Linda Tuhiwai Smith, *Decolonising Methodologies: Research and Indigenous Peoples* (Zed Books 1999); Vine Deloria Jr., *The Metaphysics of Modern Existence* (Fulcrum Publishing 2012); Val Napoleon & Hadley Friedland, 'An Inside Job: Engaging with Indigenous Legal Traditions through Stories (2016) 61(4) McGill Law Journal 725; Vanessa Watts, 'Indigenous Place-Thought and Agency Amongst Humans and Non-Humans (First Woman and Sky Woman Go on a European World Tour!)' (2013) 2(1) Decolonisation, Indigeneity, Education & Society 21; John Borrows, *Freedom and Indigenous Constitutionalism* (University of Toronto Press 2016); C.F. Black,

crucial interventions, courage, and clarity of thought on Indigenous knowledges, law, and the exploitative separation of ontology and epistemology in Western cultures have helped me immensely to think through my own settler and Western education to grasp at how representationalism shapes contemporary political economies of data.

Although the aforementioned literature does not always directly address data, Western law or the digital political economy, it is rooted in land-based cultures that grasp ways of being (ontology) and ways of knowing (epistemology) not in dichotomous separation but as part of the same coherent whole, even as such thinking remains incommensurable with Western ways of knowing or being.[85] Given this, Indigenous literatures have provided this book the foundational matrix for apprehending representationalism as it functions in data governance law today.

At the same time, this book barely scratches the surface of non-representationalist legal thought in decolonial and Indigenous knowledges. Consequently, I do want emphasise the holistic richness and immense potential that Indigenous cultures and literatures offer for further work geared towards rethinking not just the political economy of data and data governance law, but also for examining the politics of Western law generally from a decolonial perspective. I feel that acknowledging this is especially important given that Indigenous lives and knowledges are faced with historical and ongoing systematic

The Land is the Source of the Law: A Dialogic Encounter with Indigenous Jurisprudence (Routledge 2011); Zoe Todd, 'Rethinking Aesthetics and Ontology Through Indigenous Law' (2015) 125 C-Magazine <https://cmagazine.com/issues/126/rethinking-aesthetics-and-ontology-through-indigenous-law-on-the> accessed 27 April 2021

[85] Leanne Betasamosake Simpson, 'Land as Pedagogy: Nishnaabeg Intelligence and Rebellious Transformation' (2014) 3(3) Decolonization, Indigeneity, Education and Society 1; Mills (2019), *Supra* n. 83; Munda (2014), *Supra* n. 84

appropriation and oppression by white European and non-European settler colonialism.[86] Moreover through the deployment of unaccountable citational practices,[87] Indigenous knowledges are still persistently erased from discussions about the politics of representationalism, of data and data technologies as well as philosophy and legal theory in the Western academy while being characterised as 'trivial,' 'local' or 'incoherent.'[88] This needs to change.

In addition to millennia-old Indigenous knowledges, the last few decades have seen the development of critiques of representationalism in the Western knowledges as well, especially in the fields of philosophy, science studies, and the humanities. Since at least the 1980s, queer and postcolonial feminist scholarship has critiqued the dichotomy of Nature/Culture which emanates from the representationalist binary of ontology and epistemology in Western thought.[89]

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[86] Jodi A. Byrd, *The transit of empire: Indigenous critiques of colonialism* (University of Minnesota Press 2011)

[87] On the politics of citational practices, *see* Sara Ahmed, 'White Men' (2014) <http://feministkilljoys.com/2014/11/04/white-men/> accessed 27 April 2021. *See* also, Sara Ahmed, 'Making Feminist Points' (2013) <http://feministkilljoys.com/2013/09/11/making-feminist-points/> accessed 27 April 2021; Sara Ahmed, *Living a Feminist Life* (Duke University Press 2017) 150

[88] *See* for instance, Nick Couldry & Ulises A. Mejias, 'Data Colonialism: Rethinking Big Data's Relation the Contemporary Subject' (2019) 20(4) Television and New Media 336. Even as they emerge as influential scholars on data colonialism in the Western academy, their work unfortunately fails to seriously engage with Indigenous works on data colonialism and sovereignty. For work on Indigenous data sovereignty see for instance, Tahu Kukutai & John Taylor (eds.), *Indigenous Data Sovereignty: Towards an Agenda* (Australian National University Press 2016); Maggie Walter, Tahu Kukutai *et al* (eds.) *Indigenous Data Sovereignty and Policy* (Routledge 2020). For further discussion on how Indigenous scholarship is erased from the Western academy *see* Aimee Carrillo Rowe & Eve Tuck, *Settler Colonialism and Cultural Studies: Ongoing Settlement, Cultural Production, and Resistance* (2017) 17(1) Cultural Studies ↔ Critical Methodologies 3

[89] See for instance, Lynda Birke, Wendy Faulkner *et al* (eds.), *Alice Through the Microscope: The Power of Science Over Women's Lives* (Virago 1980); Emily Martin (1987), *Supra* n. 74; Sarah Franklin, Celia Lury *et al* (eds.), *Off-Centre: Feminism and Cultural Studies* (Routledge 1991); Sandra Harding, *Sciences from Below: Feminisms, Postcolonialities, and Modernities* (Duke University Press 2008); Evelyn Fox Keller, 'Feminism and Science' (1982) 7(3) Feminist Theory 589; Donna Haraway, 'Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective' (1988) 14(3) Feminist Studies 575; Ruth Hubbard, *The Politics of Women's Biology* (Rutgers University Press 1997); Sara Ahmed, 'Open Forum Imaginary Prohibitions: Some Preliminary Remarks on the

Here, the discerning Western reader may encounter more familiar names in the work of Carolyn Merchant, Donna Haraway, Sarah Franklin, Judith Butler, Sara Ahmed and Jasbir K. Puar.[90] The pervasiveness of dichotomy of Nature/Culture, much like the separation of matter/semiotics, mind/body, human/non-human, and ontology/epistemology has been consolidated in the debates between essentialist and social constructivist camps in Western academy over the last century.[91] Responding to both these camps, feminist scholars have characterised their own work beyond these dichotomies and sought to offer a third avenue away from its modalities of debate. So, for instance, Donna Haraway has questioned the sharp dividing line between Nature and Culture in Western theory and instead proposed understanding it as a whole through a politically-grounded category of the 'material-semiotic.'[92] Judith Butler's work has centred the body as a site of simultaneous material and cultural production using an approach that is

Founding Gestures of the 'New Materialism'' (2008) 15(1) European Journal of Women's Studies 23

[90] Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (Harper 1980); Donna Haraway, *The Haraway Reader* (Routledge 2004); Sarah Franklin, Celia Lury & Jackie Stacey, *Global Nature, Global Culture* (Sage 2000); Judith Butler, *Bodies That Matter: On the Discursive Limits of Sex* (Routledge 1996); Sara Ahmed, *Differences That Matter: Feminist Theory and Postmodernism* (CUP 1998); Jasbir K. Puar, *The Right to Maim: Debility, Capacity, Disability* (Duke University Press 2017)

[91] In this context, essentialist camps in social theory are exemplified by British empricism and the positivist work following the legacy of the Vienna Circle, both of which believe in the existence of value-free facts. By contrast, constructivism may be understood to be embodied within critical social theory and postmodern deconstructionism and does not believe in the clean separation of values and facts. *See* Penny Powers, 'The Philosophical Foundations of Foucaultian Discourse Analysis' (2007) 1(2) Critical approaches to discourse analysis across disciplines 18. The work of radical deconstructionist scholar Bruno Latour in the development of Actor-Network-Theory (ANT), which fascinates many critical legal theorists of technology, is thus an example of the constructivist camp. *See* Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Clarendon 2005). However, both essentialist and constructivist camps have been critiqued by feminist theorists. Additionally, ANT has in particular has been critiqued by feminist science studies scholars for erasing the dichotomies of Nature/Culture only to draw them anew in a way that benefits masculine and Western dominance. For feminist critiques of ANT, *see* Harding (2008), *Supra* n. 90 23-48; Donna Haraway, 'The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others' in Lawrence Grossberg, Carry Nelson *et al* (eds.), *Cultural Studies* (Routledge 1992)

[92] Haraway (2004), *Supra* n. 90, 68, 200-207

neither essentialist nor constructivist.[93] Jasbir K. Puar has masterfully illustrated how the essentialised framing of matter (ontology) and language (epistemology) and distinct and separate enables the construction of racialised and abled hierarchies of power and subjectivity, even while engaging indigenous movements.[94] The work of postcolonial feminists in this regard especially has been informed by anti-racist and queer politics, including the experience of racialised subjects around the world.

Given these contexts, this book seeks to develop the analytical framework of representationalism while being informed by both these bodies of Indigenous and queerfeminist literatures. So as to operationalise the representationalism analytic for studying modern Western law, I additionally draw upon Frankfurt school of critical legal theory in addition to these literatures. Specifically, I use the work of German critical theorist Christoph Menke on the politics of the modern legal form, particularly what he terms as Western law's Selbstreflektion or 'self-reflection."[95] Using this political understanding of the modern Western legal form or aesthetic, this book maps the role that data governance law plays in instating representationalism in digital Earth and how law in turn is itself shaped by it. The synthesis of Indigenous and feminist critiques of representationalism with critical legal theory to study the modern legal form of data thus forms the core contribution of this book towards the theory of law. In this, *my central contention is that modern law produced by Western culture is constituted through a representationalist legal form or aesthetic. Additionally, that this representationalist legal form or aesthetic is not innocent but exploitative and shapes power relationships in society in problematic ways*. While I specifically examine the case of EU data governance law

[93] Irene Costera Meijer and Baukje Prins, 'How Bodies Come to Matter: An Interview with Judith Butler' (1998) 23(2) Signs 275, 276-77, 286
[94] Puar (2017), *Supra* n. 90, 25-27
[95] Christoph Menke, *Kritik der Rechte* (Suhrkampf 2015) 12

to unpack these claims, I believe that the characterisation of the legal form as representationalist could also be extended to other jurisdictions and fields of modern Western law.

I have provided the context for my understanding of representationalism so far, but what is my context for so-called 'legal form' or 'aesthetic' above? In critical studies of law as culture, modern law can easily be reduced to culture. By which I mean that the politics of modern law may be analysed solely through the politics of the larger culture including the social, political, economic, and scientific institutions and practices that shape the law and vice-versa. Here, the focus is largely on legal institutions and/or the *content* of legal norms. The power relationships operationalised by law are then framed in terms of how the prescriptions of legal norms and legal institutions shape and are shaped or co-produced with the broader cultural politics. Law's normative processes are rightly put into question here, but the way legal normativity is approached is largely through the analysis of how law's institutional processes and/or substantive normativity is the political product of gendered, racialised, casteised, abled, white, heteronormative, bourgeois, settler, patriarchal cultures and/or in turn shape cultures to be so. Socio-legal studies, law and society, and critical legal studies are all fields which exemplify these tendencies. Such analyses indeed give us valuable understanding of modern law's power in Western culture (including modern science and political economy), the experience of living under the violence of law, insights into how law may be wielded by social movements to create change.

While these institutional and normative content-focused approaches to studying the politics of modern law are useful in many ways, I would like to distinguish them from my co-productive approach to law in this book. While the present study of law's co-production of data is still very much rooted in understanding

law as culture, my focus in this is not so much on the institutional processes and the content of normative prescriptions made about data by the law, but rather the legal *form* of which data is conceived by modern law.[96] This is the form characteristic of modern law which through Selbstreflektion establishes a difference between 'law' and 'non-law' within the law. As Christoph Menke's work has illustrated, compared to legal authority before in Western history, modern Western law has a peculiar aesthetic or form: It establishes its rule by creating a clear boundary between the legal and the non-legal, a boundary which appears natural or given. So, when I talk about the legal form or aesthetic in this book, it is this fundamental boundary between law and non-law that I seek to bring to attention. This boundary is also the form that distinguishes modern law as culture from other practices of Western culture that are not necessarily dependent upon the *form*al distinction between the legal and the non-legal. But to be recognised as law, modern Western law as culture necessarily needs to distinguish itself from that which is not law or 'non-law.'

Science studies and STS scholars have problematised this process of delimitation of a field of knowledge and the modalities in which it creates, reinforces, contests or critiques knowledge formation as its 'boundary work.'[97] Within the legal community however, *form*al boundary construction between the legal and the non-legal remains largely unproblematised and is so entrenched that it is barely

[96] In invoking the legal form or aesthetic however, I do not intend to make a sharp or inherent distinction between content and form nor like Menke presume that a "true" critique of law can only occur via the critique of its genealogy or legal form. See Menke (2015), *Supra* n. 95, 11 "*Die wahre, genealogische Kritik entdeckt einen Widerspruch in dem modernen Umbruch des Rechts: Er begründet und bestreitet das burgerliche Recht. Die wahre Kritik, die genealogisch verfährt, entwickelt aus dem Grund das Bestehenden einen radikalen Einspruch gegen das Bestehende.*"

[97] *Supra* n. 73. *See* also, Eva-Maria Svensson, 'Boundary-work in legal scholarship' in Åsa Gunnarson & Eva-Maria Svensson (eds.), *Exploiting the Limits of Law: Swedish Feminism and the Challenge to Pessimism* (Routledge 2007)

even remarked upon.[98] Within the doctrinal legal community that is still dominant in its influence upon legal practice, it is widely understood that while the content of legal norms can be contested and widely changes across various Western and non-Western legal cultures and that the institutional processes of law may similarly vary, the form or aesthetic of law— its separation of law from non-law— is what makes law, law and specifically, modern Western law.[99] Modern sources of Western law thus necessarily mould themselves within the modern legal form in order to be understood as law.[100] Importantly here, as Menke's work shows, both the categories of law and non-law constitute essential components of the modern legal form. The category of non-law is this sense must not be understood as something outside of the law but rather, constituted by the law.[101]

As will be seen, taken in the context of data governance, the legal form's construction of both law and non-law results in the understanding of data as both a legal object and a non-legal entity. In this dominant understanding, data is understood to exist prior to law as 'non-law' and is sought to be governed by constituting it as a factual object of 'law' around which questions of legal normativity may be posed and contested. Data thus exists at the boundary of law and non-law and it is this site I am interested in examining in this book. I believe such an examination can offer a deeper understanding into how modern law as

[98] This entrenchment is reflected in the lack of reflection of the boundary between facts and norms in general legal education and practice. *See*, Sanne Taekema, Bart van Klink *et al* (eds.), *Facts and Norms in Law: Interdisciplinary Reflections on Legal Method* (Edward Elgar 2016) 4

[99] An exception to such a view however, is provided by literatures on legal pluralism and the rule of law. See for instance, Celine Tan, 'Navigating new landscapes: socio-legal mapping of plurality and power in international economic law' in Amanda Perry-Kessaris, *Socio-Legal Approaches to International Economic Law* (Taylor & Francis 2012)

[100] *See* for example, H.L.A. Hart, *The Concept of Law* 3rd edition (Clarendon 2012); Hans Kelsen (William Ebenstein, trans.), *Pure Theory of Law* (Augustus M. Kelly 1969)

[101] *Supra* n. 95. This is to be understood much in the same way the boundary work done by a field of study X whereby it delimits itself by defining what is not X, is done by the field X itself.

part of the Western cultural archive co-produces data with other Western cultural practices like science and economy.

In undertaking this examination, *my central contention is that the boundary between 'non-law' and 'law' drawn by data governance law in its conceptualisation of data is construed through a representationalist worldview that fractures data along ontological and epistemological lines*. This argument is significant insofar as it opens up the possibility for examining data governance law's boundary between the legal and the non-legal aspects of data as neither natural nor innocent. This implies that the boundary between questions about data deemed relevant for data governance law and others which are deemed irrelevant is not a given or obvious boundary; but is rather constructed. Additionally, the particular construction of such boundaries is not innocent but has deep political ramifications. Menke's work on the modern legal form offers insight into understanding how the legal demarcation of law and non-law is never neutral but creates unequal relationships of power. Read in conjunction with Indigenous and feminist work critiquing the ontology/epistemology dichotomy, this work provides a powerful opening for understanding the law's role in contributing to power relations in our digital Earth. These strands of analysis are brought together to expose the politics of data governance's legal form. In doing this, my ultimate goal is to use the analytical framework of representationalism to map how the law's construction of data within the modern legal form shapes power relations in our digital Earth.

1.6. The Human and the Posthuman in Data Governance

Mapping law's construction of data through the analytical framework of representationalism reveals that the separation of ontological and epistemological claims manifests in not just what data governance law's form

presents as 'legal' aspects but also those which it presents as 'non-legal' aspects of data. In other words, even as data exists at the boundary of the legal and the non-legal, representationalism is imbued in both its legal and non-legal construction. To unpack this claim, I contend that *as part of the non-legal, representationalism manifests in the construction of data as a resource within the ontology/epistemology dichotomy. Whereas as part of the legal, the same representationalism manifests in the construction of data as a thing within the person/thing dichotomy.* I further argue that together, these representationalist non-legal and legal manifestations of data constitute the *modern legal form or aesthetic* of data governance.

The person/thing dichotomy has been central to Western law for a long time.[102] As will be seen, this dichotomy depends on the centrality of an active agent (legal subject or person) that has the capacity to act upon a passive entity (legal object or thing) in order to change it. The active agent in this narrative is often human or a legal entity formed of humans,[103] whereas the passive entity is often of non-human character. Power relationships constituted through the legal form thus involve both human and non-human participants, even though the former are privileged through the recognition of their agency. While this privileged arrangement of person/thing under various configurations has been the Western legal consensus in the secular sphere for centuries, it nevertheless presents a rather anthropocentric view of the world where only human and human-composed entities are deemed to possess the capacity for agency and independent action. Given this, in recent times the question of who may be included in the category of legal subject or be granted legal personhood has been

[102] Alain Pottage, 'Introduction: The Fabrication of Persons and Things' in Alain Pottage & Martha Mundy (eds.), *Law, Anthropology, and the Constitution of the Social: Making Persons and Things* (CUP 2004) 3

[103] Apart from humans, this legal person could be constituted by legal fictions as in the case of corporations, co-operatives, international organisations or States, all composed of humans.

fruitfully opened up by legal scholars in several diverse areas of law.[104] This development has been effected primarily by the work of Indigenous peoples, activists, and scholars who have postulated concepts and practices concerning sentient land and nature to resist against the violence of Western law's anthropocentrism for centuries now.[105] In this context, Indigenous scholarship has also widely theorised more-than-human agencies in the context of human life as embedded in an Earth-place, along with the political significance of such unhuman agencies.[106]

Following this, the last two decades or so have seen the emergence of work within Western philosophy and humanities under various umbrella terms like 'new

[104] *See* for instance in the context of human rights, Upendra Baxi, *Human rights in a Posthuman World* (OUP 2009); in the context of environmental law, Gwendolyn J. Gordon, 'Environmental Personhood' (2018) 43(1) Columbia Journal of Environmental Law 49, 52; in the context of law and biotechnology, Linda MacDonald Glenn, 'Biotechnology at the Margins of Personhood: An Evolving Legal Paradigm,' (2003) 13 Journal of Evolution & Technology; in the context of law and computation *see*, Gunther Teubner, 'Digital Personhood?: The Status of Autonomous Software Agents in Private Law' (2018) Ancilla Luris; Lawrence B. Solum, Legal Personhood for Artificial Intelligences (1992) 70 North Carolina Law Review 123; Eberhard Zehendner, 'The Electronic Agent: A Legal Personality under German Law?' (2003) Proceedings of the Law and Electronic Agents Workshop 97; Emily M. Weitzenboeck, ' Electronic Agents and the Formation of Contracts' (2001) 9 International Journal of Law and Information Technology 204; Tom Allen and Robin Widdison, 'Can Computers Make Contracts?' 9(1) Harvard Journal of Law and Technology 26; Sandra Braman, 'Posthuman Law: Information Policy and the Machinic World' (2002) 7(12) First Monday <https://firstmonday.org/ojs/index.php/fm/article/view/1011/932> accessed 27 April 2021

[105] Ailton Krenak (trans. Anthony Doyle), *Ideas to Postpone the End of the World* (House of Anansi Press 2020); Nick Estes, *Our History is the Future: Standing Rock versus The Dakota Access Pipeline, and the long tradition of Indigenous resistance* (Verso 2019); Little Bear (2000), *Supra* n. 81; Marisol de la Cadena, *Earth Beings: Ecologies of Practices Across Andean Worlds* (Duke University Press 2015)

[106] Glen Sean Coulthard, *Red Skins, White Masks: Rejecting the Colonial Politics of Recognition* (University of Minnesota Press 2014); Glenn Coulthard & Leanne Betasamosake Simpson, 'Grounded Normativity/Place-Based Solidarity' (2016) 68(2) American Quarterly 249; Martin (2017), *Supra* n. 81; Leanne Betasamosake Simpson, *As we have always done: Indigenous freedom through radical resistance* (University of Minnesota Press 2017); Zoe Todd, 'Fish pluralities: Human-animal relations and sites of engagement in Paulatuuq, Arctic Canada' 38 Etudes/Inuit/Studies 217; Vine Deloria, Jr., *Custer died for your sins: An Indian manifesto* (University of Oklahoma Press 1988); Vine Deloria, Jr., *For this land: Writings on religion in America* (Routledge 1999); Munda (2014), *Supra* n. 84; Watts (2013), *Supra* n. 84

materialism',[107] 'feminist technoscience studies'[108], 'object-oriented ontology'[109], 'actor-network-theory' (ANT)[110], the 'ontological turn'[111], 'new empiricism'[112] and 'posthumanism',[113] which together have also bolstered interest in the decentring of the 'human' in Western scholarship, particularly in the fields of philosophy, humanities, and increasingly the social sciences. While there are multiple genealogies and notable points of difference as well as disagreements between all these various literatures, what they all do have in common is an interest in moving away from anthropocentricism in order to account for the more-than-human; or so-called 'unhuman' or 'posthuman' agencies. At the same time however, these literatures have been widely critiqued within and beyond Indigenous and postcolonial feminist scholarship.[114] Such critique points out that new materialist, posthumanist, and ANT literatures reframe more-than-human agencies in abstract and apolitical terms that benefits the status quo of white and Western dominance even as these literatures erase and appropriate the work of

[107] Rick Dolphijn & Iris van der Tuin (eds.), *New Materialism: Interviews & Cartographies* (Open Humanities Press 2013)
[108] Judy Wajcman, 'Feminist Theories of Technology' (2010) 34(1) Cambridge Journal of Economics 143
[109] Levi R. Bryant, *The Democracy of Objects* (Open Humanities Press 2011)
[110]Latour (2005), *Supra* n. 91
[111] Elizabeth A. St. Pierre, Alecia Y. Jackson *et al*, 'New Empiricisms and New Materialisms: Conditions for New Inquiry' (2016) 16(2) Cultural Studies ↔ Critical Methodologies 99
[112] Patricia T. Clough, 'The new empiricism: Affect and sociological method' (2009) 12 European Journal of Social Theory 43
[113] Rosi Braidotti, *The Posthuman* (Polity Press 2013); Katherine N. Hayles, *How we became posthuman: Virtual bodies in cybernetics, literature, and informatics* (University of Chicago Press 2008)
[114] *See* for instance, Zoe Todd, 'An indigenous feminist's take on the ontological turn: "Ontology" is just another word for colonialism' (2016) 29 Journal of Historical Sociology 4; Sara Ahmed, Living a Feminist Life (Duke University Press, 2017); Eve Tuck, 'A turn to where we already were? Settler inquiry, indigenous philosophy, and the ontological turn' (2014) Paper presented to the Annual Meeting of the American Educational Research Association, Philadelphia; Alexander G. Weheliye, *Habeas Viscus: Racialising Assemblages, Biopolitics, and Black Feminist Theories of the Human* (Duke University Press 2014); Jerry Lee Rosiek, Jimmy Snyder & Scott L. Pratt, 'The New Materialisms & Indigenous Theories of Non-Human Agency: Making the Case for Respectful Anti-Colonial Engagement'(2020) 26(3-4) Qualitative Inquiry 331; Ahmed (2008) *Supra* n. 89; Deloria *et al* (1999) *Supra* n. 81; Puar (2017), *Supra* n. 90, 25-27

Indigenous peoples, feminists, and scholars of colour on sentient land and more-than-human agencies.[115]

To a limited extent, Western legal scholarship has nevertheless and perhaps not unproblematically drawn upon both Indigenous knowledges, struggles, and scholarship as well as new materialist, posthumanist, ANT *etcetera* literatures. Drawing upon the latter category, scholars studying Western law have analysed how said posthuman agencies in the context of technology and environment interact with legal knowledges and human subjectivities. So for instance, using new materialist and posthumanities literatures, it has been proposed that environmental law be critically reconceptualised in order to account for not just human but also posthuman structures and agents.[116] One also observes the emergence of the so-called 'posthumanist turn'[117] in international law whereby automated weapons systems have been analysed using feminist posthuman theory in order to understand the relationship between human and machine in terms of automation and autonomy[118] as well as to problematise and deconstruct

[115] In the context of Indigenous cosmologies in South America, "earth beings" refer to entities that have always existed and interacted with humans on the Earth. In Indigenous cosmologies, these relationships need to be respected both by human and nonhuman others, including mountains, animals, plants and other smaller creatures. *See* de la Cadena (2015), *Supra* n. 105

[116] Andreas Philippopoulos-Mihalopoulos, 'Critical environmental law as method in the Anthropocene' in Louis Kotzé (ed.), *Environmental Law and Governance for the Anthropocene* (Hart 2017). *See* also, Anna Grear, 'Human Rights and New Horizons? Thoughts toward a New Juridical Ontology' (2018) 43(1) Science, Technology & Human Values 129

[117] Matilda Arvidsson, 'The swarm that we already are: artificially intelligent (AI) swarming 'insect drones', targeting and international humanitarian law in a posthuman ecology' (2020) 11(1) Journal of Human Rights and the Environment 114; See also in regard to the posthuman turn in international humanitarian law, forthcoming work by Jessie Hohmann, Daniela Gandorfer, Christine Schwobel-Patel and Kojo Koram, Tweet by Dr. Jessie Hohmann (16 March 2021) <https://twitter.com/DrJessieHohmann/status/1371952938420031496> accessed 27 May 2021

[118] Emily Jones, A Posthuman-Xenofeminist Analysis of the Discourse on Autonomous Weapons Systems and Other Killing Machines (2018) 44(1) Australian Feminist Law Journal 93

the human in humanitarian law.[119] In the study of property and digital objects as well, law and posthuman theory have been brought together.[120] On the other hand, accounting for Indigenous and feminist work critiquing Western knowledges, the legal dichotomy of person/thing at the intersection of property and environment has additionally been interrogated. [121] Indigenous legal scholarship on the other hand has also invoked Indigenous knowledges about posthuman earth beings and sentient land have also been invoked to critique Western liberal constitutionalism and to illustrate its lack of commensurability with Indigenous (Anishinaabe) legal systems.[122]

It is against this larger backdrop that questions about the agency of data technologies and whether they have or should have a claim to legal personhood should be understood. Recent applications of big data and development of new data technologies, particularly in the computer science fields of machine learning and AI have raised questions about technological agency.[123] Related to this issue,

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[119] Matilda Arvidsson, 'Targeting, Gender, and International *Posthuman*itarian Law and Practice: Framing the Question of the Human in International Humanitarian Law' (2018) 44(1) Australian Feminist Law Journal 9

[120] Jannice Käll, *Converging Human and Digital Bodies. Posthumanism, Property, Law.* (2017) PhD Thesis, Gothenburg University <http://hdl.handle.net/2077/52295> accessed 15 September 2021

[121] *See* for instance, Nicole Graham, *Lawscape: Property, Environment, Law* (Routledge 2011); Hannah White, Indigenous Peoples, the International Trend Towards Legal Personhood for Nature, and the United States (2018) 43(1) American Indian Law Review 129; Kathleen Birrell & Daniel Matthews, 'Laws for the Anthropocene: Orientations, Encounters, Imaginaries' (2020) 31 Law & Critique 1; Kathleen Birrell & Daniel Matthews 'Re-Storying Laws for the Anthropocene: Rights, Obligations and an Ethics of Encounter' (2020) 31 Law & Critique 18; Kathleen Birrell, Lee Godden & Maureen Tehan, 'Climate change and REDD+: property as a prism for conceiving Indigenous peoples' engagement' (2012) 3 (2)Journal of Human Rights and the Environment 196

[122] Mills (2019), *Supra* n. 83. *See* also, Tully (1995), *Supra* n. 83; Borrows (2016), *Supra* n. 84; Val Napoleon, 'Thinking about Indigenous Legal Orders' in Colleen Shepard & Kirsten Anker (eds.), *Dialogues on Human Rights and Legal Pluralism* (Springer 2012)

[123] Teubner (2018), *Supra* n. 104; Solum (1992), *Supra* n. 104; Jiahong Chen & Paul Burgess, 'The boundaries of legal personhood: how spontaneous intelligence can problematise differences between humans, artificial intelligence, companies and animals' (2019) 27 Artificial Intelligence and Law 73; Bartosz Brozek & Marek Jakubiec, 'On the legal responsibility of autonomous

we see emerging work concerning the recognition and theorisation of the agency of and knowledge production by new data technologies and relatedly, their relationship to human agency.[124] The idea that there exist more-than-human or posthuman agencies in the context of new data technologies has been proposed and tends to challenge the old consensus about who possesses the capacity for agency or independent action within Western law's person/thing dichotomy.

In Europe for instance, such a challenge is posed by legal philosopher Mireille Hildebrandt, whose work has been influential in the legal community that engages with data governance and the governance of data technologies. Even as she distinguishes human agency from the agency of data technologies (in her terminology. 'smart technologies'), Hildebrandt has also proposed that data technologies do have agency which needs to be recognised by modern Western law.[125] Drawing upon work in robotics and systems theory, Hildebrandt conceptualises such agency of data technologies as the ability to perceive an environment in terms of actionability, along with the ability to act on the world as well as the ability to reconfigure their own system to achieve set goals through the use of continuous feedback loops.[126] She terms such agency specifically as 'data-driven' agency.[127] For Hildebrandt, this understanding of posthuman

machines' (2017) 25 Artificial Intelligence and the Law 293; Rafael Dean Brown, 'Property ownership and the legal personhood of artificial intelligence' (2020) 30(2) Information & Communications Technology Law 208; Johanna J. Bryson, Mihailis E. Diamantis *et al*, 'Of, for, and by the people: the legal lacuna of synthetic persons' (2017) 25 Artificial Intelligence and the Law 273

[124] *See* for instance, Mireille Hildebrandt & Antoinette Rouvroy (eds.), *Law, Human Agency, and Autonomic Computing: The Philosophy of Law Meets the Philosophy of Technology* (Routledge 2011)

[125] Mireille Hildebrandt, 'The Artificial Intelligence of European Union Law' (2020) 21(1) German Law Journal 74, 76

[126] *Ibid.*

[127] Mireille Hildebrandt, *Smart Technologies and the End(s) of Law: Novel Entanglements of Law and Technology* (Edward Elgar 2016) 30. In a later article, Hildebrandt also identifies 'code-driven agency' in addition to 'data-driven agency' as part of more-than-human machinic agency while clearly distinguishing it from human agency, "*Machines capable of automated inferences (AI) have a specific type of agency that can best be defined as data- and code-driven. They are data-driven since they can only perceive their environment in the form of data. Human beings perceive color* (sic)*, sound, contours, smells, tastes,*

agency in the context of data technologies highlights the relational nature of agency and recognises the ability of new data technologies to perceive their environments and take action. But at the same time, data-driven agency as conceptualised by her does not presume nor imply that posthuman agents (both in the non-human and non-organic sense) have intentions, an inner life, or are conscious, and thus are distinct from human agents who do possess these capabilities.[128] A sense of superiority of human agency is thus still maintained.

Despite these differences between human and posthuman agencies, Hildebrandt finds it nevertheless important that law recognise the data-driven agency of data technologies. This, in order to anticipate and respond to the use of these posthuman data-driven agencies to predict and pre-empt human behaviour in ways that may harm humans.[129] In Hildebrandt's account, data-driven agency threatens human agency as well as the modern rule of law, both of which are desirable notions. As a result, data-driven agency needs to be accordingly regulated. Similarly, drawing upon the work of Michel Foucault, legal philosopher Antoinette Rouvroy has outlined how new data technologies like data-mining and algorithmic profiling systems create an unprecedented regime of power and

touch, while our perception is always already mediated by language and interpretation. AI machines can only perceive any of this as data. This implies an act of translation or an environment that consists of data, for example, an online environment, virtual reality, or an IoT environment. AI machines are code-driven because data does not speak for itself. To make inferences these machines require code, for instance based on machine learning research designs that seek to compress big data into a mathematical function, the so-called target function, that defines the data in view of a specific machine-readable task. This, in turn, requires developing a so-called hypothesis space that consists of potentially relevant mathematical functions. These functions serve as hypotheses for the so-called target function that supposedly underlies regularities in the outer, the inner, or the shared world." See Hildebrandt (2020), *Supra* n. 125, 77

[128] Hildebrandt (2020), *Supra* n. 125

[129] *Ibid.,* Hildebrandt (2016), *Supra* n. 127

knowledge that she terms 'algorithmic governmentality.'[130] Without commenting directly on the posthuman agency of such data technologies, Rouvroy's work sheds light on how through processes of prediction and pre-emption, algorithmic governmentality undermines human agency and due process of law by limiting contingency itself, which forecloses the potentiality for human self-reflection, intentionality, and subjectivation processes.[131]

In the context of data governance, the aforementioned work problematising posthuman agencies and knowledges is indeed very important especially in a time where said data technologies are ubiquitous and are known to cause harm to marginalised populations.[132] Given this, my use of the analytical framework of representationalism to map the legal form of data in this book also seeks to bring the political entanglements of posthuman and human agencies to light.

The manner in which this book problematises posthuman and human agencies in this book is, however, distinct from the approaches in data governance and computational law literatures outlined above. These differences are significant and may be consolidated under the following two points: First, that while the aforementioned work seeks to examine the impact on human agency and/or theorise the development of posthuman agency at the level of data technologies, my work takes a step back and seeks to understand the interplay of human and more-than-human agencies at the level of data itself. Data technologies including AI, machine learning, smart technologies, autonomic and ubiquitous computing cannot function without the production of large amounts of data. In order to

[130] Antoinette Rouvroy, 'The end(s) of critique: data-behaviourism v. Due-process' in Mireille Hildebrandt & Katja de Vries (eds.), *Privacy, Due Process, and the Computational Turn: The Philosophy of Law Meets the Philosophy of Technology* (Routledge 2013)
[131] *Supra* n. 130, 2
[132] *Supra* n. 10

respond to injustices experienced in digital Earth today, one certainly needs to account for the politics of data technologies. But in doing this, one cannot simply ignore the politics of data since it forms the primary basis for these technologies. Accordingly, this book focuses on the politics of data in an attempt to grasp the politics of data technologies at a more fundamental level. In this context, mapping Western law's co-production of 'data' with modern science and economy in the modern legal form reveals relationships of power that involve both human and more-than-human participants and agencies.

A second reason to focus this study on the politics of data concerns linking discussions on the politics of human and posthuman agencies and subjectivity to discourses about exploitation in the digital political economy. We see a tendency in well-intentioned legal literatures on data governance and computation today to frame questions of AI, algorithmic power and knowledges, fundamental/human rights, rule of law, and human agency and identity in a way that presents them as distinct and separate fields of enquiry from that of questions about law and the political economy.[133] While such delinking is often justified on grounds of research interests and delimiting a topic of analysis, it simultaneously also has political implications insofar as it entrenches the tacit assumption that the instances of exploitation we see in the political economy of digital Earth today have little to do with how we think about human and posthuman agencies or processes of algorithmic governmentality or subjectivation.[134] With its focus on the politics of data rather than that of data

[133] *See* for instance, Hildebrandt (2016), *Supra* n. 127, 14-15

[134] In this context, it has been pointed out that the framing of unhuman agencies in many new Western philosophical literatures is in general is delinked from their socio-economic and political implications and/or treated as apolitical or neutral. This move reinstates uncritical categories of subjectivity that center the experience of whiteness and fail to account for the lived experiences of marginalised and oppressed populations in the neocolonial project of global racial capitalism. See for example, *supra* n. 114. Such delinking and depoliticisation of unhuman agencies can also perhaps be attributed to the rise of the Anthropocene discourse. See, Kathryn Yusoff, *A Billion*

technologies, the present study seeks to remedy this common but false assumption. Using the representationalism analytic to map the co-production of data within the modern legal form of person/thing enables us to articulate the connection between the politics of human and posthuman agency on the one hand and issues of exploitation and injustice in big data's political economy on the other. In other words, such mapping reveals that how we discuss the politics of law, human, and the posthuman in the wake of new data technologies is inherently linked to how far we are able to grasp and address the exploitative power relationships that sustain the political economy of data today.

1.7. Human and Unhuman Exploitation in Global Value Chains of Data

Mapping data through the analytic of representationalism reveals that the legal articulation of data in the person/thing divide is dependent on the articulation of data as a knowledge resource within the non-law of the legal form. In this sense, data is constituted primarily as an epistemological artefact within the legal form even as its ontological origins are erased. Furthermore, as part of non-legal knowledge, this understanding of data as a knowledge resource is naturalised or appears to be given. Based on this foundational understanding of data as a resource, data governance law builds legal categories of data as 'personal' and 'non-personal.'[135] Personal and non-personal data are legal objects that are sought to be governed under very different sets of legal norms within data governance. Underlying these vastly different legal categories of data however is something

Black Anthropocenes Or None (University of Minnesota Press 2018); Axelle Karera, 'Blackness and the Pitfalls of Anthropocene Ethics' (2019) 7(1) Critical Philosophy of Race, Vol. 7(1) 32

[135] See for instance, European Commission, Proposal for Regulation on European Data Governance (Data Governance Act) (2020) COM/2020/767 final <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0767> accessed 28 April 21

common. This commonality is law's *assumption that data, whether personal or non-personal, is nevertheless, resource.* As resource, data is understood to exist *a priori* to law— freely and naturally in the world. As resource, data can also be usefully acted upon through human effort to create value in the global data economy as well as to create new technologies.

In the chapters that follow, I unpack these claims. As will be seen, this assumption about data as value-generating resource that exists prior to the law serves as the foundation for animating ideas about the human as an entity with agency on the one hand and for construing data as not-human and therefore without agency on the other. This results in the construction of the human entity with agency as the legal person or as the 'data subject.' Simultaneously, deprived of agency, data itself is understood to fall within the category of legal thing. What this outwardly innocuous arrangement however conceals is that *underlying the non-legal idea of data as resource and the legal construction of data as thing lie multiple human and 'unhuman' agencies in entanglement.*[136] *In other words, 'data' is essentially these entanglements of human and unhuman agencies or more-than-human agencies, which at the same time are erased from the definition of data.* These entangled more-than-human agencies that make up data can nevertheless be identified and mapped as part of globally-distributed supply chains of data or the global value chains of data. Use of the representationalism framework to map data's construction within data governance's legal form thus makes the *invisibilised* more-than-human agencies implicated in data *visible*.

[136] For purposes of convenience, I hereafter use the term posthuman to refer to more-than-human agencies in the context of data technologies, eg. posthuman agency of AI, while using unhuman or earth beings to refer to more-than-human agencies at a more fundamental level in the context of data eg. the unhuman agency of land appropriated as data.

Global value chains (GVCs) of data provide a fruitful site for untangling and foregrounding the human and unhuman origins of data as opposed to treating data as a naturalised epistemological artefact. Broadly, GVCs refer to the organisation and co-ordination of value production via global networks that link activities across as well as within forms, nations, and sectors of industry.[137] By GVCs of data, I refer to the transnational processes through which data or big data is created and distributed as well as the mechanisms through which such data flows and generates value for global capitalist production.

In order to generate and add value to data, GVCs function as mechanisms of deep exploitation of human and unhuman agencies and subjects. To contextualise the exploitation of entangled human agencies in data's GVC for instance, we can consider the case of drivers of ridesharing services like Uber and Lyft, who have been organising and protesting for several years now against the business models that use data technologies to connect drivers with passengers in order to make profits.[138] Despite the diversity of geographies, race, nationalities, genders, and backgrounds, all these drivers have the same basic lament— that even as the bosses are making millions, their lives are being reduced to repeated exploitation and abject poverty.[139] Drivers tell stories of how they live in their cars

[137] The IGLP Law and Global Production Working Group, 'The role of law in global value chains: a research manifesto,' (2016) 4(1) London Review of International Law 57

[138] *See* for example, Yaseen Aslam & Jamie Woodcock, 'A History of Uber Organising in the UK' (2020) 119(2) South Atlantic Quarterly 412; Shona Ghosh, 'Uber Drivers are Staging Their First Multi City Strike and It's a Sign Their Anger Over Exploitation Is Getting Harder to Ignore', Business Insider, 9 October 2018 <https://www.businessinsider.de/uber-drivers-multiple-protests-users-log-off-app-2018-10?r=US&IR=T> accessed 29 September 2019; Euronews, 'Anti-Uber Protests Take Thousands of Taxis Off the Streets', Euronews, 16 February 2017 <https://www.euronews.com/2017/02/16/italy-anti-uber-protests-take-thousands-of-taxis-off-the-streets> accessed 29 September 2019

[139] Julia Kolewe, Uber Drivers Strike Over Pay and Conditions, The Guardian, 8 May 2019 <https://www.theguardian.com/technology/2019/may/08/uber-drivers-strike-over-pay-and-conditions> accessed 24 September 2019

because they cannot afford a place with their pay.[140] Additionally, these drivers often work in inhumane conditions—without sick leave and pay or adequate toilet breaks and are subject to unpredictable fare prices determined by the ride-sharing app, as well as dismissal without notice through the deactivation of their apps for unclear reasons. Particularly hard-hit are financially vulnerable migrant workers with limited documentation who depend upon these apps for a living.[141]

These experiences of ridesharing drivers can be instantiated as part of the larger exploitation operationalised by the GVCs of data. Ridesharing drivers embody human agency that creates data in the first place, which is then subsumed into the capitalist machinery of global data production and dubbed as big data. In the use of the ridesharing app, the drivers' agencies are entangled with the unhuman agencies of the minerals and other Earth elements that make up their smartphones and GVC infrastructure to store data and operate data technologies via the app. Because these more-than-human agencies are erased when data is constructed as an epistemological artefact or resource within the legal form, it becomes imperative to account for such erasure in order to provide a fuller account of law's politics. Such an account also illustrates how this erasure shapes the exploitation inherent to data production and value addition in the globalised data economy. *Importantly, in addition to the focus on the politics of access to and distribution of data, such an account centres the power relations entrenched through processes of data production and the law's role in enabling and responding to it.*

[140] Noopur Raval & Paul Dourish, 'Standing Out from the Crowd: Emotional Labor, Body Labor and Temporal Labor in Ridesharing' (2016) CSCW '16: Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing 97; Alex J. Wood, Mark Graham *et al*, "Good Gig, Bad Gig: Autonomy and Algorithmic Control in the Global Gig Economy (2019) 33(1) Work, Employment and Society 56; Alex Rosenblat, *Uberland: How Algorithms are Rewriting the Rules of Work* (University of California Press 2018) 2, 64, 66-67

[141] Rosenblat (2018), *Supra* n. 140, 11-12

Further exploitation of more-than-human agencies in the GVC of data can similarly be instantiated through an account of exploitative land mining activities that are necessary for the production of electronic gadgets like smartphones and laptops without which the production of data at today's large global scale would be impossible. As will be argued, minerals that are vital for big data production are a manifestation of the unhuman agency of the living land that are entangled with the exploited human agencies that operate as the labour of mineworkers; and together, they must be understood as an integral part of the GVC of data.

Consider for example, the coltan mining under slave labour conditions in the Democratic Republic of Congo.[142] Or the Bayan Obo mines in Inner Mongolia that are one of the world's biggest suppliers of so-called 'rare earth minerals.'[143] These minerals include elements like yttrium, lanthanum, terbium, neodymium, gadolinium and praseodymium, which constitute essential components in smartphones and other electronic gadgets like laptops and tablets that are indispensable to the material functioning of data economies today.[144] At the same time, the extraction processes for these minerals result in dire environmental consequences. Processing 1 kg of rare earth mineral ores results in about 1,800 kg of toxic waste, and rare earth mining in the Bayan Obo mines produces 100,000 kg of waste per year.[145] Production and disposal of this toxic waste has

[142] James H. Smith, *Mining the Digital Age in the Eastern DR Congo* (University of Chicago Press 2021); Jeffrey Mantz, 'Blood Diamonds of the Digital Age: Coltan and the Eastern Congo' (2008) 4(3) Global Studies Review 12

[143] Tim Maughan, 'The dystopian lake filled by the world's tech lust,' BBC, 2 April 2015 <https://www.bbc.com/future/article/20150402-the-worst-place-on-earth> accessed 4 September 2019

[144] Jennifer Gabrys, *Digital Rubbish: A Natural History of Electronics* (University of Michigan Press 2011). *See* also, Bianca Nogrady, 'Your old phone is full of untapped precious materials,' BBC, 18 October 2016 <https://www.bbc.com/future/article/20161017-your-old-phone-is-full-of-precious-metals> accessed 4 September 2019

[145] Joanthan Kaiman, 'Rare earth mining in China: the bleak social and environmental costs,' The Guardian, 20 March 2014 <https://www.theguardian.com/sustainable-business/rare-earth-mining-china-social-environmental-costs> accessed 4 September 2019

a significant impact on the ecological food chain as it kills water-based algae due to which the fish dependent on it for food also die.[146] Rare earth mining additionally results in radioactive pollution and heavy metal contamination of the air, soil, and groundwater. Such large-scale mining affects not just the local ecology at the site of mining but also impacts food chains in large regional water basins[147] as well as ecosystems globally.[148]

The exploitation of the unhuman agency of the land entangled with the human agency that is extracted as labour is indispensable for the production of big data and the operation of data technologies. Despite it, this account of more-than-human agencies is erased when the legal form of modern data governance constructs data as resource or as a naturalised epistemological artefact. Additionally, neither does this account of entangled more-than-human agencies including the land's unhuman agency appear in discourses of human and the posthuman in data governance and computational law contexts. Given these exclusions from the legal discourse and the ongoing entangled exploitation of land and human labour for the production of data in GVCs, a counter-mapping of data governance law's construction of data through the analytic of representationalism can excavate the role of its legal form in producing and sustaining these concrete exclusions. I employ Indigenous and feminist critiques of representationalism and approaches to sentient land in order to operationalise

[146] Muhammad Yadeel, Jie Yinn Lee *et al*, 'Cryptic footprints of rare earth elements on natural resources and living organisms' (2019) 127 Environment International 785; *See* also, Cécile Bontron, 'Rare-earth mining in China comes at a heavy cost for local villages,' The Guardian, 7 August 2012 <https://www.theguardian.com/environment/2012/aug/07/china-rare-earth-village-pollution> accessed 4 September 2019

[147] *Supra* n. 146

[148] Arnim Scheidel & Anke Schaffartzik, 'A socio-metabolic perspective on environmental justice and degrowth movements' (2019) Ecological Economics 161

this counter-mapping by proposing the conceptualisation of land as unhuman agency in the GVC of data.

Using the analytic of representationalism to engage with GVCs is thus fruitful for mapping and unsettling the politics of law's construction of data in many ways. First, such an engagement illuminates the ontology of data as part of entangled human and unhuman agencies, which remain erased from data governance law's imagination both when it constructs data an epistemological resource and as personal or non-personal data. Second, in doing so, it illustrates how the framing of the legal discourses concerning human/more-than-human agencies and subjectivities is inherently linked to the exploitation that occurs within data's global political economy. Third, it additionally provides an account of law's role in value production in the global value chains of data. Traditionally, studies of global value chains have treated law as an externality and neglected its significant role in shaping global value chains. Recent scholarship in the area however has called for the study of the role of law both in the production and distribution of global value.[149] It is hoped that the mapping of data governance law's construction of data undertaken in this book will also contribute to understanding how law's political exclusions of human and unhuman agencies from its conceptualisation of data contribute to exploitation and value generation in GVCs.

1.8. The Map

In the previous few pages, I have outlined the key themes with which this book engages as part of its attempt to map how data governance law constructs data.

[149] *Supra* n. 137, 67-73

Undertaking a critical cartography of law's construction of data in the context of data governance is the broad rationale of the present project.[150] Such critical cartography necessarily reveals the politics of the conceptualisation of data by law, which after all is not an innocuous neutral act. This mapping journey is inspired by Abhay Flavian Xaxa's unsettling poem, *I am not your data*, which was published in 2011.[151] Xaxa was a beloved Adivasi scholar, sociologist and activist from Jharkhand, who is well-recognised for his clarity of thought and vision in the Indigenous Adivasi struggles against the settler-colonial hegemony. Each verse of the poem is provocative and speaks to several problematics around the epistemic-ontological discourses of data. Xaxa's verses serve as a compass for each chapter of this book, which presents a mapping of labour and land against the representationalist legal form or aesthetic, and proceeds in the following fashion.

Chapter 2 develops the analytical framework of representationalism to map the construction of data within the legal form of data governance. To do this, I synthesise Indigenous and feminist critiques of representationalism in Western culture with Frankfurt school critical theorist Christoph Menke's analysis of the modern Western legal form. Such a synthesis proposes that the dichotomy of ontology/epistemology is a key feature of representationalism in the Western cultural archive. Additionally, that this dichotomy manifests in the modern legal

[150] On critical cartography and countermapping, *see* Amalia Campos-Delgado, 'Counter-Mapping Migration: Irregular Migrants' Stories Through Cognitive Mapping' (2018) 13(4) Mobilities 488; Nancy Lee Peluso, 'Whose Woods Are These? Counter-Mapping Forest Territories in Kalimantan, Indonesia' (1995) 27(4) Antipode 383; Jeremy W. Crampton & John Krygier, 'An Introduction to Critical Cartography' (2005) 4(1) ACME: An International Journal for Critical Geographies 11

[151] Chitrangada Choudhury & Aniket Aga, "I am not your data, nor am I your vote bank': In Memorium: Sociologist and Activist Abhay Xaxa' (2020) Roundtable India <https://www.roundtableindia.co.in/i-am-not-your-data-nor-am-i-your-vote-bank-in-memoriam-sociologist-and-activist-abhay-xaxa-2/> accessed 19 February 2021

form of data through the separation of the 'non-legal' and the 'legal' and naturalisation of the former.

Chapter 3 uses the representationalism analytic to map how data is constructed as part of the 'non-law' of the modern legal form of data governance in particular. It does this by presenting a historical account of the construction of data within the scientific political economy that data governance law relies upon for its own production of the non-law. The Chapter concludes by highlighting how this results in reification of data as a depoliticised epistemological artefact or naturalised resource in the modern legal form's 'non-law.'

Chapter 4 deploys the representationalism analytic to map how data is constituted as part of the 'law' of the modern legal form of data governance. This is done by foregrounding how data is constructed as a naturalised resource within the legal person/thing dichotomy of modern law. It is argued that the construction of data as a legal category is closely related to and inherently shaped by the depoliticised construction of data as 'non-law' with the modern (Western) legal form or aesthetic.

Chapter 5 continues exploration into the construction of data as part of the 'law' of the modern legal form of data governance by presenting the deployment of person/thing dichotomy within the legislative and policy fields of open data, free flow of data and data protection. The Chapter maps how exclusionary representationalist assumptions have concretely manifested in these areas of data governance law through the historical formulation of 'personal' and 'non-personal' data in the EU. It additionally illustrates how the contemporary legal discourse on data governance fails to attend to the extraction and exclusions of

human and unhuman agencies from the formation of 'data', which are activated by such representationalist assumptions.

Chapters 6 and 7 seek to provide a counter-mapping to data governance law's representationalist construction of data by tracing some examples of the human and unhuman agencies that are a necessary part of the GVC of data but are erased from Western legal culture's narrative of data. Chapter 6 accordingly maps human agency implicit in data through the figure of the Uber driver, which is entangled through the unhuman agency of the living land through the use of the smartphone with its ridesharing app. Tracing how the agency of the Uber driver is erased from narratives of data to generate value in GVCs of data allows us to appreciate the role of data governance's legal form in such erasure. Such counter-mapping also highlights why issues of racialised socio-economic exploitation within big data's political economy remain excluded from the legal discourse of the human data subject, her agency and technological threats to the same.

Chapter 7 similarly maps instances of unhuman agency entangled with labour in the digital Earth through the figure of the living land implicit in data. Drawing upon representationalism-critical Indigenous approaches which pose land as a material-spiritual entity that is alive, I propose that the unhuman agency of land needs to be understood as part of data. Here, I specifically trace the context of smartphones with their data technologies that function on entangled unhuman agency in the form of minerals extracted from the land, often in conjunction with precarious or human slave labour in Africa and across the world. Such counter-mapping traces the unhuman agencies of the land within the GVCs of data to reveal how exploitation and erasure of land's agency is indispensable to the legal form of data. The politics of exclusion through data governance law's endemic representationalism are thus laid bare.

CHAPTER 2

REPRESENTATIONALISM AND DATA'S LEGAL FORM

"…Your words, maps, figures, indicators,
They all create illusions and put you on pedestal
From where you look down upon me…" [1]

2.1. Data as Representation

Today data is popularly understood as a form of knowledge,[2] in particular as a numerical representation of facts. But this has not always been the case. Historian Daniel Rosenberg outlines the modern history of the word 'data' in European

[1] Abhay Flavian Xaxa, 'I am not your data' (2011) <https://www.roundtableindia.co.in/i-am-not-your-data-nor-am-i-your-vote-bank-in-memoriam-sociologist-and-activist-abhay-xaxa-2> accessed 19 February 2021

[2] Here, it should be noted that the understanding of data as knowledge is not unproblematised within Western legal and cultural theory and has been critiqued in debates between rationalist and empiricist camps within the Western cultural archive over the nature of knowledge. In this regard, empiricist camps have proclaimed the end of theory with the emergence of big data. See for instance, Chris Anderson, 'The End of Theory: The Data Deluge Makes the Scientific Method Obsolete' Wired 23 June 2008 <https://www.wired.com/2008/06/pb-theory/> accessed 4 July 2021. In response, rationalist camps have criticised the understanding of knowledge being limited to data. See for instance, Mireille Hildebrandt, *Smart Technologies and the End(s) of Law: Novel Entanglements of Law and Technology* (Edward Elgar 2016) 37-40. By proclaiming data as a form of knowledge, my intention here, however, is not to lend support to either one of these camps in particular but rather offer at a broader level, a mapping of the Western cultural archive's understanding of data which is implicated in both empiricist and rationalist understandings of knowledge.

languages, which can provide some background for the current approach to data as a numerical representation within the Western cultural archive.[3] Rosenberg outlines that at least up until the 17th century, data simply referred to the neuter past participle of the Latin world "*dare*" or "*to give*" and resultantly meant "*to be given.*" This understanding of data allowed for the word to be used as a rhetorical tool for argumentation and for the formulation of theoretical problems primarily in mathematics and theology. In this sense, data as a word was used to refer to assumptions made for the sake of argument, often in conjunction with theoretical problems or hypotheticals.

By the mid-18th century however, this sense of data as the rhetorical premise for an argument or as the givens of a theoretical problem began to shift. While 'data' was still understood to refer to something that is given, assumptions about what constituted given-ness began to be influenced by Enlightenment values of empiricism and the rise of positivist science.[4] In the earlier centuries in western Europe, assumptions made for the sake of argument need not have derived from the use of the scientific method or positivism; in the 18th century, however, such scientific methods rooted in the enquiry of nature became the hallmark of what came to be understood as 'data.' So while in the earlier centuries, the given-ness of 'data' was delineated through an almost counter-positivist stance, now it began to be defined through positivist methods. By the second half of the 18th century, 'data' thus began to mean quantitative facts gathered through observation, collection, and experiment, which are then subject to the mathematical manipulation and scientific or social analysis.[5] By the early 19th century, the term 'data' found import in contexts other than mathematics and theology, notably in fields of population studies and finance, which increasingly employed positivist

[3] Daniel Rosenberg, 'Data as Word' (2018) 48(5) Historical Studies in the Natural Sciences 559
[4] *Supra* n. 3, 566
[5] *Ibid.*

or scientific methods of research.[6] As a quantitative fact, data became a representation of the world as-it-is.

With the development and popularisation of computing technologies in the 20th century, this usage of the term 'data' acquired a wider cultural import.[7] Rosenberg argues that how we use the word 'data' today builds upon both its pre- and post-18th century meaning. In its older sense 'data' is often invoked as a premise for an argument, but it is also used in is newer empirical sense to describe the world through scientific observation, usually through numbers.[8] Importantly, Rosenberg notes that 'data' evokes "*a particular sort of representational entity upon which one could operate through systems of calculation, classification, and communication, while holding the question of referential truth in abeyance*."[9] Particularly in the context of big data and computation, this sense of data as a representation of all possible sorts of material relationships, prevails. Irrespective of whether such data is perceived as accurate or inaccurate, fair or biased, the tacit understanding of data as representation of a scientific nature, usually denoted by numbers, is pervasive. Even within Western critical theory that understands science as part of the Western cultural archive, the understanding of data as symbolic representation of the world is undeniable.[10]

[6] *Supra* n. 3, 562

[7] Daniel Rosenberg, 'Data Before the Fact' in Lisa Gitelman (ed.), *"Raw Data" Is An Oxymoron* (MIT Press 2013), 34

[8] *Supra* n. 7, 33

[9] *Supra* n. 4

[10] See, for instance, the argument made for understanding data not just as a numerical but also as a linguistic representation in engagement with Marxist and liberal theories in Mark Poster, The Second Media Age (Polity Press 2013) 79. "*Databases are configurations of language; the theoretical stance that engages them must at least take this ontological fact into account. A form of language, databases will have social effects that are appropriate to language, though certainly they will also have varied relations with forms of action as well."*

The symbolic and numerical form of data may be particular to it; but as part of the Western cultural archive, data shares its quality of representation with knowledge in general. That is to say, it is not just data which is understood as representation of the world, but all knowledge in Western culture manifests as representation in this sense. Scientific knowledge in particular manifests as a representation of reality. In science studies, this broad idea that scientific knowledge *represents* or depicts reality or the world as-it-is has been termed 'representationalism.'[11]

Representationalism guides our understanding of scientific knowledge to be not a direct manifestation or replication of reality but rather to be what we perceive through our mind or our senses to be reality. In other words, scientific knowledge represents reality as measured through our senses, rather than being reality itself. There is an element of mediation at play here. As part of scientific knowledge or *epistemology* in general, data then is understood as a representation of reality; data represents the world-as-it-is; in other words, data represents *ontological* concerns. In this sense, data itself is not ontology or reality, but symbolic— a semiotic or numerical representation of ontology or what is real. This way of thinking about knowledge generally, and about data specifically, may be termed representationalism.

While the premise of representationalism seems obvious and even natural, it has for long been critiqued by Indigenous, and feminist science studies scholars. More recently, it has also been critiqued by developments in Western philosophy for instance, through new materialist literature. This Chapter seeks to engage

[11] Judith Butler, *Bodies That Matter: On the Discursive Limits of Sex* (Routledge 1996). See also, Joseph Rouse, *Engaging Science: How to Understand its Practice Philosophically* (Cornell University Press 1996); Ian Hacking, *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science* (CUP 1983); Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Duke University Press 2007)

these critiques to develop the analytical framework of representationalism so as to study the construction of data in particular within the modern legal form or aessthetic. I begin by discussing the understanding of representationalism as it prevails in critiques within new materialism, Indigenous and feminist science studies scholarship by outlining its relationship to the ontology/epistemology dichotomy. Because representationalism is foundational to the Western cultural archive and frames our very modes of being and everyday habits of thinking, language, and practices in ways that render it unnoticeable and invisible, it is best articulated through its critiques. Through such an analysis, I seek to outline not just how one may articulate representationalism, but also what kinds of power relationships it generates. In this endeavour one finds that in comparison to new materialist literature, Indigenous and postcolonial feminist literatures have a lot more to offer in terms of critical insights for the scholar interested in mapping the political implications of representationalism and how it shapes the power relations implicated in the construction of data.

Thereafter, the Chapter outlines how such politics of the construction of data may be studied in context of the legal form or aessthetic of modern data governance. To do this, I expand on Christoph Menke's study of modern legal form's Selbstreflektion or 'self-reflection.' According to this Selbstreflektion, the modern legal form, including in the context of data governance, seeks to define itself through a delimitation process whereby it constructs the spheres of 'non-law' and 'law.' How this Selbstreflektion process relates to the politics of representationalism and of the conceptualisation of data as a legal form or aesthetic will be outlined. The present Chapter thus seeks to develop the analytical framework of representationalism in order to study the legal construction of data through the synthesis of Indigenous and feminist literatures critiquing representationalism with a critical legal understanding of modern legal form's Selbstreflektion.

2.2. Representationalism as the Ontology/Epistemology Dichotomy

The notion of representationalism has been in discussion in recent times with the development of work in new materialism. In the last two decades, the term 'new materialism' has emerged to denote an eclectic range of positions that have questioned the centrality of the human subject in analyses across multiple disciplinary fields, including philosophy, humanities, and the social sciences. To offer a comprehensive or nuanced account of the emergence of new materialism, which is vast and differentiated in its scholarship and interventions, is outside of the scope of this book. I, however, attempt a brief and extremely simplified sketch here solely in order to contextualise its relevance to formulating representationalism and its critique.

It may be argued that developments in new materialism come as a response to the humanist positioning of 'old' materialisms that build their analyses upon the dichotomies of body/mind, matter/semiotics (including language), and nature/culture, to name a few.[12] These dichotomies have been foundational to a large part of Western modernity. Per these dichotomies, mind, language, and culture have been traditionally seen as privileged spheres distinct to the human that could be separated from the spheres of body, nature, and other material manifestations that are shared with non-human entities. In this sense, humans are deemed to have a privileged agency as it is believed that only humans through use of their mind, language, and/or culture can grant meaning to the rest of the world and to matter, which is deemed to not possess these capabilities.[13] This

[12] Rick Dolphijn & Iris van der Tuin, 'Pushing dualism to an extreme: On the Philosophical Impetus of a new materialism' in Rick Dolphijn & Iris van der Tuin (eds.), *New Materialism: Interviews and Cartographies* (Open Humanities Press 2013). *See* also, Erika Cudworth & Stephen Hobden, 'Liberation for Straw Dogs?: Old Materialism, New Materialism, and the Challenge of an Emancipatory Posthumanism' (2015) 12(1) Globalisations 134

[13] Nina Lykke, Randi Markussen, and Finn Olesen, 'Cyborgs, Coyotes, and Dogs: A Kinship of Feminist Figurations and There are Always More Things Going on Than You Thought! Methodologies as Thinking Technologies: Interview with Donna Haraway in Two Parts,' in Donna Haraway (ed.), *The Haraway Reader* (Routledge 2004) 327-330

understanding of human agency and the privileged position of the human in the world has been shared by opposing strands of both positivists as well as constructivists and critical theorists, who have traditionally worked with materialist critiques.[14] It has been argued that the policing of the boundaries between nature and culture, mind and body, matter and language has played an essential role in embedding anthropocentrism within Western ways of thinking, knowing, doing, being.[15]

Against such entrenchment of anthropocentrism fuelled by binaries of nature/culture, mind/body etc., new materialisms have emerged as a counter-response to dislodge the centrality of the human subject and question these foundational binaries of Western culture.[16] Parallel to the (not-unproblematic) framing of the 'Anthropocene' as modern technological developments and climate change brought on by the exceptionalism of the 'human' agency,[17] new materialism's emphasis on accounting for posthuman agencies by challenging the binaries of the 'human' and 'non-human' has gained traction in a drastically

[14] See for instance, discussion on the politics of the nature/culture boundary and how it has been reinforced both in positivist and constructivist philosophy in Donna Haraway, 'The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others' in Donna Haraway (ed.), *The Haraway Reader* (Routledge 2004) 68

[15] *Supra* n. 14, 68-70

[16] Rick Dolphijn & Iris van der Tuin, 'The notion of the univocity of Being or single matter positions difference as a verb or process of becoming at the heart of the matter: Interview with Rosi Braidotti' in Rick Dolphijn & Iris van der Tuin (eds.), *New Materialism: Interviews and Cartographies* (Open Humanities Press 2013). *See* also, Rick Dolphijn & Iris van der Tuin, 'Matter feels, converses, suffers, desires, yearns, and remembers: Interview with Karen Barad' in Rick Dolphijn & Iris van der Tuin (eds.), *New Materialism: Interviews and Cartographies* (Open Humanities Press 2013)

[17] On the exceptionalism of the 'human' and its agency, particularly in legal contexts of the Anthropocene, *see* Kathleen Birrell & Daniel Matthews, 'Laws for the Anthropocene: Orientations, Encounters, Imaginaries' (2020) *Law & Critique* 1. On the problematics of 'the Anthropocene,' see, Kathryn Yusoff, *A Billion Black Anthropocenes Or None* (University of Minnesota Press 2018). *See also*, Axelle Karera, 'Blackness and the Pitfalls of Anthropocene Ethics' (2019) 7(1) Critical Philosophy of Race, Vol. 7(1) 32

changing Earth.[18] In this sense, new materialism identifies itself as a 'non-dualist' philosophy which offers a radical challenge to the dualistic or binary thinking embedded in Western culture.[19]

It is against this broad background of Western binaries, anthropocentrism, and challenges to it that the notion of representationalism in the context of data may be unpacked. In this regard while proposing her theory of agential realism, new materialist scholar Karen Barad defines representationalism as "*the ontological distinction between representations and that which they purport to represent; in particular, that which is represented is held to be independent of all practices of representing. That is, there are assumed to be two distinct and independent kinds of entities— representations and entities to be represented.*"[20]

Per this definition, representationalism makes an ontological distinction between representations and entities to be represented. Considering that data is understood as semiotic or numerical representation of thing(s), person(s), event(s) etc., representationalist thought would automatically make a distinction between data and that which it seeks or purports to represent. Furthermore, this distinction would be such that the categories of data (representation) and of actual thing(s), person(s), event(s) (entities to be represented) would be considered independent or *mutually exclusive* of each other. This is to say that *the representation (data) and the represented (the events, persons, things, or 'reality' that data represents) would be constituted in a binary or dichotomous relationship with each other.* In other words under representationalism, actual persons, people, things, events, or so-called 'reality' or 'the real' (understood as ontology) is deemed to exist

[18] William E. Connolly, 'The 'New Materialism' and the Fragility of Things' (2013), 41(3) Millenium: Journal of International Studies 399
[19] Dolphijn & van der Tuin (2012), *Supra* n. 12, 116
[20] Barad (2007), *Supra* n. 11, 46

independently of the practices used to represent said reality i.e., the practices of making knowledge and data (understood as epistemology).[21] In this sense, *representationalism is essentially the dichotomy between the represented and the representations, between reality and knowledge of said reality, between ontology and epistemology.* In the context of data, representationalism then manifests as the dichotomy between that depicted by data, which falls into the sphere of ontology and data itself. Considered as a representation of reality, data in this formulation then corresponds to the sphere of epistemology.

Representationalism as the dichotomy of ontology and epistemology is fundamentally related to the anthropocentric privileging of human agency. The privileging of human agency enables the epistemological processes of knowledge and meaning-making including practices of knowledge and meaning-making through representation (such as data) to belong wholly to the realm of the human. In this, data appears to be distinct from ontological reality or matter which is presumed to have no meaning of its own until perceived and imparted such meaning through human mind, culture, or semiotics. In this sense, the binary of ontology/epistemology is closely related to the binaries of nature/culture, body/mind, matter/semiotics, which together are foundational to the Western

[21] While representationalism establishes the dichotomy of ontology and epistemology, it simultaneously does not preclude the existence of data or knowledge in a format that has an ontological basis. So, representations may be inscribed on paper or a hard drive, with some material and ontological dimensions to them, but as a body of knowledge, are thought to be immaterial or epistemological. Consider for example, census data collection. In representationalist thinking, census taking is considered an epistemological practice whereby processes of knowledge creation about a population are understood to be inherently different from what that population is, viz. the ontology that the census is concerned with. Ontology and epistemology, the representation and the represented or the representer are thus separated. Taking this example one step further, in the case of computerised census data, there may however exist ontological aspects to it, for instance, in the form of the data base, and the dependence on hardware. The mode of knowledge discovery that results in such data or epistemology is however, widely thought to be independent of such forms or hardware dependencies. It is this belief in the independence of the representations/epistemology from the ontological conditions of the represented that characterises representationalism.

cultural archive.[22] The presumption of these dichotomies and their mutually exclusive existence within Western culture implies that ontological categories of persons and things that constitute 'reality' exist *a priori* to epistemological practices of knowledge and meaning-making, including data production about them.[23] Barad illustrates how this presumption persists across ostensibly opposing philosophical positions of scientific realism and social constructivism.[24] The innocuousness of this presumption serves to obscure its presence by pushing it to the background as part of the 'natural order' of things to such an extent that the language of a world unhinged from this presumption becomes hard to enunciate or grasp. It is also what makes representationalism so integral to the Western cultural archive and consolidates its geomorphic power whereby utterances outside of the aforementioned binaries are dismissed explicitly or implicitly as 'unclear', 'confused' or plain 'irrelevant.' Consequently, a suggestion that the land is alive or has agency can be met with racialised rejoinders that label such a suggestion as 'primitive,' 'magical' or 'superstitious' thinking. Similarly given the centrality of representationalism, the idea that categories of human and unhuman do not already exist in reality but are rather made by knowledge practices like data can seem incredulous.

With her theory of agential realism, Barad seeks to respond to representationalist tendencies in Western culture. She lays down an understanding of more-than-human agencies in a way that challenges representationalism in Western science and philosophy which presumes ontological categories of subjects and objects (eg. the 'human' and 'unhuman') to exist prior to their entangled interactions.[25]

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[22] Linda Tuhiwai Smith, *Decolonising Methodologies: Research and Indigenous Peoples* (Zed Books 1999) 55

[23] *Supra* n. 20

[24] Hacking (1983), *Supra* n. 10; Joseph Rouse, *Knowledge and Power: Toward a Political Philosophy of Science* (Cornell University Press 1987). *See* also, Barad (2007), *Supra* n. 11, 48

[25] In her work on representationalism and agential realism, Barad terms these tangled interactions of agencies as 'intra-actions.' This term underlines that subjectivities do not exist prior to their

Such entangled interactions would include epistemological practices through which representations or knowledge is made, which would comprise of data production practices. In other words, as per the new materialist theory of agential realism, representationalism is critiqued by understanding ontological and epistemological claims to be inherently entangled and not dichotomous. Here, reality is not a given upon which practices of representation or data are founded; instead, reality and its representation do not lead two distinct or separate existences; they are intrinsically tied in and implicated in each other.[26]

By contrast, representationalism appears as the separation of the representation (data) and reality (the represented). It should be observed that underlying representationalism is not just the *a priori* distinction between the representation and the represented, but also a tripartite arrangement between the representation, represented and the representer. [27] Under this representationalist tripartite arrangement, distinctions between the representation, the represented, and the representer are made even before accounting for their entangled interactions. In other words, under representationalism such distinctions while being understood as part of reality are made *a priori* to giving an account of their relationship, which is deemed to emerge *after* establishing the distinct existences of the represented and the representer.

It should be noted here that both the representer and represented belong to the ontological realm within representatonalism; but the *a priori* distinction made

agential entanglements but are rather constituted through them. In Barad's words, "*"intra-action" is not the classically comforting concept of "interaction" but rather entails the very disruption of the metaphysics of individualism that holds that there are discrete objects with inherent characteristics.*" Barad (2007), *Supra* n. 11, 422

[26] Barad uses the theoretical insights from certain science studies scholars in conjunction with experimental examples from quantum physics, especially the work of Danish physicist Nils Bohr to illustrate how reality and its representation are not two distinct realms but implicated within each other. Barad (2007), *Supra* n. 11, 247

[27] *Supra* n. 20

between the two opens up an ontological gap. Barad argues that it is this ontological gap between the representer and the represented which creates the possibility of representation or of epistemology [28] viz., knowledge-making practices, including that of data. In other words, under representationalism, epistemological practices fill an ontological gap connecting two pre-established ontological entities. Epistemological practices like data thus serve the function of *mediation* between the representer and the represented[29], and even as they are linked, appear distinct and dichotomous from ontological entities. Through this account representationalism understands epistemological and ontological aspects and claims to be inherently of different natures. The creation of the ontological gap between the representer and the represented is thus pivotal for the presumption of the ontology/epistemology dichotomy or simply, representationalism.

Barad's theory of agential realism critiques this understanding of ontological gap and epistemological mediation that is inhered by representationalism. As a result, her work also challenges the inherent distinction between the nature of ontology and epistemology that is propped by representationalism. She presents this challenge by centring the entangled relationships and agencies from which categories of both unhuman and human may emerge.[30]

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[28] *Ibid.*

[29] *Ibid.*

[30] In her critique of representationalism, Barad centres phenomena, agencies or intra-actions (see *supra* n. 25) over subjectivities or agents, arguing that it is from the former that the latter emerge as distinctive identities. Barad's understanding of phenomena however corresponds neither to the Kantian noumena-phenomena distinction nor phenomena as understood within the phenomenological tradition, both of which she notes to be rooted in representationalist thinking. She observes, "*Crucially, then, we should understand phenomena not as objects-in-themselves, or as perceived objects (in the Kantian or phenomenological sense), but as specific intra-actions. Because the basis of this ontology is a fundamental inseparability, it cuts across any Kantian noumena-phenomena distinction: there are no determinately bounded or propertied entities existing "behind" or as the causes of phenomena. Not only is this ontological understanding of phenomena consistent with Bohr's insights; it is also consistent with recent experimental and theoretical developments in quantum physics.*" Barad (2007), *Supra* n. 11, 128

While valuable to the extent of illustrating the modalities of representationalism outlined above, Barad's work unfortunately offers very little insight into the political implications of agential realism or the power relationships that representationalism creates.[31] Barad attributes representationalism primarily to a mistaken "*metaphysical presupposition*" in Western science and philosophy which is presented as "*the view that the world is composed of individual entities with separately determinate properties*" or of individual entities each with their "*own roster of nonrelational properties*." [32] This presentation of the foundation of representationalism primarily in terms of metaphysics actively conceals the material-spiritual roots of its oppressive power lying in the logic and practice of Western imperialism and its colonialisms.

2.3. The Politics of Representationalism

Long before new materialism discovered it, Indigenous and postcolonial feminist scholarship has already been critiquing representationalism. Unlike new materialism however, these literatures have a materially-precise political orientation and thus, deploy politically-incisive terminology. In fact, Indigenous, feminist, and postcolonial literatures have provided a deep political critique of representationalism through their critical discourses on 'objectivity' and 'epistemic domination' operationalised by the Western cultural archive.[33] Central

[31] In this regard, Barad's writings along with other new materialist scholarship has been critiqued by feminists of colour for its depoliticised whiteness enacted through erasing the work of feminist science studies scholars in highlighting the politics of the body and matter even as it appropriates this work— in this manner tending toward an essentialised truth produced through matter that privileges white-coded bodies. *See* Sara Ahmed, 'Open Forum Imaginary Prohibitions: Some Preliminary Remarks on the Founding Gestures of the 'New Materialism'' (2008) 15(1) European Journal of Women's Studies 23, 33-36; Jasbir K. Puar, *The Right to Maim: Debility, Capacity, Disability* (Duke University Press 2017) 172. *See* also, Sara Ahmed, *Living a Feminist Life* (Duke University Press 2017) 150

[32] Barad (2007), *Supra* n. 11, 50- 59, 46

[33] *See* for instance, Smith (1999), *Supra* n. 21, Vine Deloria Jr., *The Metaphysics of Modern Existence* (Fulcrum Publishing 2012); Talal Asad, 'Ethnographic Representation, Statistics, and Modern

to such analyses has been the political and material domination characteristic of Western imperial and colonial expansion.[34] Highlighting this, in her seminal work on the politics of knowledge production, Māori anthropologist Linda Tuhiwai Smith has observed with regard to creation of Western knowledge about Indigenous Peoples:

"*Imperialism and colonialism are the specific formations through which the West came to 'see,' to 'name' and to 'know' Indigenous communities. The [Western] cultural archive with its systems of representation, codes for unlocking systems of classification, and fragmented artefacts of knowledge enabled travellers and observes to make sense of what they saw and to represent their new-found knowledge back to the West through the authorship and authority of their representations.*" [35]

Here, Smith clearly addresses the tripartite arrangement of representationalism in terms of the representer (the West/Western researcher), the represented (Indigenous communities) and the representation (knowledge, including data). Similar to Barad's understanding, here there is an acknowledgement of the ontological gap which is created through the delineation of the representer and represented *a priori* to an account of their entangled relationship of knowledge production. As a result, the knowledge or representation of Indigenous communities in Smith's account of the Western cultural archive also emerges as

Power' (1994) 61 Social Research: An International Quarterly 55; Donna Haraway, 'Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective' (1988) 40(3) Feminist Studies 575; Lorraine Daston & Peter Gallison, *Objectivity* (Zone Books/Princeton University Press 2010). *See* also, Achille Mbembe, *Critique of Black Reason* (Duke University Press 2013); Kavita Philip, *Civilising Natures: Race Resources, and Modernity in Colonial South India* (Rutgers University Press 2004) 7-12; Ann Laura Stoler, *Along the Archival Grain: Epistemic Anxieties and Colonial Common Sense* (Princeton University Press 2010); M. Anis Alam, 'Critique of Positivism in the Natural Sciences' (1978) 6(9) Social Scientist 67; Sally Haslanger, 'Objectivity, Epistemic Objectification, and Oppression' in Ian James Kidd, José Medina & Gaile Pohlhaus (eds.), *The Routledge Handbook of Epistemic Injustice* (Routledge 2017)

[34] Haraway (1988), *Supra* n. 33

[35] *Supra* n. 22, 60

a form of epistemological mediation between the Western researcher or representer and the Indigenous communities or the represented. As part of representationalism's grammar, the dichotomy of ontology and epistemology is thus established or presumed again.

In sharp contrast to Barad's new materialist approach however, Smith's analysis offers a crucial political element to understanding representationalism as foundational to the Western cultural archive. Whereas Barad's account attributes representationalism simply to false metaphysical beliefs without adequately tracing their concrete political implications, Smith's analysis traces representationalism directly to overt political projects of Western imperialism and colonialism.[36] Without particularly using the term 'representationalism,' its closely intertwined relationship with Western imperial and colonial projects has thus nevertheless been a point of focus in several works of Indigenous and postcolonial feminist scholarship.[37]

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[36] In this context, Barad's exclusion of power relations from her analysis of representationalism is highly problematic. Irrespective of its good intentions, new materialism's depoliticised metaphysical positioning in this manner serves to erase the crucial and direct link between the representationalist idea of data as mediation and the colonial-patriarchal projects of domination. Barad's critique of data/knowledge as mediation without fully accounting for the hierarchical knower-knowee distinction that is core to the Western cultural archive thus may be read as what Indigenous scholars have termed '*settler moves to innocence.*' Settler moves to innocence may be explained as following: "*There is a long and bumbled history of non-Indigenous peoples making moves to alleviate the impacts of colonization. The too-easy adoption of decolonizing discourse (making decolonization a metaphor) is just one part of that history and it taps into pre-existing tropes that get in the way of more meaningful potential alliances. We think of the enactment of these tropes as a series of moves to innocence, which problematically attempt to reconcile settler guilt and complicity, and rescue settler futurity.*" *See,* Eve Tuck & K. Wayne Yang, *Decolonisation Is Not A Metaphor* (2012) 1 (1) Decolonisation, Indigeneity, Education & Society 1, 3-4. *See* also, Janet Mawhinney, *'Giving Up the Ghost': Disrupting the (Re)Production of White Privilege in Anti-Racist Pedagogy and Organisation Change* (1998), Master Thesis, Ontario Institute for studies in Education, University of Toronto <https://www.collectionscanada.gc.ca/obj/s4/f2/dsk2/tape15/PQDD_0008/MQ33991.pdf> accessed 7 July 2021

[37] Smith (1999), *Supra* n. 22; Deloria (2012), *Supra* n. 33; Asad (1994), *Supra* n. 33; Chandra Mohanty, 'Under Western Eyes: Feminist Scholarship and Colonial Discourses' (1988) 30 Feminist Review 61; Vanessa Watts, 'Indigenous Place-Thought and Agency Amongst Humans and Non-Humans (First Woman and Sky Woman Go On a European World Tour!) (2013) 2(1)

To concretely outline how representationalism relates to Western imperial and colonial projects of domination, Smith's analysis foregrounds the hierarchy that necessarily exists under representationalism between the representer and the represented (in her terminology, the 'observer' and the 'observed' or the 'research object'). While similar to Barad's analysis insofar as both the observer (representer) and the research object (represented/observed) are presumed to exist *a priori* of their relationship and belong to the ontological sphere within representationalism's ontological/epistemological dichotomy, Smith's work illuminates the exploitative politics of representationalism that Barad excludes from her account. In this context, Smith's analysis elucidates the crucial point that the *a priori* constituted observer and the research object/observed are not equally positioned. Rather, the latter is subjugated to the former. She notes:

"*The objects of research do not have a voice and do not contribute to research or science. In fact, the logic of the argument would suggest that it is simply impossible, ridiculous even, to suggest that the object of research can contribute to anything. An object has no life force, no humanity, no spirit of its own, so therefore 'it' cannot make an active contribution. This perspective is not deliberately insensitive; it is simply that the rules did not allow such a thought to enter the scene.*"[38]

The 'rules' which Smith talks about here are of course, the representationalist rules of the Western cultural archive which make certain kinds of enunciations or formulations possible as coherent or fathomable.[39] As per these rules, not only an ontological gap is created between the observer and the observed so as to delineate a sphere of epistemology distinct from the ontological existence of the

Decolonisation, Indigeneity, Education & Society 20; Haraway (1988), *Supra* n. 32; Gyan Prakash, 'Science "Gone Native" in Colonial India' 40 Representations 153

[38] *Supra* n. 22, 61

[39] Michel Foucault (trans. A.M. Sheridan Smith), *Archaeology of Knowledge* (Routledge 2002) 127-132, 146

observer and the observed, but importantly also, *the agency of the observed or the research object is erased*. Under this arrangement, it is only the observer who is deemed capable of actively or independently using their agency in order to engage in epistemological or knowledge-making practices like data creation. The observed on the other hand remains a passive ontological entity without life force, spirit or *agency* of its own to contribute to processes of knowledge-making or data creation.

In other words, representationalism produces not just an ontological gap between the representer and the represented, the observer and the observed, but specifically, a *hierarchical* ontological gap whereby the agency of the research object or the observed is erased and subsumed within the agency of the observer. Unlike new materialist scholarship which focuses its critique of representationalism on the ontological gap created between the observer and the observed and the resultant appearance of epistemology as mediation,[40] it is the *exploitative power relationship* created by this ontological gap through the emergence of epistemology that has been central to Indigenous and postcolonial feminist analyses. In this sense, representationalism is understood as an overtly political project that installs exploitative power relationships by presuming the agential superiority of the observer over the observed.

As Smith and others argue, by instilling this worldview that *validates the observer's agency while negating the agency of the observed*, representationalism has historically and continues to aid Western imperial and colonial projects. For instance, it has been pointed out that under representationalist scientific knowledge production, Indigenous peoples are racialised and constituted as research objects or the 'observed' without agency and therefore rarely acknowledged for their

[40] *Supra* n. 20

contribution to Western research. At the same time, the production of such scientific knowledge about Indigenous peoples is attributed to Western 'observers' who are deemed to actively exercise their agency for such knowledge production.[41] I discuss the details of representationalism's politics in context of scientific knowledge and data production in the next chapter by offering a few fragments from the long history of representationalism's operation in modern Western imperial and colonial projects. But for now, it is vital to note that representationalism is not neutral nor innocent but necessarily institutes a hierarchical relationship of power between the represented and the representer, the observed and the observer.

The ontological/epistemological dichotomy installed by representationalism, of course, still persists. Crucially however, it persists not in an innocuous way but rather in a deeply political way given the hierarchy implicated in the ontological gap between the observer and the observed. The idea of this hierarchy whereby the observer is deemed to be capable of independent action or agency in order to create knowledge about the observed who is deemed to have no agency to contribute to said production of knowledge is deeply entrenched within Western psyche and culture. Consider the proposition that if a geologist studies a rock, the rock actively contributes to said knowledge production. Or still further the proposition that it is the agential practices of knowledge-making or storytelling through entangled interactions in the world which lead to the emergence of the rock and the geologist as distinguishable entities in the first place. Viewed while steeped within representationalism of the Western cultural archive, both aforementioned propositions probably appear ludicrous.

[41] *Supra* n. 22, 60

The idea that distinguishable ontological entities (eg., agents) do not exist *a priori* to agential practices of knowledge and meaning-making about them is so alien to the Western cultural archive that even our language prevents us from expressing it; it is after all impossible to construct a meaningful sentence with only verbs (agency) and no implicit or explicit subjects (agents). Similarly, the active form of words like 'observer' and 'representer' indicate that the idea of the observer being the active agent that makes or 'discovers' knowledge is pretty well rooted in our culture. Simultaneously, the passive forms of words like 'observed' and 'represented' reinforce the pervasive notion that the observed is a passive entity without agency who is simply the object of knowledge with no active role in creating it. I remark upon these aspects of course not to provide any sort of definitive discussion on the relationship of representationalism with the politics of our languages, but simply to underline the omnipresence of representationalism and the power relationships it inheres in our everyday practices and thinking in the Western world.[42]

Representationalism thus refers to three aspects for the purpose of this book: First, the dichotomy between ontology and epistemology. Second, the ontological gap between the observed and observer, which is necessary for the creation of the dichotomy between ontology and epistemology. And third and perhaps most importantly, to the subjugation and subsumption of the observed's agency to that of the observer, which operationalised by this dichotomy within epistemological practices like data production. The observed in this case can, of course, refer to both human and unhuman entities. In the context of data production, for

[42] The relationship of language with the politics of knowing has been widely discussed in Indigenous scholarship. *See* for instance, Vine Deloria, Jr., 'If You Think About It, You Will See That It Is True' in Barbara Deloria, Kristen Foehner & Sam Scinta (eds.), *Spirit & Reason: The Vine Deloria, Jr. Reader* (Fulcrum Publishing 1999) 48-51; Leanne Betasamsake Simpson, *Dancing on Our Turtle's Back: Stories of Nishnaabeg Re-creation, Resurgence, and a New Emergence* (Arbeiter Ring Publishing/ARP Books 2011) 49-54

instance, it would include both human beings that are surveilled and unhuman entitites or earth beings about whom data is gathered. The observer is separated from the observed under representationalism, leading to the appearance of the category of epistemology whereby the *active* observer studies, researches, surveils, observes and creates knowledges or data about the *passive* observed who is deemed to not contribute in any active way to such knowledge or data.

At the same time, human exceptionalism induced by the body/mind, matter/semiotics, and nature/culture binaries in the Western cultural archive constitutes human beings as the only entities capable of self-awareness or an inner life. This induces the construction of the human as a uniquely superior being in Western culture who holds exceptional capacities for thinking, feeling, articulating, reasoning, language, and therefore, agency in the fullest sense.[43] Accordingly, the ontological position of the observer under representationalism always places humans at the apex, since they are deemed to be the only beings with the capacities required for creating knowledge or meaningful data. While it is true that with the development of new data technologies, the need to recognise posthuman agencies has been highlighted in Western cultural discourses, such agency is often understood to be mechanistic and/or not deemed to be full agency or equivalent to human agency.[44] This is understandable because in the

[43] Sandra Harding, *Sciences from Below: Feminisms, Postcolonialities, and Modernities* (Duke University Press 2008) 3-6; Deloria (1999); Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (Harper 1980)

[44] *See* for instance, Mireille Hildebrandt, 'The Artificial Intelligence of European Union Law' (2020) 21(1) German Law Journal 74, whereby she distinguishes between human and non-human agency by ascribing consciousness and intentionality to the former but not the latter, thus producing a mechanistic view of non-human agency. On the end of the spectrum *see* also, for instance, Bruno Latour, 'Agency at the time of the Anthropocene' (2014) 45(1) New Literary History 1, whereby in an attempt to question human hierarchy over the non-human, the foundation of agency within conciousness and intentionality is rejected and metaphorised, thus rendering all kinds of agencies mechanistic. For a critique of this formulation, see Jonggab Kim, 'The problem of nonhuman agency and bodily intentionality in the Anthropocene' (2020) 47 Neohelicon 9. To be clear, I point this fact of degradation of the non-human agencies in technological contexts as a matter of observation. My argument here is not to understand new

entrenchment of representationalism, such equivalence is just not possible. The hierarchy of the observer and the observed, thus oft-specified as the hierarchy between the human and the unhuman then persists in Western culture which is characterised by representationalist accounts. Anishinaabe and Haudenosaunee scholar Vanessa Watts explains the understanding of agency under representationalism while distinguishing it from Anishinaabe/Haudenosaunee worldviews as follows:

"The epistemological-ontological divide processes agency much differently. A common understanding of epistemology would describe it as one's perception of the world as being distinct from what is in the world, or what constitutes it. Thought and ideas are reserved for the one perceiving- humans. All other objects, actants, or beings in the world may have an essence or an interconnection with humans, but their ability to perceive is null or limited to instinctual reactions."[45]

With such human exceptionalism, the observer/observed distinction under representationalism is further politicised. Even where the agency of posthuman entities in contributing to knowledge-making and data production is recognised, it is understood to not be full agency and is constituted within a hierarchy of the human over the non-human. The politics of representationalism thus emanates from both the hierarchies between the observer and the observed as well as the human and the unhuman. Under representationalism, unhuman agency is subjugated under the agency of the human[46] in parallel to the subjugation and subsumption of the observed's agency under the agency of the (human) observer. Such an understanding of the world which is founded upon a hierarchical ontological gap between the observed and observer, unhuman and human,

data technologies in the same way as human agents or to grant them legal personhood. The focus of this book is on the human and unhuman agencies implicated within data and not data technologies, and further discussion on this matter remains outside of the scope of this book.

[45] Watts (2013), *Supra* n. 37, 24

[46] Watts (2013), *Supra* n. 37, 28

entrenches exploitative relationships of power at the very genesis of epistemology. In doing this, processes of knowledge production within Western culture, including data practices are inflected with unequal relationships of power between the observer and observed, the human and unhuman, right from their beginning, at the point of data creation.

By erasing or diminishing the agency of the observed, the ontological/epistemological dichotomy inhered by representationalism thus enables the flow of knowledge from observer to observed but not the other way around. As Watts observes, the man-made distinction between ontology and epistemology is not an innocent one since it elevates humankind outside or above the natural world,[47] which serves to deepen the hierarchy established between the observer and the observed. Accounting for such hierarchy reveals that the use of epistemological practices including data for mediation of the ontological gap opened by representationalism serves exploitative politics. In this sense, representationalism is a dominant feature of Western imperial and colonial configurations that subjugate both the human and unhuman observed. While new materialist literatures critique representationalism, they do not account for its politics in a productive way. On the other hand, a political account of representationalism derived from Indigenous and postcolonial feminist scholarship serves as a useful framework to map the politics of knowledge

[47] In this context, Watts understands ontology as dealing in questions of 'what' about the world and epistemology as relating to questions of 'how/why' within Western cultural archive. Accordingly, she notes, "*The man-made distinction between what and how/why is not an innocent one. Its consequences can be disastrous for not only non-humans but humans as well. If we lay this framing atop of nature, humankind is elevated outside or above the natural world. The reasoning being that perception is a gift or trait bestowed to the human mind, and most certainly not something possessed by a stone or a river. A river may act (i.e. flow) but does it perceive or contemplate this? An Anishinaabe perspective would respond in the affirmative. As we can see from the process of colonisation and the imposition of the epistemology-ontology frame, our communication and obligations with others beings of creation is continuously interrupted.*" Watts (2013), *Supra* n. 37, 24. For context about how this observation relates to the issue of human exceptionalism created through consciousness and intentionality within the Western cultural archive, *see* also, *supra* n. 44

production, including the politics of data construction under modern law of data governance.

2.4. Selbstreflektion and Data's Legal Form

How does modern data governance law construct data? In the EU, the Regulation on a framework for the free flow of non-personal data in the European Union defines 'data' for its purposes as "*data other than personal data*" as defined by the General Data Protection Regulation (GDPR).[48] Non-personal data is thus defined by exclusion as that which does not constitute personal data. On the other hand, the definition of personal data under the GDPR refers to "*any information relating to an identified or identifiable natural person ('data subject').*"[49] With these definitions, the closest we get to understanding data governance law's construction of data— whether as personal or non-personal— is the idea of information. But what does it tell us about the politics of data and the implications of representationalism on the conceptualisation of data under the law? Admittedly, not much.

This is, however, not to say that representationalism does not affect modern law and its techniques. Representationalism is foundational to the Western cultural archive and by approaching law as culture through the co-productive approach, we are alerted that law is indeed part of said archive.[50] This implies that the politics of representationalism must also shape modern law, its conceptualisations and constructions. How might we then excavate

[48] Art. 3(1), Regulation (EU) of 2018/1807 the European Parliament and of the Council of 14 November 2018 on a framework for the free flow of non-personal data in the European Union [2018] OJ L303/59

[49] Art. 4(1), Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L119/1

[50] Renisa Mawani, 'Law's Archive' (2012) 8 Annual Review of Law and Social Science 337

representationalism's influence upon the coneptualisation of data by modern data governance law? Rather than examining legal hermeneutics, I suggest that this can be done by delving into modern law's grammar viz., the modern legal form or aesthetic. Modern Western law's production of knowledges as part of the cultural archive is not indiscriminate but rather follows a specific format or aesthetic, which is recognisable as law. In this sense, modern Western law is distinguished from other legal and/or cultural traditions not so much by its content or objective, but rather by its form.[51] In order to map the legal construction of data through the proposed framework of representationalism, attention to the modern legal form is therefore crucial. To understand the operation of the modern legal form and the construction of data within it, I draw on the work of Frankfurt school critical theorist Christoph Menke.

Menke's account of the modern legal form is not just descriptive but also critical insofar as it provides a structural framework for the creation and sustenance of power relationships by modern law. In this sense, the legal form or aesthetic should be understood as law's grammar; rather than shaping the content of legal norms, the legal form structures how modern law makes sense of itself. Menke's core argument is that this grammar is not neutral or apolitical. Instead, the modern legal form conceals the power relations which law creates in the process of defining itself as law or in other words, its boundary work. Building on this discussion, my argument is that the construction of data within the politics of the modern legal form is interlinked to the politics of representationalism.

In his work, Menke notes that modern Western law today is widely understood to be predicated on the conceptualisation of law as a normative claim.[52] Furthermore, he argues that the source of legitimacy for modern legal norms is

[51] Christoph Menke (trans. Christopher Turner), *Critique of Rights* (Polity Press 2020) 3-5
[52] *Supra* n. 51, 3

not the monarch, the State, or the sovereign. Rather, the source of legitimacy for modern legal norms is law itself[53]; or what may be understood as the 'rule of law.' In this sense, the rule of law renders modern law as an autonomous system by operationalising the normative claim of the modern legal form through itself. Through the concept of the rule of law, modern Western law thus perceives itself as a fully autonomous entity. Modern law thus sees itself as a self-governing system that is not dependent upon political considerations which lie outside of the law but rather as a system that generates itself independently through its self-made grammar or form. Modern law thus generates itself through self-reference. As Menke notes, "*Autonomy here means that law must create its own normativity. In other words, law's normativity is only its own if it is created— without being based on a moral politics or natural reason."*[54]

These observations are, of course, not to claim in any way that modern law's understanding of itself as an autonomous system is justified. Such understanding of the rule of law and the legal form has been critiqued within diverse scholarship for a long time now and has illustrated how the law functions neither autonomously nor apolitically.[55] Nevertheless what is important to note is that within the so-called 'legal community', the idea of law as an autonomous system still has hold. Additionally, it is this idea of autonomy which is often deemed to grant modern law its legitimacy. Specifically, such autonomy refers to the formulation of law within the auto-generative grammar of the modern legal form.

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[53] *Supra* n. 51, 5

[54] *Supra* n. 51, 71

[55] *See* in this regard for instance, Kimberlé Crenshaw, Neil Gotanda *et al* (eds.), *Critical Race Theory: The Key Writings That Formed the Movement* (The New Press 1995); Peter Fitzpatrick, *The Mythology of Modern Law* (Routledge 1992); Reza Banakar, *Normativity in Legal Sociology: Methodological Reflections on Law and Regulation in Late Modernity* (Springer 2015) 51-58; Susan Silbey, 'After Legal Consciousness' (2005) 1 Annual Review of Law and Social Science 323; Mawani (2012), *Supra* n. 50; Jonathan Simon, 'Law after Society' (1999) 24(1) Law and Social Inquiry 143; Robert Cover, 'Nomos and Narrative' (1983) 97 Harvard Law Review 4

In this sense, the autonomy or rule of law might be understood as the so-called 'internal perspective' on law.[56] This idea of the internal perspective on law can be traced to the work of British analytical jurist H.L.A. Hart who influentially articulated the distinction between internal and external perspectives as follows: "*When a social group has certain rules of conduct ... it is possible to be concerned with the rules, either merely as an observer who does not himself accept them, or as a member of the group which accepts and uses them as guides to conduct. We may call these respectively the "external" and the "internal" points of view."*[57] If we were to understand the legal community as a social group that accepts the rules of modern law's legal form that constitute it as an autonomous system and uses this understanding of autonomy as a guide to its everyday conduct; then the perspective of such legal community may be termed as the 'internal point of view' or the 'internal perspective' on law. In this regard, Western legal philosophers have influentially proposed the centrality of the rule of law to modern law's functioning.[58] In addition, the work of legal anthropologists and historians has illustrated that lawyers, judges, and others working within Western legal systems have often understood the rule of law to

[56] It is worth noting that while the notion of 'internal' and 'external' perspectives on the law is often attributed to Hart, the German sociologist Max Weber forged a similar distinction earlier between what he called 'legal' and 'sociological' points of view. In this regard, Weber observes, "*When we speak of "law," "legal order," or "legal proposition" (Rechtssatz), close attention must be paid to the distinction between the legal and the sociological points of view. Taking the former, we ask: What is intrinsically valid as law?. ..But if we take the latter point of view, we ask: What actually happens in a community owing to the probability that persons participating in the communal activity (Genteinschaftshandeln), especially those wielding a socially relevant amount of power over the communal activity, subjectively consider certain norms as valid and practically act according to them, in other words, orient their own conduct towards these norms?*" Max Rheinstein(ed.) (trans. Max Rheinstein & Edward Shils), *Max Weber on Law in Economy and Society* (Harvard University Press 1969) 11

[57] Hart, H.L.A., *The Concept of Law,* 3rd edition (Clarendon 2012) 89

[58] *See* for instance, Lon L. Fuller, *Morality of Law* (Yale University Press 1969); Joseph Raz, *The Authority of Law: Essays on Law and Morality* (Clarendon 1979). For a more critical account of the rule of law in legal philosophy, see Robert Cover, 'Violence and the Word' (1986) 95 Yale Law Journal 1601

be cogent with the idea of modern law itself even when the experience of the rule of law is not similar elsewhere.[59]

Although I do not subscribe to the idea of any inherent distinctions between the 'internal' or 'external' perspectives on law as found in the work in analytical jurisprudence, I do believe a pragmatic deployment of this distinction can be useful to unravel how modern law conceives of itself and in the process, garners legitimacy.[60] As Menke's work illustrates, attending to modern law's self-perception of its internal grammar is important in order to trace how the politics of the legal form or aesthetic is generated and concealed. It is against this backdrop that I propose understanding the normative autonomy of law as a core feature of the modern legal form. Deprived of this autonomous normative power, law as understood today in the Western legal tradition is no longer 'law.' Translated in the context of the construction of the category of data under data governance law, the narrative of this 'internal' perspective implies that legal

[59] Admittedly, such work has also problematised and provincialised the notion of the rule of law and its hegemonic cogency with the idea of modern law as particular to Western cultures by highlighting the violence and exclusions that rule of law has shaped in non-Western conflicts. *See* for instance, Sally Engel Merry, Kevin E. Davis *et al* (eds.), *The Quiet Power of Indicators: Measuring Governance, Corruption, and Rule of Law* (CUP 2015); James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (Yale University Press 2008); Ugo Matteri & Laura Nader, *Plunder: When the Rule of Law is Illegal* (Wiley-Blackwell 2008); Rosa E. Brooks, 'The New Imperialism: Violence, Norms, and the "Rule of Law"' (2003) Georgetown Law Faculty Publications and Other Works 48; Jean Comaroff & John L. Comaroff (eds.), *Law and Disorder in the Postcolony* (University of Chicago Press 2006); Martin Chanock, *Law, Custom, and Social Order: The Colonial Experience in Malawi and Zambia* (CUP 1985); Ranajit Guha, *Dominance Without Hegemony: History and Power in Colonial India* (Harvard University Press 1997); Nick Cheesman, 'Taking the Rule of Law's Opposition Seriously' (2017) 9 Hague Journal on the Rule of Law 29

[60] In this context, the work of French deconstructionist philosopher Jacques Derrida serves as an important intervention in demystifiying the process by which the law develops its legitimacy. See for instance, Jacques Derrida, 'Force of Law: The Metaphysical Foundation of Authority' in Drucilla Cornell, Michel Rosenfeld *et al*(eds.), *Deconstruction and the Possibility of Justice* (Routledge 1992). While important, Derrida's work however provides mostly an external perspective on the law and does not engage with its internal grammar or legal form in the way Menke's work does. In developing his thesis, Menke engages both the work of Derrida along with work in systems theory to offer his critique of the modern legal form.

knowledge production about data transpires autonomously through the modern legal form without interference from the 'non-legal.'

In contrast to this, 'external' perspectives which employ a co-productive approach to law however illustrate that legal knowledge production is part of cultural knowledge production and does not happen in isolation from other Western cultural practices like science, technology, and economy.[61] In the context of legal knowledge production about data, law is certainly informed by expertise and practices in the fields of data science, computational engineering and the global digital economy. How is the internal perspective on law as an autonomous self-referential system implicit in the rule of law then reconciled with the obvious reliance of law on other cultural practices for production of legal knowledge?

I propose that it is precisely here that Menke's work on the modern legal form becomes relevant. By tracing the politics of the modern legal form or aesthetic, Menke is able to highlight how modern law co-produces legal knowledge with other cultural practices while still maintaining the perception of its autonomy. While his work unfortunately does not engage with socio-legal or STS/science studies of law which underline the co-productive nature of law, it does, however, provide a broader framework for illuminating the politics of the co-production of legal knowledges. Menke's scholarship can thus provide us a framework for understanding the processes of co-production of data by the law of data governance and the scientific political economy while also accounting for the

[61] *See* for example, Sheila Jasanoff, *Making Order: Law and Science in Action*, in Edward J. Hackett, Olga Amsterdamska *et al* (eds.), *The Handbook of Science and Technology Studies*, 3rd Edition (MIT Press 2007) 768-772; Rosemary Coombe, 'Contingent articulations: A critical cultural studies of law' in Austin Sarat & T.R. Kearns (eds.), *Law in the Domains of Culture* (University of Michigan Press 1998); Austin Sarat & Patricia Ewick (eds.), *The Handbook of Law and Society* (Wiley 2015); Christopher Tomlins & John Comaroff, '"Law as…": Theory and Practice in Legal History' (2011) 1(3) UC Irvine Law Review 1039

internal perspective of law's knowledge about data being an autonomous legal production.

In this regard, Menke's work may be understood as a mapping of how the modern legal form is used to negotiate through the contradictions between the internal and external perspectives on law generally, and specifically for the legal construction of data. This negotiation between the internal and external perspectives occurs through what Menke terms as Selbstreflektion or the 'self-reflection of law.'[62] Here, Selbsreflektion refers to the operationalisation of modern law as an autonomous system through reflection upon its own form in order to "[establish] the difference between law and non-law *within the law."*(emphasis mine)[63]

In other words, modern law's Selbstreflektion may be understood to seek reconciliation of the contradictions of internal and external perspectives about legal knowledge by (1) negotiating the boundary between that which may be understood as 'law' and that which lies outside of law's boundary viz., the 'non-law,' and (2) importantly, by negotiating such boundary in a manner that said boundary is created internal to the system of modern law. Menke argues that modern law thus produces knowledge not just about what is legal and what is illegal, but also about its own self by delineating what law is and what it is not. This boundary work between 'law' and 'non-law' in the modern legal form is distinct from the boundary-setting between legal and illegal; and as important to the operation of law. As Menke observes, "*Law therefore requires not only the identification of something as legal or illegal, but also the identification of other acts as such that use the distinction of legal and illegal or that do not use it— and thereby, at the same time,*

[62] *Supra* n. 51, 5
[63] *Ibid.*

law requires the use of the distinction between legal and non-legal."[64] Even though the construction of the 'non-law' within the legal form may not always be obvious, Menke argues that the creation of the boundary between legal and non-legal by modern law is thus fundamental to its existence and constitutes law's Selbstreflektion, which is an inherent feature of the modern legal form.

Applying this analysis in the context of data governance and its production of legal knowledge, we can make a few crucial observations pertinent to the legal form or aesthetic of data: The modern legal form or law's Selbstreflektion operates not just through the creation of a 'legal' category of data but also by creating a 'non-legal' category of data. This 'non-legal' category of data however is a legal construction in the sense of being constructed by the legal form. In this regard, data is constructed at the boundary of 'law' and 'non-law' within the law. The construction of the 'non-law' within the law enables the proclamation of modern law as an autonomous system created through self-referential processes while still allowing for the possibility of co-production with other 'non-legal' cultural knowledges. Given however that this 'non-legal' knowledge is defined and constructed by the legal form itself, it allows modern law to maintain the aura of its autonomy and of the rule of law.

2.5. The Politics of Data's Legal Form

By highlighting the construction of the non-law within the modern legal form, Menke's framework of law's Selbstreflektion provides not just an account of the mechanism through which modern law negotiates between its internal and external perspectives, but also an account of the problematic power relationships that are enacted through such negotiation. Menke further identifies two distinct

[64] *Supra* n. 51, 79

ways in which law's Selbstreflektion enacts these politics: (1) Through the 'enabling' feature of Selbstreflektion via which the modern legal form *bases* law on natural strivings as facts; and (2) Through the 'permitting' feature of Selbstreflektion via which the modern legal form *restricts* law to natural strivings as facts.[65]

The enabling feature of Selbstreflektion highlights the basis of the normativity or 'law' of modern legal form within "*factity or nature.*" Here 'factity' or 'nature' refers to the 'non-law' that is, everything which modern law deems to exist before or outside of the legal system; and signifies everything that does not fall under the rubric of legal normativity. Accordingly, the enabling feature of Selbstreflektion signifies that the 'law' is actually dependent on the 'non-law.' In other words, legal normativity does not arise out of nothing, but rather is established through the process of Selbstreflektion by reconfiguring certain experiences of the world as 'natural' or 'given.' Accordingly, these experiences are pre-supposed by the law, and are constituted as 'non-law.' In this way, even as law's Selbstreflektion creates the distinction between 'law' and 'non-law', it enables the creation of law through the treatment of the 'non-law' as a pre-supposed given.

By constructing 'non-law' as natural or given, law's Selbstreflektion however also depoliticises the 'non-law' within the legal form. Menke argues that this is achieved by the use of law's Selbstreflektion *to obscure the modern legal form's role in the creation of the 'non-legal.'* In this context, modern law behaves as if it simply enables natural strivings external to law; at the very least limiting and at best, promoting them. Upon this enabling basis of factity or depoliticised 'non-law', legal norms are created in order to regulate the 'non-law', as if the latter category

[65] *Supra* n. 51, 73

were completely external to law and were not constructed by the modern legal form itself. It is in this sense that Menke lays down that the modern legal form entitles or legalises (in the sense of law v. non-law, not in the sense of legal v. illegal) natural strivings as "*facts*." Here, facts refer to that which is 'non-law' or external to legal norms.[66] But as illustrated, this process of legalising or creation of the 'law' from the 'non-law' while laying down the modalities of the boundary between the two is an inherently political one. This is because such a process of legal formalisation treats the 'non-law' apolitically, thus concealing its political nature. In this depoliticised form, natural strivings treated as facts become constituted as the 'non-law' within the modern legal form.

Given this enabling feature of law's Selbstreflektion, I propose that modern data governance law's construction of data as 'non-legal' may be understood to follow a similar pattern. The legal category of data is based on the modern legal form's construction of a non-legal category of data. This dependence allows us to explain why we do not find a more explicit definition of the term 'data' altogether within the written texts of modern data governance law. It is because through the enabling feature of the modern legal form, the non-legal understanding of data is tacitly assumed to be given or true, rather than being actively constructed by the law's Selbstreflektion. In parallel, even as law's Selbstreflektion constructs data within the categories of 'legal' and 'non-legal,' it naturalises and thereby, depoliticises the non-legal understanding of data. It does this by constructing a certain understanding of 'data' as a self-evident fact which is external to data governance law. This mode of construction of the 'non-legal' in general and the 'non-legal' understanding or knowledge about data in particular is inherently political. It is political because it obscures and conceals the role and politics of the modern legal form in constructing said 'non-legal' as natural and given.

[66] *Supra* n. 51, 71-72

Simultaneously on the other hand, the permissive feature of law's Selbstreflektion enables the creation of legal normativity or 'law' in a manner which presumes that law's assumptions about the distinction between non-law and law do not lie at its own disposal. In other words, the presumption is that a questioning of the nature of the 'non-legal' lies outside of the scope of the legal. This is because, if as per the enabling feature legal normativity stems from, or comes *after* the givenness of nature or factity or the 'non-legal' has been accepted, then it becomes impossible for legal normativity to question the basis of such nature. In this sense, modern law's normative order is established and obeyed only because it is conducive to law's construction of the 'non-legal' as natural. In this manner, Menke argues that the modern legal form permits or legalises the naturalisation of the non-legal.[67]

This permissive feature of the modern legal form implies that even as legal normativity establishes itself, it also restricts itself because it can only enable or validate, but not question what it has simultaneously accepted to be 'nature' or non-law. According to Menke, unlike the liberal (mis-)understanding then which perceives the limitations to legal normativity to be created only external to the legal form (eg. in the political institutions of the sovereign, judiciary etc.), the permissive feature of the modern legal form illuminates that there is no contradiction between the self-establishment and self-limitation of modern law; rather the latter is essential and inherent within the former. In other words, "*The establishment of law is its limitation, the limitation of law is its establishment*."[68] It is in this sense that the modern legal form *restricts* law to natural strivings or facts; or restricts legal normativity on the basis of its knowledge production about non-law that is taken to be given or natural within law.

[67] *Supra* n. 51, 72
[68] *Supra* n. 65

In the context of data governance law's construction of data, the permissive feature of Selbstreflektion manifests as the presumption that the 'non-legal' understanding of data lies outside of the ambit of law. At the same time, construction of the legal knowledge about data is limited by the non-legal knowledge about data. This means that the legal understanding of data is built upon the non-legal construction of data, which is presumed to be natural or given. In other words, the non-legal understanding of data appears as a depoliticised fact. Considering that the legal construction of data is limited by its non-legal assumptions about it, data under the 'law' then also appears as apolitical given or as a fact under modern law's Selbstreflektion. Working with the analytical framework of representationalism however alerts us to the proposal that data within the Western cultural archive is a deeply political construction. Mapping how this politics of data is concealed through the Selbstreflektion of the modern Western legal form constitutes the agenda for the following chapters.

2.6. Conclusion

To summarise, the Selbstreflektion of the modern legal form thus produces knowledge about law and non-law within the law, even as it obscures its production of non-law by assuming it as a given or a fact. In constituting non-law as a fact, it is also naturalised and depoliticised. Through this process, the representationalist politics of data is obscured. At the same time, the legal construction of data is dependent upon the non-law of data. Since the latter appears innocuous, the legal understanding of data also appears apolitical; when, in fact, this is not the case.

The framework of representationalism developed in the earlier sections refers to three related aspects: First, the dichotomy of ontological and epistemological

realms. Second, the pre-supposed ontological gap between the observer and the observed which is necessary to effect this dichotomy by proposing epistemology as a mediation between distinct ontological entities. Third and crucially, representationalism refers to the hierarchy which is established between the observer and the observed in the creation of the ontological gap between the observer and observed. Under this hierarchical arrangement, the agency of the observer in the processes of knowledge and data production is recognised and reinforced while the agency of the observed is erased. Since the observer is often conflated with the human with full agency and the observed often (but not always) conflated with the unhuman, representationalism also establishes the hierarchy of the human over the unhuman in the knowledge and data production processes. These exploitative power relationships enabled by representationalism have been highlighted in the context of supporting Western imperial and colonial projects and have been challenged by Indigenous literatures and postcolonial feminist scholarship.

Usage of the analytical framework of representationalism in order to map the construction of data as undertaken by the Selbstreflektion of the modern legal form can thus offer us insights into how law actually constructs data, what is left unspoken in such construction, and what this conceals. In effect, it can help us lay bare the politics of data within the legal form or aesthetic. To do this, we need to map the construction of data both as the non-legal and the legal, since the latter is dependent on the former.

The next chapters accordingly seek to map the non-legal and legal constructions of data respectively. In doing so, however, I am attendant to the politics of representationalism and trace how the construction of data as the non-legal in fact manifests power relations enabled by representationalism. I thus propose that the non-legal construction of data is neither given nor natural; rather, it is

political in a manner that can be historicised within the modern Western history of imperialism and colonialism. Following this, I delve into providing an account of the legal construction of data by modern data governance law. Through such mapping I illustrate that neither can the construction of data as law be understood as innocuous or based in an idea of apolitical fact. Insteads, the category of data as law much like its non-legal construction is also deeply political.

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Part II

Exposing Representationalist Configurations

CHAPTER 3

DATA WITHIN THE NON-LAW

"…I am not your field, your crowd, your history,
Your help, your guilt, medallions of your victory…" [1]

3.1. Data in the Modern Scientific Economy

The construction of data within the modern legal form is marked by its production both as a legal and as non-legal artefact. In this, modern law has always been aware of data not merely as a production of scientific processes but also as an important factor in the functioning of modern economy. Modern law's construction of data within the non-legal has accordingly been informed by its significance as a scientific and economic resource. With the rise of computing technologies in the 20th century, this relationship of data with the scientific- and technologically-produced modern economy has become even more pronounced. As media scholar Wendy Chun writes, "*Historically, computers, human and mechanical, have been central to the management and creation of populations, political economy, and apparatuses of security. Without them, there could be no statistical analysis of populations: from the processing of census to bioinformatics, from surveys that drive consumer desire to social security databases. Without them, there would be no government, no corporations, no schools,*

[1] Abhay Flavian Xaxa, 'I am not your data' (2011) <https://www.roundtableindia.co.in/i-am-not-your-data-nor-am-i-your-vote-bank-in-memoriam-sociologist-and-activist-abhay-xaxa-2/> accessed 19 February 2021

no global marketplace or, at the very least, they would be difficult to operate."[2] In all these applications of computing, data, its creation, deployment, usage and multiplication is indispensable. The history of computing and data technologies today is thus intimately intertwined with the history of data. These histories play an important role in modern data governance law's construction of data as a 'non-legal' concept or within the 'non-law.'

In this context, the construction of data within the non-law needs to be understood as part of the Western cultural archive. Given this, the non-law is produced not only by the law as culture but in fact *co-produced* by the law with other cultural practices of Western society, science, economy, and political institutions like the State. In this Chapter, I use this co-productive approach to map modern legal form's co-production of data within the non-law. In doing this, I however limit my focus to the entanglements of science and the political economy of modern Western Europe. In other words, the agenda of the present Chapter is to outline the co-production of data as non-law within the modern legal form by providing an account of the emergence of data in the modern scientific economy engineered as part of the Western cultural archive. This account reveals that the construction of data as a resource is a defining feature of modern data governance law's understanding of data as non-law. Additionally, that such construction of data as resource is not apolitical; rather, it creates definitive hierarchical and exploitative relationships of power.

Critically analysing representationalism aids us in mapping the non-legal construction of data as resource by outlining these aforementioned relationships of power. Since data as non-law is constituted within the Western cultural archive, and representationalism is foundational to said cultural archive, it is apparent that

[2] Wendy Chun, *Programmed Visions: Software and Memory* (MIT Press 2011) 7

representationalism affects how data is conceptualised within the non-law. The fundamental understanding of data as representation in Western culture is a testament to this relationship between data and representationalism. How does the understanding of data as representation affect the scientific political economy in general and the contemporary data economy in particular? What kinds of power relations does it shape? In its mapping of data as non-law, the present Chapter foregrounds these questions. To address these questions, it outlines a genealogy of data as a non-legal concept, starting from the intersections of early modern science and political economy in the 17th century until the 1970s when modern data governance law began to be shaped at the European level in context of the EU. This mapping is undertaken through the critical analysis of representationalism as outlined in Chapter 2. Through this genealogical mapping, the assumptions about data as constructed within the non-law of data governance are highlighted.

In undertaking this mapping, I propose that the construction of data within the non-law is characterised by three features, which all have political implications. These are: First, the construction of data as a resourcing instrument; second, the constitution of data as a number; and finally, the construction of data as a resource. Accordingly, using the analytic of representationalism, the next section draws upon the history of early modern Western science to illustrate how data has been deployed within the political economy to naturalise and construct more-than-human entities as 'natural,' thus depoliticising them and allowing for their exploitation. Thereafter I trace how data within the non-law has simultaneously been co-produced as a number since and the political implications of the same. Drawing upon these two formulations of data, the last section maps how data came to be understood as a resource within the contemporary scientific economy and within the non-law of data governance. In doing this, I propose that a twofold naturalisation process has been essential to the construction of data as a

resource within the non-law, and additionally that such naturalisation is political. An account of Taylorist practices of data along with later cybernetic ideas of social organisation are used to illustrate the significance of this twofold process of naturalisation to construct data as a resource within the non-law.

The understanding of data as a resource has been recognised to be widespread within non-legal understandings of data.[3] My argument in this Chapter is that there is a deeper need to understand the political implications of co-production of data as a resource within the non-law of the legal form of data governance. To make this argument I propose first, that the non-legal understanding of data as resource is built upon the idea of data as a resourcing instrument and as a number. And second, that these assumptions about data within the non-law are not innocent. Rather through its reification of data as a depoliticised epistemological artefact, the modern legal form co-produces representationalist assumptions about data within the non-law. Lastly, my argument in this Chapter also illustrates that representationalist assumptions about data and exploitative power relationships in the modern scientific political economy are inherently linked.

3.2. Data as Resourcing Instrument

This section argues that data within the non-law of the modern legal form is co-produced as a resourcing instrument through the entanglements of science and economy. By this, I mean that data is deployed as a mechanism to instil a category of 'Nature' which is constructed as a resource from which knowledge may be

[3] *See* for instance, Nick Couldry and Jun Yu, 'Deconstructing datafication's brave new world' (2018) 20(12) New Media & Society 4473; danah boyd and Kate Crawford, 'Critical Questions for Big Data: Provocations for a cultural, technological, and scholarly phenomenon' (2012) 15(5) Information, Communication & Society 662

extracted. As will be seen, representationalist assumptions about data play a key role in the construction of data as a resourcing instrument. The hierarchy between the observer and the observed, which is central to representationalist accounts of data has far-reaching political implications not just for human society but also for the environment. The constitution of the human observer in the Western cultural archive often demands the construction of what it observes as the non-human or as the *natural* observed. In this manner, the category of Nature is created by divorcing the not-human from the Western Self and binding it within binary opposition as the Other. Because of the hierarchical relationship that representationalism instates between the Human observer and the Natural observed, knowledge flows from Nature as the observed to the Human as observer. Here, the Human and Human *culture* plays the active, agential role in knowledge-making in contrast with Nature, which is rendered passive and depoliticised i.e., without power or agency.

The emergence of the scientific method of representation or knowledge-making in early modern history is characterised by these representationalist hierarchies between Human and Nature across different and opposing traditions of scientific thought. So for instance, 17th century French philosopher René Descartes, a foundational figure in the development of modern scientific method, argued in his Sixth Discourse on Method that "*coercing, torturing, operating on the body of Nature….is not torture*" because "*Nature's body is an unfeeling, soulless mechanism.*"[4] This mechanistic formulation of Nature as unfeeling and passive observed is necessary for Descartes formulation of Humans as the active producers of knowledge, thereby as "*Masters and Possessors of Nature.*"[5] It has been illustrated that the Cartesian mind/body binary opposition that lies at the core of

[4] René Descartes, *Discourse on method and the meditations* (Penguin 1978) 78
[5] *Ibid.*

representationalist thought and which still remains widely dominant, is enacted through the examination of for instance, animals as objects.[6] Similarly, the influential English philosopher and statesman Francis Bacon posited an epistemology that could not be realised without constructing the Human-culture/Nature binary and relegating nature to the passive position of the observed.[7] In a statement which would engage dominant sympathies even today, Bacon argues that the purpose of Human society is the acquisition of an understanding of Nature through "*The Knowledge of Causes, and Secrett Motions of Things, and the Enlarging of the bounds of the Humane Empire, to the Effectiving to all Things possible*."[8] Here, Human and Human culture become the active observer or observer of Nature, with the latter constituted as the passive observed, enforcing representationalist thought onto the body of the world. Representationalist ontological hierarchies between the observer and the observed are thus thrust upon the material world. Moreover, through the production of such knowledge, Nature as the observed becomes subjugated to the Human observer's empire.

Historians of science have illustrated that this formulation of Nature as passive within early modern scientific thought in Western Europe happened parallel to the large-scale subjugation of women in Europe in the early modern period.[9] The metaphor of woman and feminised adjectives were often used to describe the non-human in the work of early scientific scholars like Bacon; thereby constructing Nature as female in opposition to the masculinised Human.[10] Such pre-existing or prior boundaries and hierarchies between man/woman could help

[6] Nicole Graham, *Lawscape: Property, Environment, Law* (Routledge 2011) 30
[7] *Supra* n. 6, 29
[8] Francis Bacon, *The new Atlantis* [1626] (CUP 1990) 34-35. See also, *Ibid.;* Peter Linebaugh & Markus Rediker, *The Many-headed Hydra: Sailors, Slaves, Commoners, and the Hidden History of the Revolutionary Atlantic* (Beacon Press 2000) 37-41, 136
[9] Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (Harper 1980) 42-51; 127-134. *See* also generally, Silvia Federici, *Caliban and the Witch: Women, the body, and Primitive Accumulation* (AK Press 2004)
[10] Merchant (1990), *Supra* n. 9

transport the hierarchy through centuries of representational practice in societies in Europe and elsewhere that practised this gendered hierarchy.[11] Consequently, the concept of Nature explained through the metaphor of woman rendered the scientific representation of Nature as passive, observed, and inferior in comparison with the Human observer extremely effective both within scientific circles and from a larger cultural perspective.[12] Such construction of Nature as feminine in opposition to Human dominates popular culture even today.

A historical mapping of representationalism in modern scientific thought thus reveals two meanings of the word 'nature.' One, the idea of the knowledge of Nature being the knowledge of that which is not-human, or that which lies outside of Human culture and society. This meaning speaks to the distinctions made between the Human observer and the observed Nature. Second, the idea of Nature as apolitical i.e., passive, without power or agency. To naturalise means also to depoliticise. This meaning speaks to the hierarchy between the Human observer and the observed Nature once the distinctions between the two have been established.

Unlike the representationalist assumption of separation between ontology and epistemology, the emergence of the modern scientific method was thus not a purely epistemological practice: rather, it was closely tied to creating ontological manipulations. The conceptual construction of the Human(Culture)/Nature distinction that was needed for the enunciation of 'scientific discoveries' or for scientific representation/data was not exclusively a matter of discourse and

[11] Hélène Cixous & Catherine Clément, *The Newly Born Woman* (University of Minnesota Press 1986) 63

[12] On the use of metaphors for knowledge production and meaning-making in Western culture, see generally Paul Ricoeur, *The Rule of Metaphor: The Creation of Meaning in Language* (Routledge 1977)

knowledge.[13] Rather, it was intimately entangled with the material-spiritual project of domination of Earth and its peoples in colonial contexts within as well as outside western Europe. Bacon's iconic pronouncement of knowledge as power is a clear indication of both the lack of innocence or neutrality of scientific knowledge, and the strong connections of epistemological conceptualisation and practice of modern science with practices of political domination in the so-called ontological sphere. In this regard, the scientific method has been closely intertwined with the creation of the Human empire.[14]

The centrality of knowledge-making practices like scientific representation in imperial projects of exploitation is illustrated most clearly when we examine actual practices of data 'collection' about Nature. Data collection about Nature in European colonies around the world played an integral role in consolidation of imperial domination. In this context, postcolonial science studies scholar Kavita Philip has mapped the deployment of scientific data gathering by anthropologists and ethnographers in the forests of Malabar Hills in colonial southern India to illustrate how such survey data was used to convert forests and its Indigenous people into *resources* for the British empire in the 19th century.[15] The Malabar forests were home to many Indigenous populations, who were racialised and described as lacking in Human culture on account of their lack of agricultural practice by colonial ethnographers and administrators.[16] This opened Indigenous peoples living in these forests to be classified as Nature alongside

[13] *See* for instance, Bacon (1990), *Supra* n. 8. For a broader discussion on this point, see also Graham (2011), *Supra* n. 6, 58-81

[14] *Supra* n. 8. The notion of the 'Human' here is not neutral but a stand-in for a particular kind of racialised, gendered, class-coded human, particularly the white male property holder, see *infra* n. 32. In addition, the concept of the empire itself (even if inclusively 'human') is problematic as it necessarily creates, presumes, and normalises a relationship of subjugation of Nature by Human.

[15] Kavita Philip, *Civilising Natures: Race Resources, and Modernity in Colonial South India* (Rutgers University Press 2004), 99-102

[16] *Supra* n. 15, 104-105, 109-110

forest trees and animals, which implied them being rendered as the passive observed and being cast as inferior to the colonial anthropologists and ethnographers constituted by Human observers deploying Western scientific methods. Accordingly along with the study of plants and animals in these forests, data about these Indigenous peoples was collected as well as part of the colonial knowledge-making machinery that aimed to study Nature in order to ascertain its use for the colonial enterprise.[17] Philip describes the rationale presented by anthropologists to promote their young discipline in Britain as following: "*self-interest required Britain to act to preserve traditional cultures, for in those tropical areas that were unsuitable for European settlement, areas that constituted a considerable portion of the Empire and housed those backward societies particularly vulnerable to disintegration, peoples could not serve as labourers in the economic enterprises of Empire unless their cultures remained viable.*"[18]

Western colonial anthropology thus had closer linkages to Natural history than the study of Human culture or society.[19] The study of Indigenous cultures as part of Nature as opposed to Human culture, in order to understand how such Nature may be used as a labour resource for the colonial empire crucially reveals the politics implicated in ethnographic data collection about said Nature. Philip illustrates how the making of ethnographic data functioned to transform political issues of European imperial domination to depoliticised administrative issues of Natural resource management.[20] She notes, "*By naturalising rather than politicising tribal practices, a scientized system of knowledge was developed whereby conflicts over different modes of utilisation of forests were recast in terms of scientific (inherently progressive) systems of knowledge versus unscientific (inherently backward) systems of resource use.*" [21]

[17] *Ibid.*
[18] *Supra* n. 15, 102
[19] *Supra* n. 15, 101
[20] *Supra* n. 15, 102-105
[21] *Supra* n. 18

Ethnographic data collection thus served to *naturalise* Malabar forests and its inhabitants viz., construct them as passive observed and therefore, apolitical to be used as resources for the active observer's 'Human empire.'[22]

Through this process, Nature in Malabar Hills— plants, forests, animals, *and* Indigenous peoples— were constructed as resources for exploitation by the British empire. Here we see not just an anthropocentric but also a racialised logic in action. In their work on data technologies and automation, Neda Atanasoski and Kalindi Vora describe how data technologies are conceptualised by racial logics of categorisation, differentiation, incorporation, and elimination, which create hierarchies between the white-coded bodies and people of colour.[23] A similar racialised hierarchy can be discerned in the construction of data itself, which as described above is created through the category of the Human. In elevation of this category of Human above the category of Nature, multiple human and unhuman entanglements of agency, which could be attributed to the latter category, are erased.

Since the "*establishment of a scientific regime of national resource management was dependent on a specific kind of ethnographic knowledge*" that could "*translate the knowledge of natives into systems of documenting and controlling tribal populations,"*[24] we see here the appropriation of knowledge by the observer or Western scientists from the observed Indigenous populations through the process described by Linda Tuhiwai Smith. However, because the observed within this representationalist epistemic framework is naturalised and depoliticised, such ethnographic data collection is not seen as politically-charged appropriation, but rather as innocent

[22] Bacon (1990), *Supra* n. 8, 34-35; *Supra* n. 6, 29
[23] Neda Atanasoski & Kalindi Vora, *Surrogate Humanity: Race, Robots, and the Politics of Technological Futures* (Duke University Press 2019) 5
[24] *Supra* n. 18

and objective knowledge creation about Natural *resources* meant for Human use. Scientific representation thus becomes a process that enables one "*principally to use nature for the elevation and meaningfulness of humanity*."[25] This meaningfulness is derived not just by conceptualising the existence of Nature for Human sake in the epistemological space, but also by materially exploiting Nature as a resource for the Human in the ontological sphere. These two aspects are closely linked and reinforce each other.

Feminist urban geographer Zoë Soufoulis has termed such representationalist production of knowledge/data through scientific and technical paradigms which converts the observed into a resource to be materially used by the observer, as 'resourcing.'[26] In other words, scientific representation through data collection becomes an instrument for resourcing. Synthesising Soufoulis's framework of resourcing with Linda Tuhiwai Smith's observations for the critical representationalist lens here, *resourcing should be understood as the process of erasing the agency of the observed in order to constitute it as a passive entity that may be used as a resource for the purposes of the observer or the observer community*. In this sense, the commodification of Nature is a part of the practice of resourcing insofar as it erases the observed's (here, unhuman) agency; but is not synonymous with resourcing, which may also include uncommodified instances of resourcing. In this sense, the technique of resourcing through knowledge production perhaps has a longer history in Western culture than just the history of capitalism. Nevertheless, for the purposes of this book, I focus upon the construction and use of data in the economic sphere constituted by capitalism.

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[25] *Supra* n. 6, 30-32

[26] Zoë Sofoulis, *Through the Lumen: Frankenstein and the Optics of Re-origination* (1988) Ph.D. thesis, University of California Santa Cruz. *See* also, Donna Haraway, 'Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective' (1988) 40(3) Feminist Studies 575, 592; Zoë Sofoulis, 'The Cyborg, its Manifesto, and their Relevance Today: Some Reflections' (2015) 6(2) Platform: Journal of Media and Communication 8, 15

Ethnographic data collection in the Malabar Hills is but one example in the long European history of resourcing the material world through the deployment of epistemic projects.[27] Neither is this history limited only to the colonial period and to the geographical boundaries of Europe. Tracing a genealogy of data sciences, historian Manan Ahmed Asif has illustrated how data collection through philological practices of white European settlers documenting Indigenous populations in North America in the 19th century and later, the evolution of disciplines like Area Studies in the United States during the Cold War-era, enabled the resourcing of land and cultures both within and outside USA for the militarised US-American empire.[28]

Donna Haraway identifies such practices of resourcing as long-standing within the Western cultural archive, observing that they "*derive partly from the analytic tradition, deeply indebted to Artistotle and to the transformative history of "White Capitalist Patriarchy" [...] that turns everything into a resource for appropriation, in which an object of knowledge is finally itself only matter for the seminal power, the act of the knower."*[29] Here,

[27] For examples of other sites where data was used for resourcing the land and its peoples, *see* U. Kalpagam, *Rule by Numbers: Governmentality in Colonial India* (Rowman & Littlefield 2014); Jacqueline Wernimont, *Numbered Lives: Life and Death in Quantum Media* (MIT Press 2019); Theodore Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton University Press 1995); Dick Kooiman, 'The Strength of Numbers: Enumerating Communities in India's Princely States' 20(1) South Asia: Journal of South Asian Studies 81; Peter Miller & Ted O' Leary, 'Governing the Calculable Person' in Anthony G. Hopwood & Peter Miller (eds.), *Accounting as Social and Institutional Practice* (CUP 1994). For discussion how epistemic projects generally are used to advance the colonial and neocolonial domination in Western cultures, see Homi K. Bhabha, *The Location of Culture* (Routledge 1994) 199-215; Edward W. Said, *Orientalism: Western Conceptions of the Orient* (Penguin 1995); Gayatri Chakravorty Spivak, 'Poststructuralism, Marginality, Postcoloniality, and Value' in Peter Collier and Helga Geyer-Ryan (eds.) *Literary Theory Today* (Polity Press 1990); Gurminder K. Bhambra, 'Postcolonial and Decolonial Dialogues' 17(2) Decoloniality, Knowledges and Aesthetics 115; Walter D. Mignolo, 'The Geopolitics of Knowledge and the Colonial Difference' (2000) 101(1) South Atlantic Quarterly 57

[28] Manan Ahmed Asif, 'Technologies of Power—From Area Studies to Data Sciences' (2019) 5 Spheres: Journal for Digital Cultures <https://spheres-journal.org/contribution/technologies-of-power-from-area-studies-to-data-sciences/> accessed 19 July 2021. *See* also, Noopur Raval, 'An Agenda for Decolonising Data Science' (2019) 5 Spheres: Journal for Digital Cultures <http://spheres-journal.org/an-agenda-for-decolonizing-data-science/> accessed 19 July 2021

[29] Haraway (1988) *Supra* n. 26, 592

the knower may be understood as the observer of our representationalist framework. Analogous to the appropriation of biological sex as raw material for the cultural production of gender, data as knowledge thus becomes the means through which Nature is positioned as "*the raw material of culture, appropriated, preserved, enslaved, exhaled, or otherwise made flexible for disposal by culture in the logic of colonial capitalism.*"[30] Through the act of data gathering and knowledge production, the observed 'Other' of the representationalist epistemic project (land, plant, colonised people, other cultures) thus becomes objectified and naturalised as a resource to be exploited by the observer 'Self.'

The objectification and mutilation of othered bodies cannot occur without inflicting deep self-mutilation upon one's own body. The knife cuts both ways. For the naturalisation or depoliticisation of land and bodies as resource did not occur only in contexts of othered land and peoples, but also in the context of Western Europe itself. This took two forms: First, the naturalisation of Earth in Western Europe (as in other colonial contexts) as resource and its legalisation as property; and second, the naturalisation of the human bodies of Earth as distinct from Human mind or culture. The naturalisation of Earth in Western Europe in the early modern period through enclosure of land and the modern idea of property is well-documented.[31] In the same time period, the idea that the modern scientist was a universal subject, differentiated only incidentally by class, gender, race, nationality, or religion, but grounded within the universal category of so-

[30] *Ibid.*

[31] See for instance, Brenna Bhandar, *Colonial Lives of Property: Law, Land, and Racial Regimes of Ownership* (Duke University Press 2018); Alain Pottage, 'Evidencing Ownership' in Susan Bright & John Dewar (eds.), *Land Law: Themes and Perspectives* (OUP 1998); Alain Pottage, 'The Measure of Land' 53(2) Modern Law Review 259; Gregory S. Alexander, 'Critical Land Law' in Susan Bright & John Dewar (eds.), *Land Law: Themes and Perspectives* (OUP 1998); John C. Weaver, *The Great Land Rush and the Making of the Modern World 1650-1900* (McGill-Queen's University Press 2006); David Harvey, *Justice, Nature, and the Geography of Difference* (Wiley-Blackwell 2000). See also, *supra* n. 6; Carol M. Rose, *Property and Persuasion: Essays on the History, Theory, and Rhetoric of Ownership* (Routledge 1995)

called 'human' or 'mankind,' began to take hold.[32] Modern science thus constituted an important arena where the category of Human was constructed, reinforcing the category of Nature, and paving way for what we know today as Humanism.[33]

Under this humanist turn, on the one hand, it was still fiercely debated whether colonised populations could possibly be categorised as Human.[34] On the other hand, European populations which did fall under the category of Human, were divorced from their bodies by positing the idea of 'human nature' or 'nature of mankind.' Considering that Human and Nature were presented as binary opposites, the very idea of 'human nature' might seem an oxymoron. However in 17th century science, the concept of human nature was necessary in order to construe science as a universal project that was independent from the particular politics of the day.[35] 'Human nature' in this context referred to the *natural* human *parts* that were properly the topics of the study of science viz., the material human body, which was understood to be a part of Nature.[36] Popularised as Cartesian philosophy, but also rooted in other parallel scientific developments like the

[32] Mary Poovey, *A History of the Modern Fact* (University of Chicago Press 1998) 113

[33] Alexander Weheliye, *Habeas Viscus: Racialising Assemblages, Biopolitics, and Black Feminist Theories of the Human* (Duke University Press 2014). *See* also, Walter D. Mignolo, 'Who Speaks for the "Human" in Human Rights' (2009) 5(1) Hispanic Issues On line: Human Rights in Latin American and Iberian Cultures 7 <https://conservancy.umn.edu/handle/11299/182855> accessed 5 July 2021. *See* also, Nelson Maldonado-Torres, 'On the Coloniality of Human Rights' (2017) 114 Revista Crítica de Ciências Sociais 117; Upendra Baxi, *The Future of Human Rights* (OUP 2012)

[34] In this regard see for example the Valladolid Debates and its lasting influence on the development of contemporary racially-coded international politics in Ramon Blanco and Ana Carolina Teixeira Delgado, 'Problematising the Ultimate Other of Modernity: The Crystallisation of Coloniality in International Politics' (2019) 41(3) Contexto Internacional 599. *See* also, Edward J. Brennan, 'The Ideology of Imperialism: Spanish Debates Regarding the Conquest of America, 1511-51: A Critical Outline and Bibliographical Introduction' (1958) 47(185) Studies: An Irish Quarterly Review 66

[35] *Supra* n. 32, 110-112

[36] *Supra* n. 32, 113-114

founding of the Royal Society in England in 1660,[37] the separation of the human mind from the human body and the naturalisation of the latter was essentially mutilation inflicted by Western European peoples upon themselves. In other words, this separation forces much wilful and unaccountable violence they (and increasingly, we, the postcolonial peoples through our Humanisation) have needed to heap upon their/our own bodies every day in order to consolidate their/our positions of superiority as Human against Nature.

Along with the resourcing of Nature (that included not just the Earth but also colonised peoples), this mind/body separation served the crucial function of depoliticised resourcing of even Human *bodies* as Nature through the generation of data about human bodies and the corresponding construction of scientific knowledge as universal, neutral and independent of said bodies. It also explains why the fantasies of our bodies as instruments or *resources* for our lives, and an obsession with replacing inefficient mortal human bodies for efficient and immortal machinic bodies, continues to have such deep hold within Western imaginations to this date.[38] Naturalisation of White-coded European bodies on the one hand and naturalisation of colonised peoples, cultures, and Earth on the other imprint two sides of the same resourcing coin minted by what Bacon called the 'Humane Empire'.[39] These processes of resourcing and depoliticisation of both human bodies and the Earth for the needs of myriad imperial projects that all feed into the project of the Human(e) Empire speak to a dematerialised or abstract idea of human, delinked from its body and Earth and situated universally— everywhere and nowhere.

[37] *Supra* n. 32, 118-120
[38] *Supra* n. 23
[39] See also on the relationship between empire and resourcing, Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (Penguin 2018)

The crucial point to note here is that the construction of data as a resourcing instrument under representationalism depends upon the erasure of the agency of the observed. Without the erasure of such agency, the economic exploitation of the observed as a resource, of which Nature is one instance, would not be possible. Historically, said category of Nature has included both unhuman and racialised human bodies, and has resulted in the erasure of entangled agencies of Earth with people coded as people-of-colour (as the observed) for the elevation of White-coded people's agency (as the observer) under the category of Human. This function of knowledge and data as a resourcing instrument which elevates the agency of the observer while erasing that of the observed serves as a central component of colonialism.

In recent years, studies have emerged on the theme of 'data colonialism' in the Western academy which do not address this process of resourcing and its implied hierarchy and erasure of entangled human and unhuman agencies of the observed.[40] Rather these studies reify the Nature/Culture divide by reinforcing the separation of the mind/body, thus reproducing the separation of ontology from epistemology[41] as well as the hierarchy of the observer over the observed;

[40] Nick Couldry & Ulises A. Mejias, 'Data Colonialism: Rethinking Big Data's Relation to the Contemporary Subject' (2019) 20(4) Television & New Media 336; Nick Couldry & Ulises A. Mejias, *The Costs of Connection: How Data is Colonising Human Life and Appropriating it for Capitalism* (Stanford University Press 2019); Jim Thatcher, David O' Sullivan & Dillon Mahmoudi, 'Data colonialism through accumulation by dispossession: New metaphors for daily data' (2016) 34(6) Environment and Planning D: Society and Space 990; Nick Couldry & Ulises A. Mejias, 'Making data colonialism liveable: how might data's social order be regulated?' (2019) 8(2) Internet Policy Review 1

[41] Monika Halkort, 'On the Coloniality of Data Relations: Revisiting Data Colonialism as Research Paradigm' (2019) DATACTIVE Blog <https://data-activism.net/2019/10/bigdatasur-on-the-coloniality-of-data-relations-revisiting-data-colonialism-as-research-paradigm-12/> accessed 21 May 2020. *See* also, Monika Halkort, 'Decolonising Data Relations: On the Moral Economy of Data Sharing in Palestinian Refugee Camps' 44(3) Canadian Journal of Communication 317. For further critique of Couldry and Mejias' formulation of 'data colonialism,' *see* Maria Soledad Segura & Silvio Waisboard, 'Between Data Capitalism and Data Citizenship' (2019) 20(4) Television & New Media 412

or, representationalism. Through the mapping of data as a resourcing instrument, I have however distinguished my genealogical account of the exploitative power relations inhered by data from such accounts of data colonialism and have identified significantly different problematic power relationships from those offered by the aforementioned representationalist accounts of data colonialism.

3.3. Data as Number

So far, I have mapped the unequal power relations inhered by data as a resourcing instrument within the Western cultural archive. But data in contemporary world is characterised by not just by its function as a resourcing instrument but also through its measurable or numerical character. What is then the relationship between the use of data as an instrument for resourcing and the understanding of data as number? What does such a relationship tell us about power relations in contemporary data and data-driven economies? The present section maps how representationalist practices of Western imperialism that used data as a resourcing instrument were consolidated and commercialised as part of the modern political economy over the 18th and 19th centuries through the processes of quantification. Conceptualising data as a number, that is, as a measure, played a central role here.

The emergence of data as number is commonly illustrated by statistical practices that became popular for State administration in Western European in the 18th and 19th centuries. However, even before statistical land surveys and census measures became common in European national administrations, they were widely deployed in European colonies across the world. For instance, the Spanish State had already conducted a census of Peru in 1548 and of its North American colonies in 1576— almost two centuries before they became commonplace

within Europe.[42] France conducted its first census in colonial Quebec in the 1660s.[43] In the 18th century, the newly independent United States continued and extended the colonial practice of census westward as part of its imperial expansion.[44] The British State instituted extensive ethnographic, land, and statistical survey in its colonial territories in India, which later became a major centre for both theoretical and practical statistical bureaucracy.[45] Even within Europe, Ireland was completely surveyed for land, buildings, people, and cattle through the Down Survey in the 1650s that was engineered by English statesman William Petty as part of the British imperial project.[46] As discussed earlier, this crucial epistemological embedding of colonial administration in representationalist data practice illustrates the latter's centrality to violent ontological processes of resourcing of so-called Nature, or of colonised land and its peoples.

Like other practices of data and knowledge rooted in the Western cultural archive, modern statistical practices also emerged from a representationalist worldview. But unlike other epistemological practices, statistical practices were primarily concerned with enumeration. What was this allure of numbers? In her work tracing the history of the modern fact through developments in Britain, Mary Poovey shows that in the late 17th century, numbers became indispensable to both early modern scientists of the Royal Society and colonial administrators like Petty to prove their *disinterest* in the knowledge they were producing.[47] Performing such disinterest was vital not just to disavow personal interests in matters of colonial expansion, but also in order to produce universalised 'consensus-

[42] Ian Hacking, *The Taming of Chance* (CUP 2014) 17
[43] *Ibid.*
[44] *Ibid.*
[45] *Ibid. See* also, Kalpagam (2014), *Supra* n. 27
[46] *Supra* n. 32, 117
[47] *Supra* n. 32, 115, 120-138

generating' knowledges in a period marked by internal warring and political disagreements amongst multiple social factions within Western Europe.[48]

Against this background, numbers served as symbols of political detachment and neutrality. Poovey attributes such attitudes towards numbers to their medieval associations with the practices of mercantile accounting[49]: The development of double-entry bookkeeping in 14th century Europe deployed an aesthetics of transactional record-keeping that combined symmetrical tabulation with numerical representation. This particular aesthetic was originally aimed at protecting merchants from accusations of usury by the medieval Church, which in general considered the mercantile class with suspicion.[50] By the late 17th century however, merchants had risen in social status. As a result of this and their practice of numerical record-keeping, numbers began to be seen as a mark of their honest or genteel disposition, particularly by members of the Royal Society, which had recently come into being.[51] In their process of establishing the tenets of scientific method, the Royal Society relied on the social credibility of merchants to enforce an understanding of numbers as transparent.[52]

Said transparency of numbers was fortified by distinguishing numerical representations from what was seen as linguistic obfuscation. So for instance, member Thomas Sprat in his 1667 History of the Royal Society of London, writes that the "*vicious abundance of Phrase, this trick of Metaphors, this volubility of Tongue*" is one of the worst abuses of his time, so much so that "*it may be plac'd amongst those general mischiefs: such, as the dissention of Christian Princes, the want of*

[48] *Ibid.*
[49] *Supra* n. 32, 7-20, 97-119
[50] *Supra* n. 32, 38, 351
[51] *Supra* n. 32, 116
[52] *Supra* n. 32, 29, 64, 101

practice in Religion, and the like (sic)*,"* [53] In contrast to such extravagance of language and the uncertainties of interpretation, numbers seemed to provide a transparent window to the world. [54] In this, the language expected from Royal Society members was intended to serve as an approximation of the language and numerical representations practised by merchants, viz. "*close, naked, natural way of speaking.*"[55] Matters of styles or aesthetics thus played a salient role in the making of scientific data, while imparting it an aura of objective disinterest.

This association of numerical representations with disinterestedness went a long way in creating the aura of objectivity about data while simultaneously deploying them for the pursuit of political interests. So for example, the scientific community of the Royal Society reinforced the understanding of data as numerical representations as objective, transparent or neutral; and this was subsequently deployed by prominent Royal Society member, William Petty in order to mask his own interest in his colonial holdings in Ireland.[56] He did this by making a case for governmental record-keeping about land ownership, domestic consumption, production, trade, and population at a national level,[57] primarily directed towards reforming taxation policy. In Petty's time, land taxes in Ireland were collected by English settlers through a practice known as tax farming, which enabled a decentralised and locally-embedded system of land assessment and tax collection. In 1662, Petty however, proposed that it would be in the British sovereign interest for the central government to establish both in Britain and its colonial territories, a land registry capable of securing private titles.

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[53] Thomas Sprat, *History of the Royal-Society of London, for the Improving of Natural Knowledge Sprat* (T.R. 1667) 109, 112 <https://quod.lib.umich.edu/e/eebo/A61158.0001.001> accessed 12 July 2021, also cited in *Supra* n. 32, 118

[54] *Supra* n. 52

[55] *Supra* n. 32, 118

[56] Appointed as a Royal Society member, William Petty was also widely acknowledged in early modern Europe as the founder of political economy studies, *supra* n. 21, 120

[57] *Supra* n. 32, 126

This was proposed to be achieved by conducting a survey of the land to determine its exact value; and based on this knowledge of land, a 'regular and equitable tax' could be levied; a system which would have benefited him greatly with respect to his Irish holdings.[58] In this context, these new proposals for tax reform allowed Petty to present on the one hand, his own interest in such reform as the *national* interest of Britain, and on the other, also use the ostensible transparency of numerical data in land valuation to reinforce his own disinterestedness in proposed taxation policies. Petty thus sought to efface his own interests by using nationally-oriented numerical aesthetics, which not only allowed for him to present the proposed reforms in a neutral, *natural* or depoliticised manner, but also marked a rather novel approach to governance in a context that was fraught with politically-charged battles.[59]

For while in the 17th century, the British government did keep records of custom duties for revenue purposes; but neither the British nor other States in Western Europe sought data concerning domestic production, labour power, or internal trade.[60] Against this historical background, Petty proposed two ideas that hold deep influence even today: First, the idea that national wealth derived from domestic production; which referred to production both within European sovereign States and their colonies. And second, that effective State policy and governance could be formulated on the basis of *accurate* data, which referred to the numerically-induced transparency of such data.[61] And because national wealth began to be equated with domestic labour, land, and productivity, it became imminent to *quantify* these processes under Petty's 'political arithmetic' for transparent governance.[62] In Poovey's words, "*Petty helped forge the relationship*

[58] *Supra* n. 32, 125
[59] *Ibid.*
[60] *Supra* n. 57
[61] *Supra* n. 32, 127
[62] *Supra* n. 42, 16-25, 31-45

between numbers and impartiality that has made the modern fact such a crucial instrument for policy making."[63]

Although Petty's ideas about the role of quantified data in national political economy were not immediately successful in Britain, they had a significant impact on governance practices in correspondence with statistical developments in other parts of 18th century Western Europe. Especially in the German-speaking State of Prussia, numerical representation of land and populations as data began to play a crucial role in State governance even as it shaped the statistical culture of the burgeoning Prussian bureaucracy. In this regard, German scientist and mathematician Gottfried Leibniz has been dubbed "*the philosophical godfather of Prussian official statistics.*"[64] Much like Petty a few years prior, Leibniz argued that "*the true measure of the power of a state is its population, and that the state should have a central statistical office in order to know its power.*"[65] On these lines, he formally advocated the institutionalisation of a new central bureau of statistics as part of the Prussian state administration in 1700.[66]

Prussia thus developed into a State that was centred around its statistical bureau. Unlike the British case where a centralised management was numbers was resisted, the Prussian statistical bureau emerged as a resource for all other branches of government.[67] But similar to the developments in Britain, this skill was also presented "*as neutral between parties, as independent of values, as objective.*"[68] Historian Ian Hacking notes that the development of such an institution presupposed that

[63] *Supra* n. 32, 123
[64] *Supra* n. 42, 18
[65] *Ibid.*
[66] *Supra* n. 42, 17
[67] *Supra* n. 42, 29
[68] *Ibid.*

there was "*a new kind of skill, the ability to collect, organise, and digest numerical information about any subject whatsoever*."[69]

In both the Western European cases of Britain and Prussia, the earliest construction of numbers as transparent, objective, and politically disinterest thus functioned to mask the political ends that numbers were deployed to serve. The presentation of numbers as politically neutral helped engineer 'disinterested' support for certain political interests by presenting them as facts or in contemporary terminology, as 'raw data.'

But it was not just political interests in the context of institutional statecraft that quantification veiled. Importantly, numbers also helped obfuscate the more entrenched politics of the form of Western knowledge production through its representationalist cultural archive. I refer here to the politics of the observer/observed relationships, the separation of ontology from epistemology, and the violence of resourcing practices that the deployment of data as number helped naturalise. For instance, the measurement and quantification of land by Petty's Down Survey, along with other epistemic projects about colonised peoples and lands and later, sovereign European lands generated statistical data. Conducted through specialised instruments and expertise in new disciplines like natural history, geography, and anthropology, land-related statistical data multiplied. Along with scientific authority, the apparent neutrality of such numerical representation contributed to invisibilising the oppression of colonial regimes and enclosure movements that were necessary for these epistemic practices. This occurred through the representationalist separation and delinking of the ontological violence inhered in Europe's colonial projects from the epistemological sphere of science and numbers.

[69] *Ibid.*

Apart from the presentation of representationalist systems of data/knowledge production as neutral, numbers also assisted greatly in large-scale projects of resourcing. As both the British and Prussian cases well illustrate, by the 18th century the quantification of land, human labour, and populations, enabled sovereign States in Western Europe to resource Earth and its peoples in both sovereign and colonial geographies for the project of nation-State. Apart from military strength, the state of a nation's political economy emerged an important signifier of sovereign power in this period. As illustrated, Petty's proposal for tax reforms presented the use of land and labour in Britain and its colonies as part of British national productivity; and therefore, as *resources for the British State*. Similarly, in Prussia, Leibniz's positioning of the numerical size of the Prussian population as a mark of the larger might of Prussia over Brandenburg enabled people living in Prussian territories to be *resourced for the Prussian State*. Quantified representations of land and people thus helped create representationalist data/knowledge by deploying mathematical methods for measuring and comparing imperial strength of sovereign States of Western Europe. In other words, the practice of data as number became a crucial historical link in creating large-scale nationalised capitalisms that resourced both sovereign and colonised land and peoples (albeit through distinct processes) as Nature in order to feed the 'Human Empire.'

So far, I have focused on data as resourcing instrument for land and colonised peoples as Nature; but in order to grasp the full extent of the role of these resourcing processes in contemporary data-driven political economies, we need to also understand how sovereign bodies (historically, White-coded European bodies) were quantified and resourced in distinctive ways for nationalised projects of the State. And not least because these oppressive practices of resourcing still abound and are naturalised (depoliticised) in our contemporary 'post'colonial world.

The development of census practices in the colonies and the equation of sovereign State's power to the people residing in its sovereign territories and colonies provided impetus to develop population census practices also within sovereign European territories. The Prussian State led this development with extensive censuses in its sovereign territories in the 18th century,[70] whereby the equation of numbers as accurate and precise representations of ontological relations became naturalised. Most of these numbers however, were guarded as State secrets and not published. It was only in the early 19th century statistical data on censuses began to be published.[71] This period also saw a flood of numbers sweep Europe; both amateur and professional statisticians were involved.[72] Said numbers counted not just the number of people but also various aspects of their lives, like gender, age, birth, death etc.

By the 19th century, the ubiquity of publicly-available statistics rooted in representationalist practices provided the critical technology needed to measure the lives and deaths of these bodies as resources for the sovereign States of Western Europe. In his history of statistical reasoning, Hacking maps how a new statistical subjectivity arose from the widespread measurement of people in this time.[73] These measurements were used to 'discover' patterns of regularity in life, death, and gender relations in society, which much like the study of colonised peoples, Earth, and universe as Nature, were attributed to the idea of 'human nature' discussed previously.[74] In correspondence with Natural Laws of Science, Laws of Society developed based upon these ideas of human Nature: The 'discovery' of statistical laws, notably, the laws of birth and mortality, serve as

[70] *Supra* n. 42, 20-34, 189-196
[71] *Supra* n. 64
[72] *Supra* n. 67
[73] *Supra* n. 42, 119-123, 125-130. *See* also generally, Kalpagam (2014), *Supra* n. 27; Wernimont (2019), *Supra* n. 27; Theodore M. Porter, *The Rise of Statistical Thinking, 1820-1900* (Princeton University Press 2020)
[74] *Supra* n. 42, 38

important examples.[75] Said laws began to play an important role not just in State administration in the colonies for regulation of colonised populations,[76] but also within Western Europe for capitalising on people's lives and deaths through private enterprise, for instance, in the case of life insurance trade.[77] Data production about Human Nature thus enabled resourcing of peoples' bodies in Western Europe for the nationalised political economies, and by extension for the sovereign European nation-States— on similar lines to the resourcing of Earth and colonised peoples. Unlike the resourcing of Earth and colonised peoples however, the racially-coded naturalised bodies of White European citizens were afforded a link to the Human— accessibility to the disembodied yet active observer mind or so-called 'Reason'.[78] Simultaneously, this Reason was denied to the mechanistic and/or emotional constructions of Earth, gendered, and colonised bodies in Western Enlightenment epistemology.[79] In this way, the Earth along with gendered and colonised bodies were limited to the position of the passive observed and consolidating the hierarchies between European and Non-European; between Nature and Human.

Although in markedly distinct ways from Earth and colonised peoples, European citizens were thus also resourced for the same project of nationalised capitalistic empires of the Human. This was achieved through data practices of modern States in the 18th century and statistical practices that found rampant use in 19th century domestic political economy. Parallel to the proliferation of these practices, this period saw the surfacing of a new epistemological movement in Western Europe. This was a science which sought to eschew value-laden theory to seek

[75] *Supra* n. 42, 40
[76] Kalpagam (2014), *Supra* n. 27
[77] Lorraine Daston, *Classical Probability in the Enlightenment* (Princeton University Press 1988) 29-33, 177-179. *See* also, Daniel C.S. Wilson, 'Babbage among the insurers: Big 19th-century data and the public interest' (2019) 31(5) History of the Human Sciences 129
[78] Merchant (1990), *Supra* n. 9
[79] *Ibid.*

'the truth' through rigorous observation of factual data; consolidated into an approach which today is called positivism.[80]

Crucially, positivism distinguished facts from norms, by recognising the former as value-neutral and creating the modern understanding of objectivity.[81] Objectivity was formulated as 'value-free' knowledge best achieved through numerical and statistical data, as opposed to 'value-laden' theory or individual specificities.[82] Objectivity could be achieved by adherence to the scientific method and by activation of the new scientific observer Self that was formed in this period, which allowed the observer to separate 'facts' from their own 'bias' to achieve 'accurate' representations.[83] This influential legacy of positivism can still be observed in 21st century discourse on algorithmic discrimination and fairness that focuses dominantly on developing moral, legal, as well as technological tools for maximising *accuracy* of representation through the *elimination of bias*.[84]

Positivist thought was vastly influential in the genesis of the social sciences, including modern sociology and economics. Similar to the methods of study of Earth, these new disciplines sought to apply "*methods of investigation adopted in physical researchers to the investigation of the phenomenon of society"* attempting to describe human Nature through 'value-free' or positivist facts.[85] As these new

[80] *Supra* n. 42, 76-79
[81] Lorraine Daston & Peter Gallison, *Objectivity* (Zone Books/Princeton University Press 2010) 27-31
[82] *Supra* n. 42, 81-86
[83] *Supra* n. 81
[84] For a critical overview of the discourse of algorithmic discrimination, bias, and fairness, see Seeta Peña Gangadharan & Jędrzej Niklas, 'Decentering technology in discourse on discrimination' (2019) 22(7) Information, Communication & Society 882; Anna Lauren Hoffman, 'Where fairness fails: data, algorithms, and the limits of the antidiscrimination discourse' (2019) 22(7) Information, Communication & Society 900
[85] *Supra* n. 15, 101

disciplines developed, their use of statistical aggregates and averages gradually helped shaped an understanding of normality, normal, and social *norms*.[86] These ideas about social norms eventually came to replace the concept of human Nature while still retaining the naturalised or depoliticised flavour of the same.[87]

Building on older forms of representationalist thought, positivism also assumed the political separation of the observer/observed relationship hierarchy (i.e. ontology) from knowledge (i.e. epistemology) as natural. But it also went a step further— positivism assumed that it was possible for a *scientific* observer to 'discover' knowledge which is free from the observer's own subjective values. In other words, it assumed the existence of pure, value-free or depoliticised knowledge uninformed by human Culture. Such a stance constituted a new form of representationalism, and a new representationalist objectivity. Delinked from the (political) agency of the observer, positivist knowledge thus appeared as apolitical and Natural. Such presentation of data/knowledge as Natural went a long way in constructing data as a resource by the 20th century. The construction of data as a number is thus as political as the construction of data as a resourcing instrument within representationalism. These representationalist assumptions about data that have emerged through the entanglements of science and political economy play a significant role in modern law's understanding of data within the 'non-law.'

3.4. Data as Resource

Apart from its construction as a resourcing instrument and as a number, data within the non-law is additionally characterised by its construction as a resource. Such construction of data as a resource is perhaps most obvious in ongoing legal

[86] *Supra* n. 42, 161-167
[87] *Supra* n. 42, 82-84, 162-168

and policy discourses about data. For instance, the EU Commission's 2020 Strategy for Data lays down that data "*is an essential resource for start-ups and small and medium-sized enterprises (SMEs) in developing products and services. The availability of data is essential for training artificial intelligence systems, with products and services rapidly moving from pattern recognition and insight generation to more sophisticated forecasting techniques and, thus, better decisions.*" (emphasis added) [88] In this manner, the assumption of data as a resource underlies many legal understandings of data. At the same time, such assumption is treated to be a non-legal matter that is congruent with the scientific and economic understandings of data. As sociologists Marion Fourcade and Kieran Healey have pointed out, the understanding of data as a resource finds its foundations within the scientific political economy whereby modern organisations today understand and classify individuals in terms of data and are driven by an imperative to 'collect' as much data as possible.[89] This development of data as a resource has a longer historical trajectory which is shaped by both the understandings of data as a resourcing instrument and data as a number.

In this regard, it should be noted that widespread public availability of statistical studies in the 19th century had already shaped the idea of data as a resource for human society; and constituted the early phase of what would later be understood as the 'data-driven' economy.[90] As exemplified by the discussion so

88 European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee of the Regions on A European Strategy for Data, COM(2020) 66 final, 19 February 2020, §2

89 Marion Fourcade and Kieran Healey, 'Seeing Like a Market' (2017) 15(1) Socio-Economic Review 9

90 Matthew L. Jones, How We Became Instrumentalists (Again): Data Positivism since World War II' (2018) 48(5) Historical Studies in the Natural Sciences 673. *See* also, Soraya de Chadarevian & Theodore M. Porter, 'Introduction: Scrutinising the Data World' (2018) 48(5) Historical Studies in the Natural Sciences 549; Marc Flandreau & Geoffroy Legentilhomme, 'Governing the Computers: The London Stock Exchange, the Institute of Actuaries and the First Digital Revolution (1808-1875)' (2019) Economic History Workshop, Department of Economics, Yale

far, this historicisation is crucial in order to grasp the exploitative character of contemporary political economy of data that stems not just from unequal access to data resources; but crucially also from the representationalist form of data/knowledge production that apprehends the Earth and its beings primarily as resources. As discussed, epistemic practices implicating the production of data have been crucial to these processes of resourcing. Over the last two centuries, however, in addition to being a resourcing instrument, data itself has come to be seen as a resource.

A number of different threads came together to consolidate the contemporary understanding of data as resource— the function of data as a resourcing instrument and as a harbinger of neutral objectivity in the form of the number not least among them. Both these developments foreshadowed the rise of positivist sciences in the 18th and 19th centuries, which created the world as a resource through the instrument of data; while also presenting such knowledge or data as facts and thereby, 'value-free'. Positivism claimed to describe the world 'as-it-is'— claiming for itself an epistemology without affectations of theory, agenda or politics.[91] Inspired by its belief in the transparency of numbers, it aspired to create a body of knowledge of *only* facts, *pure* data— while differentiating them from values. These positivist aspirations significantly influenced many aspects of the political economy. Importantly, they transformed industrial organisation— right from the control of labour and capital for manufacturing to distribution, transportation, and marketing. In all these fields, industrial organisation was transformed through a plethora of new practices that came to be known as the 'scientific management' of industry.

University <https://economics.yale.edu/sites/default/files/governing_the_computers_adans.pdf> accessed 29 June 2021

[91] Linda Tuhiwai Smith, *Decolonising Methodologies: Research and Indigenous Peoples* (Zed Books 1999) 42-43

By the middle of the 19th century, various basic industries like railroads and metalworks were facing issues of productivity fuelled by mismatch between the rate of flow of raw materials into a factory and the rate at which the factory could process them.[92] Given widespread colonial exploitation, the former far exceeded the latter. [93] Such a situation hindered a smooth workflow in industrial manufacturing. Developments in pre-processing in the 1850s and 60s like the standardisation of sizes and processes, the use of interchangeable parts, and integration of inputs and outputs and then later in 1870s and 80s, the development of internal communications control, shop-order systems, and cost control of factories helped to smoothen the industrial workflow. Underlying all these new industrial practices was the concept of scientific management and its corresponding use of data.

The idea of scientific management of industry was popularised by US-American engineer Fredrick Winslow Taylor in the early 20th century. In essence, Taylor's scientific management aimed to "*preprocess the personal idiosyncrasies of workers out of industrial operations"* to create rationalised or efficient methods of processing.[94] This was achieved by 'gathering' or 'collecting' data on worker behaviour and using it to control workers through the time study method that Taylor developed. This consisted of a six step prescription that went as following: "*(1) Find, say 10 to 15 different men….especially skilful in doing the particular work; (2) study the exact series of elementary operations or motions which each of these men uses; (3) study with a stop watch the time required to make each of these elementary movements (4) eliminate all false movements, slow movements, and useless movements; (5) collect into one series the quickest and best*

[92] James R. Beniger, *The Control Revolution: Technological and Economic Origins of the Information Society* (Harvard University Press 1986) 312
[93] *See* for instance, Sayera Irfan Habib, 'Colonial Exploitation and Capital Formation in England in the Early Stages of the Industrial Revolution' (1975) 36 Proceedings of the Indian History Congress XXI
[94] *Supra* n. 92, 313-315

movements; and (6) substitute this new method for the inferior series which were formerly in use."[95]

Here, the paradigm of scientific management involves creating data under a representationalist assumption whereby the researcher is constituted the active observer and the worker as the passive observed. The data sought by the time study is actually *created* by this worker through her act of labouring. Yet, the worker is construed as passive for the purpose of this study. The only entity identified as having an agential/active role in this study is the observer or the scientific researcher. This process of establishing agential hierarchy between the scientific observer and the working-class observed constitutes Steps 1 to 4 of the time study method, whereby similar to earlier examples, data/knowledge of the worker is generated in order to create a hierarchy between the active scientific observer and the passive worker observed, which enables the resourcing of the worker. An exploitative relation of power between observer and observed is thus already established as a basis for the scientifically-managed economy.

Steps 5 and 6 of the time study method however, further complicate the power relation between the observer and the observed. Under Step 5 the researcher/observer, with the aim to establish the quickest and best movements, gathers or 'collects' all the data, as if said data was always there, ready to be taken, and not *generated* specifically by the labouring worker. Such an approach to data owes a lot to the influence of positivism, which presumes the possibility of pure facts without the intervention of active beings/subjectivities that tend to taint said fact with theoretical or value assumptions. Through the act of such 'collection', data is made to appear as natural, given, self-existing. In other words, through the process of so-called collection, the power relations between the

[95] Frederick Winslow Taylor, 'The Principles of Scientific Management' (Good Press 2019); also cited in *supra* n. 92, 294

observer and observed that were indispensable to generation of said data are naturalised; and data itself is depoliticised.

In Step 6, the most efficient set of this 'collected' data is then put to a new use viz., better control of the worker-observed that generated said data. However, by accounting for neither the observed's role in data generation nor the observer/observed hierarchy of representationalism under which said data is produced, such data is constructed as 'pure,' 'raw' and untainted by subjectivity or value-judgments of the observer; and therefore, as natural. Deprived of their agency, the observed is deemed to have no value-generating capacity in such production of data. Construed thus as naturally-occurring, data can then be easily plucked away from the ontological relations of its production to be used as a neutral tool to discipline workers. Such disciplining whereby data is used as a resource is distinct from the process whereby data acts as a resourcing instrument: As a resourcing instrument, data constructs the observer as active and observed as passive; denying the latter's agency and presenting this hierarchical relationship as natural. As a resource, data itself is constructed as the natural epistemological outcome of the ontological and already naturalised hierarchy of the observer/observed relationship.

Naturalisation of data through the practice of scientific management therefore enables it to be used as an apolitical *natural resource* to serve industrial rationality. In order to construct data as a resource for the political economy, I propose that a twofold naturalisation is enacted: First, the representationalist naturalisation of the hierarchy of the observer/observed relationship is enacted, leading to resourcing of the observed. And second, the naturalisation of knowledge is actualised through the influence of positivism, whereby the latter can simply be collected as pure facts, thereby leading to the resourcing of data. Taken together, these two processes give rise to a new Enlightenment mode of

representationalism, which as we shall see in the rest of this Chapter, remains influential in economic practice as well as legal concepts of data governance to this day. By naturalising and resourcing knowledge, said new mode of representationalism also effectively reinforces the separation between ontology (viz. observer/observed relationship) and epistemology (viz. data).

Enfolded within representationalist thought, the twofold naturalisation process which constructs data as a resource is not neutral; but has political implications. First, the naturalisation of the hierarchy between the observer and the observed (in particular within the Taylorist scientific management, between the scientific researcher and the worker) leads to the invisibilisation of the observed or worker's agency in the production of data. Additionally, given representationalist assumptions about data as epistemology separate from the ontological realm of the scientific researcher/observer and the worker/observed, the hierarchy between the two is deemed to not affect the production of knowledge within this relationship. Second, the positivist naturalisation of data as a fact that already exists in a value-free manner and is simply extracted by the observer/scientific researcher additionally contributes to the erasure of the agency of the observed/worker in the production of said data. The hierarchical relationship between the observer and observed, the separation of ontological and epistemological realms, and the positivisation of knowledge and data production thus all contribute to the establishment of unequal and exploitative power relations under the twofold naturalisation of data as a resource.

As part of the concept of scientific management, Taylor's time study method was vastly influential and brought about a new approach to industrial control via the worker.[96] This approach was consolidated in the 1930s as a new science of

[96] *Supra* n. 92, 294-297

human relations, and spawned a host of new control techniques involving the use of data as a natural resource that led to the emergence of Industrial Relations and Personnel Management as new fields of scientific study by the mid-20th century.[97] Neither was this construction of data as a resource in the context of political economy limited to worker or industrial relations. Data-intensive practices of scientific management extended to transportation, distribution, and marketing practices in the early 20th century.[98] In all these practices, we see the two-fold naturalisation which constructs data as a resource at work; and the resultant political erasure of the agency of the observed in the production of data.

In parallel to these industrial developments that cast data as a resource, towards the end of the 19th century, the modern discipline of economics took a definitive quantitative turn.[99] Prior to this period, economics as a discipline was rather theoretically-oriented and polemical.[100] By the 1890s, however, influenced by positivism, economists began to use numbers "*to develop the theory in a quantitative form, to bring it to a statistical test, and to apply it to current problems, and to the theory of interest."*[101] This desire to statistically test economic theories was relatively new, and helped cast numerical data as a resource to present the concepts of modern economics as natural and apolitical empirical truths or facts as opposed to being understood as value-laden theoretical constructs.[102]

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[97] *Supra* n. 92, 313-315
[98] *Supra* n. 92, 330-331
[99] Kevin R. Brine and Mary Poovey, 'From Measuring Desire to Quantifying Expectations: A Late 19th Century Effort to Marry Economic Theory and Data' in Lisa Gitelman(ed.), *"Raw Data" Is An Oxymoron* (MIT Press 2013) 61-62
[100] *Ibid.*
[101] *Supra* n. 92, 68-69
[102] *Supra* n. 92

Another development that cast data as a resource concerned the emergence of life insurance industry in the 19th century, which began to rely on statistical data and laws of mathematical probability to calculate premia and interest rates.[103] Various forms of aleatory contracts, which like the life insurance model, capitalised on future uncertainty had existed since at least the 13th century.[104] Jurists defined these agreements as the exchange of a present and certain value for a future, uncertain one.[105] So, for instance, the staking of a gamble, purchasing an annuity, bidding on next year's wheat crop, buying the next cast of a fisherman's net[106] *and* hedging of European investments in the transatlantic slave trade were all conducted through the legal instrument of aleatory contracts.[107] In these earlier models of aleatory contracts, however, it was not statistical data or probability, but specific circumstances of each case combined with personal experience of the trade that were deemed relevant to setting the terms of the contract.[108] Statistical data, which dealt with aggregates instead of individual case specificities, was considered unsuitable by merchants for determining interest for aleatory contracts, and by extension unsuitable to the business of insurance.

It was only with the establishment of the Equitable Society for the Assurance of Lives in 1762 in England that statistical data began to inform investment decisions in conditions of uncertainty by using mathematical tools to frame it as risk.[109] Established by a probability mathematician, the Society took note of statistical regularities of "*human Nature"* that had been framed as the law of

[103] Daston (1988), *Supra* n. 76, 174-175
[104] *Ibid.*
[105] Gerd Gigerenzer, Zeno Swijtink *et al, The Empire of Chance: How probability changed science and everyday life* (CUP 1989) 24-26; Daston (1988), *Supra* n. 76, 172-178
[106] Gigerenzer *et al* (1989), *Supra* n. 105, 20-22
[107] *See* for instance, Walter Johnson, 'White Lies: Human Property and domestic slavery aboard the slave ship *Creole'* (2008) 5(2) Atlantic Studies: Global Currents 237, 243
[108] *Supra* n. 103
[109] *Ibid.*

mortality in the positivist social sciences to calculate premia, interest, and annuities that capitalised in circumstance of death of the insured. Science historian Lorraine Daston has mapped in detail how laws of mathematical probability and statistical data converged with the accordance of a heightened social value to familial responsibility in this period to create the concept of life as we know today.[110] What is, however, of interest to the present discussion is the shift from the focus on individual case of insurance based on the insurer's experience of the trade towards aggregate statistical data in insurance practices of the insurance firm, Equitable. Equitable was one of the first firms to offer life insurance based on radically new techniques which relied upon statistical data and probability methods. The immense profitability of the Equitable made this model desirable to emulate.[111] By the middle of the 19th century, this shift had birthed a thriving community of insurance and business actuaries.[112] Through statistical data and positivist laws of birth and mortality, life and death of human bodies were resourced as human Nature. Thereafter, the use of data by financial ventures like life insurance and other aleatory transactions to capitalise on naturalised instances life and death made it a resource for modern financial capitalism. In this manner, data was construed as a naturalised resource for another major set of practices in modern political economy; rendering the hierarchical power relations between the observer and the observed invisible and erasing the agency of the observed in the production of data.

The adoption of statistical data for aleatory transactions in the field of actuarial entrepreneurship and insurance, however, was neither immediate nor uniform in the 19th century. It would take another century to definitively normalise data as a resource through the twofold naturalisation process. In the 19th century,

[110] *Ibid.*
[111] *Ibid.*
[112] *Supra* n. 103, 176-177

experienced practitioners and merchants were averse to excessive reliance on data aggregates; since they believed on individual case specifics to be of prime importance in making business decisions.[113] This need inspired the practice of record-keeping on data about individuals to create what we understand as 'data doubles' today. Popularised in the internet era, the term 'data double' refers to a de-corporealised body of pure virtuality[114] created by abstracting human bodies from their territorial settings and separating them into a series of discrete flows. These data flows are then reassembled into distinct 'data doubles' which can be scrutinized and targeted for intervention.[115] However in the 19th and early 20th century, such format of individual-oriented data records were not the norm. Most institutionalised practices of data generation in this time focused on statistical knowledge and ignored the data doubles: For instance, census officials in late 19th century Germany discarded their census takers' records because of space constraints; and focused instead on building statistics describing their population.[116] Up until the mid-20th century, there were only two major exceptions to this typical trend of aggregates derived from statistical data—credit reporters and life insurers, both of whom would be interested in data pertaining to individuals; or, data doubles.[117]

It was only after 1945 that a definitive reversal of this preference for statistical aggregates occurred; and the assumption of data as a resource for the economy became widely accepted. This was also a time when the data double began to gain more importance in the context of the political economy. In mapping the history of the unrealised US National Data Center, Dan Bouk illustrates how the push

[113] Dan Bouk, 'The National Data Center and the Rise of the Data Double' (2018) 48(5) Historical Studies in the Natural Sciences 627, 628-629
[114] Kevin D. Haggerty and Richard V. Ericson, 'The surveillant assemblage' (2000) 51(4) The British Journal of Sociology 605, 611
[115] *Supra* n. 114, 606
[116] *Supra* n. 113, 628-629
[117] *Ibid.*

for economic reforms as well as the emergence of the welfare State in the US from the 1930s to 1950s was inspired by the use of data doubles in the life insurance industry.[118] Advancements in computing in this period also helped this shift to data doubles as the use of computers enabled easier storage and processing of large scales of data.[119] In this manner, over the last century, data as a resource for the political economy significantly shifted from being cast as statistical aggregation to being normalised as personalised data double. This shift marks the emergence of data-driven economies as we know today, whereby it is through the data double that data operates as a resource. For the 20th century computerised political economy, the novelty lies not so much in using data as a resource *per se;* but rather, in using data *in the form of the data double* as a resource. Through this resourcing process and the twofold naturalisation inherent to it, the data double acts both as a naturalised resource and a resourcing instrument. This implies the depoliticisation both of the hierarchical relationship of the observer/observed and of the positivist relationship between the observer and knowledge that allows for the latter to be presented as 'unbiased' or 'value-free' within a scientific paradigm.

The increasing use of data doubles in the insurance industry was accompanied by the parallel and related emergence of cybernetics movement in the post-1945 landscape. The cybernetics movement was influential in shaping new foundational concepts in a broad range of fields including computing, media and communications.[120] At the same time, it was crucial in normalising the idea of data as a resource. In their incisive intellectual history of the cybernetics

[118] *Supra* n. 113, 630-631

[119] Sarah E. Igo, 'Me and My Data' (2018) 48(5) Historical Studies in the Natural Sciences 616; *See* also, Dan Bouk, 'The History and Political Economy of Personal Data over the Last Two Centuries in Three Acts' (2017) 32(1) Osiris 85

[120] Stefanos Geroulanos & Leif Weatherby, 'Cybernetics and the Human Sciences' (2020) 33(1) History of the Human Sciences 3

movement amongst other trajectories, science studies scholar Orit Halpern traces how data and information was constructed as a residue or exhaust through the simultaneous construction of the world as a communicative system.[121] Underlying this cybernetics vision was the influence of probabilistic and statistical methods and the imagination of the world as being driven by communicative patterns. The basic assumption here is that the world— both biological systems and human society —is constituted through systems of communication (information, feedback, relay), which exhibited certain patterns at a large-scale.

This assumption allowed for the reformulation of the world as a matter of design and its governance as a design problem.[122] In this context of cybernetics, the work of Norbert Wiener has been highly influential in creating contemporary understanding of data and information in multiple fields; particularly in the design of human infrastructures. The drive to discover the systemic patterns underlying and their usage to create designs that allow for appropriate regulation and control of society lie at the heart of Wiener's work.[123] In this imagination of the world, data and information are constituted as the residue or exhaust of communicative systems and are thereafter deployed as resources to design better systems. The world itself is reconstituted as bits of data, ready for the taking, which could be analysed and processed. In doing so, Wiener's work tried to reconfigure the relationship between temporality, representation and perception.[124] As Halpern writes, "*Wiener dreamed of a world where there is no 'unknown' left to discover, only an accumulation of records that must be recombined, analyzed,*

[121] Orit Halpern, *Beautiful Data: A History of Vision and Reason since 1945* (Duke University Press 2014) 61-72
[122] *Supra* n. 121, 11
[123] *Supra* n. 121, 11-12
[124] *Supra* n. 121, 12

and processed."[125] Such fantasies foreshadowed the emergence of big data. At the same time, the mid-20th century also foregrounded an "*aspiration and desire for data as the site of value"* that emerges from "*the seeming informational abundance once assumed to be the province of Nature*."[126]

Together, these aspects of the cybernetics movement have contributed significantly to the construction of data as a resource within the non-law of data governance's legal form. The imagination of the world as a large set of data points combined with the idea of data itself as a site of value enabled the twofold naturalisation process inherent to constructing data as a resource in multiple varied contexts. Much like the creation of knowledge for the resourcing of Nature whereby the latter was constructed as a site of value extraction, data itself began to be seen as a site of value extraction. The naturalisation of data constructed it as a part of Nature, which allowed for its representationalist construction as a passive epistemological artefact in contrast to apprehending data as a living onto-epistemological relationship. As a result, the agencies underlying the production of data were erased to construct it as a naturally-occurring resource. The constitution of data as a resource thus marks a political act through its exclusion of human and unhuman agencies implicit in data value chains from the conceptualisation of data. Data is thus constituted as an abstraction; free of the hierarchies of the material conditions of its own production. Such constitution of data reflects its inherent representationalist assumptions whereby as an epistemological artefact or resource data remains unaffected by the ontological hierarchies of its genesis.

These political exclusions are pervasive even in the non-legal understanding of data today; not least because of the widespread influence of cybernetics. In the

[125] *Ibid.*
[126] *Supra* n. 121, 15

post-1945 period the cybernetic discourse in information has been additionally used to provide a quantifiable basis for investigating any type of communication by physical and social scientists, including in the fields of physics, statistics, artificial intelligence, behavioural and molecular biology, physiology, experimental and cognitive psychology, linguistics, economics, organisational sociology, communication studies, library and information science, and deep space communications.[127] In his 1950 book, The Human Use of Human Beings, Wiener claimed that electronic, computerised control systems would form the basis of a "*second industrial revolution*" in which data technologies would be used for routine decision-making; this was widely influential in framing data as a core element of economic and social life.[128] The understanding of data as a resource for Human society thus also filtered into policy, governance and legal circles during this time period. As will be explored in Chapter 5, by the 1970s, at least in the context of the EU, the non-legal understanding of data as a resource becomes a well-established trope amongst legal and policy practitioners and scholars. But as illustrated in the present Chapter, shaped by representationalist assumptions, such understandings of data are neither apolitical nor innocent; rather, they are always implicated in the erasure of observed's agency and the processes of data production.

[127] Ronald R. Kline, 'Cybernetics, Management Science, and Technology Policy: The Emergence of "Information Technology" as a Keyword, 1948-1985' (2006) 47(3) Technology and Culture 513, 517

[128] *Supra* n. 127, 518. It has also been argued that the contemporary discourse on information in Europe emerges from the confluence of three historical strands: the European documentation movement, cybernetics and information theory, and discussions about the so-called 'virtual.' *See*, Ronald E. Day, *The Modern Invention of Information: Discourse, History, and Power* (Southern Illinois University Press 2008). In this regard, the cybernetics movement should be understood as just one of several strands, but nevertheless a very influential one that contributed to the contemporary understanding of data, especially within the data economy today.

3.5. Conclusion

This Chapter has mapped how representationalist practices rooted in Western cultures of knowledge, science, and political economy influence the construction of data within the 'non-legal' of modern data governance law. This is effected both by the construction of data as a resourcing instrument and data as a number. I have illustrated how these non-legal understandings of data are implicated within hierarchical and exploitative power relationships that are instilled by representationalist assumptions that constitute data as an epistemological artefact in a realm separate from the ontological relationships necessary to produce said data. These representationalist assumptions that manifest in the non-legal understanding of data demarcate a hierarchy between the observer and observed positionalities such that the observer is posited as active and powerful, the observed as passive and powerless in the creation of knowledge/data about it, and said knowledge/data itself as a neutral mediation between the observer and observed. The Chapter has mapped how the epistemic practices of data creation within these power asymmetries between the observer/observed have direct ontological consequences through socio-economic and scientific practices of understanding data as a resourcing instrument; as number; and finally, as a resource.

In such mapping, my aim has been to illustrate that the seeming neutral or innocent understanding of data in non-law is in fact political. The non-legal understanding of data as an epistemological representation of the world creates oppressive power relations through the exclusion and invisibilisation of the observed's agency in the production of data and the twofold naturalisation of data as a resource. The next Chapter seeks to illuminate how this representationalist understanding of data within the non-law of data governance

influences and shapes the politics of conceptualisation of data within the category of 'law' that is created by the modern legal form.

CHAPTER 4

DATA WITHIN THE LAW

"…I am not the soul waiting to be harvested,
Nor am I the lab where your theories are tested…" [1]

4.1. Data Within the Person/Thing Dichotomy

Mapping data through the analytical framework of representationalism illustrates that the construction of data within the modern legal form is marked by its production both as a legal and non-legal artefact. However, even as representationalist assumptions of the modern legal form produce data both as the non-legal and the legal, these processes are co-productively intertwined and do not occur in isolation. The present Chapter accordingly seeks to unpack the production of data within the 'law' of the modern legal form and its co-productive relationship with the understanding of data within the 'non-law.'

What is the understanding of data within the 'law' given the Selbstreflektion of the modern legal form? In this context, it is proposed that the law is marked by

[1] Abhay Flavian Xaxa, 'I am not your data' (2011) <https://www.roundtableindia.co.in/i-am-not-your-data-nor-am-i-your-vote-bank-in-memoriam-sociologist-and-activist-abhay-xaxa-2/> accessed 19 February 2021

the dichotomy of the person and thing, which is a persistent feature of Western law. According to this dichotomy, the law constructs the world as comprising of two categories of entities: persons and things. This distinction between the person and the thing is widely understood to be a keystone of the semantic architecture of Western law.[2] Within the category of the 'law' of the modern legal form, data is conceptualised in accordance with this person/thing dichotomy. The construction of data within the law of the modern legal form thus cannot be mapped without giving an account of data within the person/thing dichotomy in modern law. The present Chapter attempts to provide such an account in its mapping of data within the category of 'law' of the modern legal form. In undertaking such mapping, my argument is that the person/thing dichotomy of law serves as the mechanism for the manifestation of representationalism within the modern legal form through Selbstreflektion. As a result, I argue that the exploitative power relationships created by representationalism are enacted within the law through the dichotomy of the person and thing.

Against this background, it becomes important to trace the connections between the non-legal and legal constructions of data as part of the modern legal form. The last Chapter mapped the construction of data through historicised entanglements of Western science and political economy within the category of the 'non-law' of modern law. In doing so, it illustrated how such 'non-legal' construction of data is shaped by representationalist assumptions that create exploitative power relations. It further illustrated how these power relations are enacted through the creation of data as a resource by a twofold naturalisation process that enfolds assumptions about data as a resourcing instrument and as a

[2] Alain Pottage, 'Introduction: The Fabrication of Persons and Things' in Alain Pottage & Martha Mundy (eds.), *Law, Anthropology, and the Constitution of the Social: Making Persons and Things* (Cambridge University Press 2004) 3. *See* also generally, Roberto Esposito, *Persons and Things: From the Body's Point of View* (Wiley 2015)

number. In its mapping of data within the Selbstreflektion category of 'law' of the modern legal form, the present Chapter seeks to highlight the connections between such 'non-legal' construction of data and the 'legal' construction of data. To do this, I argue that the representationalist assumptions about data are produced not just through 'non-legal' scientific and economic processes; but are, in fact, deeply entangled with modern data governance law. In other words, the non-legal and legal understandings of data are co-produced through the Selbstreflektion form, grammar or aesthetic of modern data governance. As a result, the representationalist assumptions of the non-legal form of data are translated into the legal form through a process of legalisation, which entails a form of co-production of data through legal and non-legal knowledges. I additionally propose that this process of legalisation or co-production of data is facilitated by the dichotomy between legal persons and things.

Given that the non-legal construction of data instates exploitative power relations through the erasure of the agency of the observed, the process of legalisation or co-production of data that draws upon the non-legal understandings of data cannot be neutral or apolitical either. My mapping of data within the law seeks to unpack this claim by employing the work of Christoph Menke on the politics of legalisation of that which is demarcated as 'non-law.' Menke's central argument here is that the modern legal form constitutes non-law as natural or as Nature; thus depoliticising it. Furthermore, the category of the law is then built upon this depoliticised non-law within the modern legal form.[3] Drawing upon this work, I argue that the legal concept of data is similarly engineered within the modern legal through the usage of a depoliticised understanding of the non-law. In doing so, I highlight the role that

[3] Christoph Menke (trans. Christopher Turner), *Critique of Rights* (Polity Press 2020) 72; *see* also, in this book, discussion in §2.5

representationalism plays in this process through the mechanism of the person/thing dichotomy. he subsequent section outlines the significance of the person/thing dichotomy in Western law. Following this, I argue that the construction of data as public domain within modern data governance law works in alignment with the person/thing dichotomy of data governance law and is a manifestation of such representationalism.

4.2. Co-production of Legal and Non-Legal Data

What is the relationship between the non-legal and the legal understandings of data? Does one influence the development of the other; and if so, how? Drawing on Christoph Menke's work, I have outlined in Chapter 2 how the modern legal form creates the boundary between 'law' and 'non-law' through the process of Selbstreflektion. The present section revisits this work to outline how the 'legal' is constructed through the 'non-legal' via this Selbstreflektion process. An understanding of this dynamic between non-law and law can enable us to apprehend the relationship between the non-legal conceptualisation or knowledge production about data as a resourcing instrument, number, and resource and the legal knowledge production about data in modern data governance law. In other words, it allows us to provide an account of the co-production of data through legal and non-legal knowledges. As Menke's analysis shows, such co-production of legal and non-legal knowledges is not unproblematic but undergirds certain power relations for which there needs to be accountability.

To recall the discussion from Chapter 2, Menke describes how the modern legal form's Selbstreflektion functions through the two features of enabling and permitting. The enabling feature of Selbstreflektion constructs the 'non-law' by

its very definition as external to law. In doing so, it constructs the non-law as a given fact or as a naturalised and apolitical category for law. At the same time, the permissive feature of modern legal form's Selbstreflektion restricts law to its own realm by permitting and validating the non-law, but limiting it from questioning the givenness and factity of non-law. I have discussed earlier how (1) by concealing the political nature of non-law through its enabling feature and (2) by overtly removing law from matters of judgment about the politics of non-law (including the political boundaries between law and non-law) through its permissive feature, the modern legal form itself enacts politics.

The externalisation of non-law through the enabling feature of modern legal form's Selbstreflektion allows the latter to treat the non-law as *a priori* to law. In other words, the Selbstreflektion of the modern legal form *enables* the construction of 'non-law' as completely independent of the 'law.' However, at the same time, Menke points out that this relationship does not hold true in the reverse; for the 'law' is not completely independent of the 'non-law.' Based on this enabling feature, the modern legal form constructs concepts in 'law'. In this context, Menke notes, "*The autonomous act of establishing, on which law's normativity depends, is not something instituted without presuppositions, not a case of something arising from nothing. Instead, precisely to the contrary, the establishment of law takes place in a process of (re-)forming what already exists."*[4] In this sense, the law arises from that which is demarcated as the non-law; and simultaneously, the law is alsso limited by the non-law viz., Selbstreflektion's permissive feature.

Chapter 3 illustrated how data is created as a resource through the 'non-legal' entanglements of science and political economy within the representationalist Western cultural archive. As Menke's analysis however shows, the non-legal is

[4] *Supra* n. 3, 71-72

essential to the functioning of the modern legal form because even in its self-autonomy, law is enabled and restricted by the category of the non-law created by the modern legal form. Given this, the representationalist non-legal knowledge about data as a resource is very relevant to the law. The legal understanding of data in many ways depends on the externalised non-legal understanding of data. Data governance law, for instance, draws upon this representationalist non-legal understanding of data to establish itself. In doing so the Selbstreflektion of the modern legal form is enacted *such that data governance law constructs this representationalist knowledge of data as resource, as a given fact for law (enabling feature); while also permitting and perpetuating the representationalist knowledge of data as resource by removing this matter from the purview of legal questioning in describing it as 'non-law' (permissive feature).* In this manner, the modern legal form's Selbstreflektion reproduces the problematic representationalist assumptions inherent to the non-legal construction of data as resource within data governance law. Such reproduction needs to be understood as a co-productive process in which the legal understanding of data is co-produced with the non-law.

By now it should be evident that such co-production/reproduction of representationalist non-legal knowledge about data through the modern legal form into data governance law is not innocent or unproblematic. As discussed in Chapter 3, the construction of data within the non-law produces it as resourcing instrument; as number; and eventually, as resource. Underlying this construction as resource is the representationalist process of twofold naturalisation which invisibilises the lived relationship of power and exploitation that is enabled through hierarchy between the observer and the observed; and the erasure of agency of the latter in the production of data. Simultaneously, this process also inculcates the elevation of data above these ontological hierarchies through its

construction as an epistemological claim within the representationalist binary of ontology and epistemology.

As the Selbstreflektion of modern legal form reproduces this non-legal understanding about data into data governance law, it correspondingly also co-produces the representationalist power relations between the observed and the observer that are enabled by the construction of data as a resource. Because of Selbsteflektion's enabling feature, these observer/observed power relations are additionally invisibilised and depoliticised and presented as 'natural' or apolitical facts before data governance law. Simultaneously, Selbstreflektion's permissive feature prevents data governance law from questioning these representationalist knowledges about data as resource upon the account that the latter constitutes a 'non-legal' matter. *This process produces a politically productive contradiction whereby on the one hand the modern Western legal form naturalises, positivises, and enables the non-law in order to constitute the law but simultaneously negates any enquiry into the validity of the 'non-law' on the other.* Selbstreflektion thus acts to positivise or depoliticise not just data governance law's own understanding of data; but also, the non-legal knowledges that construct data as resourcing instrument, number, and resource; this is done by presenting and reinforcing the representationalist assumptions underlying the latter as given, apolitical and natural, and preventing further legal enquiry into it. Representationalist assumptions of non-legal knowledges about data are, thus, problematically reproduced into the law.

4.3. The Dichotomy of Person/Thing Within Modern Law

Having problematised the relationship between the non-legal and legal understandings of data within the modern legal form of data governance, it becomes imperative to outline the specific process through which the

representationalist non-legal knowledges about data are co-produced/reproduced within data governance law. I propose that such co-production/reproduction occurs through the mechanism of the person/thing dichotomy in Western law.

The distinction between person and thing is a central feature of Western law. As illustrated by the continuing influence of Lesley Hohfeld's analysis of legal rights/privileges/duties in Anglo-American legal theory, the separation of the person and thing is assumed by common law traditions.[5] But it is in civil law traditions of continental Europe that this division appears more precisely. Such a division can be traced to the institutions of Roman law, which attached persons (*personae*) to things (*res*) by means of a set of legal forms and transactions (*actiones*) which prescribed all of their permissible combinations.[6] This threefold division between persons, things, and actions was taken to be rather self-evident in ancient Europe. Therefore, the 2nd century Roman jurisconsult Gaius states, "*Now, all the law that we make use of pertains either to persons or to things or to actions,"* [7] without explicitly defining any of these terms. Nevertheless, a perusal of other Roman legal texts indicates that 'person' seems to have referred to human beings as well as certain groups or collectivities of human beings (eg. collegia), whereas 'thing' seems to have been used in two senses: First, to refer to *res corporales,* viz. physical objects external to the human body that can be detected by means of the senses,

[5] Wesley N. Hohfeld, 'Some Fundamental Legal Conceptions as Applied in Judicial Reasoning' (1913) 26 Yale Law Journal 16. *See* also, Alain Pottage, 'Introduction: The Fabrication of Persons and Things,' in Alain Pottage & Martha Mundy (eds.), *Law, Anthropology, and the Constitution of the Social: Making Persons and Things* (CUP 2004) 4

[6] W.T. Murphy, *The Oldest Social Science* (OUP 1997), Chapter 1. *See* also, Pottage (2004), *supra* n. 5; Gillian Rose, *Dialectic of Nihilism: Post-structuralism and Law* (Basil Blackwell 1984); Esposito (2015), *supra* n. 2

[7] Gaius (trans. J.-R. Trahan), *Institutes, Book 1, Title II, number 8* (2006). For a discussion of Gaius' work on the distinction between persons, things, and actions, *see* also, Peter Stein, *Roman Law in European History* (CUP 1999) 19-20, and Barry Nicholas & Ernest Metzger, *An Introduction to Roman Law* (Clarendon Press 1984) 34-36

and second, *res incorporales* to cover what we would understand today as rights and duties.[8] Since the earliest times in Western European legal traditions then, 'thing' was used to refer to not just tangible elements but also abstract and intangible ones. This aspect becomes significant to draw the connections between the construction of data as an abstract resource within the non-law, on one hand; and as negotiated between person and thing divide within the law, on the other.

The emergence of the modern school of natural law in the 16th century Europe however gave a new meaning to the legal concepts of person and thing. The Dutch Romanist Hugo Grotius, one of the most influential representatives of the natural law school, reformulated the legal person as those who "*have rights to things.*"[9] Correspondingly, the legal thing was defined by Grotius as "*that which is external to man and in any way useful to man.*"[10] Much like the representationalist hierarchy between the observer and the observed, this 16th century Western legal reformulation of person and thing crucially also created a hierarchy between the legal person and the legal thing. Through the attribution of rights over 'things' to 'persons,' the legal person was constructed as an active agent while the legal thing was constructed as an entity that existed for the use of man. Such hierarchical construction of the active person against the passive thing in modern Western law happened in parallel to the representationalist hierarchies of the active observer against the passive observed and the active Human against the passive Nature in modern systems of scientific knowledge production, described in the previous Chapter.

[8] J.-R. Trahan, 'The Distinction Between Persons & Things: An Historical Perspective' (*sic*) (2008) 1 Journal of Civil Law Studies 11

[9] Hugo Grotius (trans. R.W. Lee), *The Jurisprudence of Holland, Book 1, Chapter II, No. 28* (1926) 15, cited in Trahan (2008), *supra* n. 8, 12-13

[10] *Supra* n. 9, 65

It has been remarked that when Grotius defined legal thing as that which is external and useful to man, he referred not only to the Earth and man-made objects like houses; but also to the physical existence of human body and human life itself.[11] In this sense, the legal thing formulated by Grotius existed for the use of a de-materialised Human; much like the abstract Human constructed by modern scientific thought in this period that was used to resource Earth and human bodies for imperial and colonial political economies through representationalist methods of data production. In tandem with each other, Western legal form and representationalist non-legal knowledge thus co-produced legal things in a manner which enabled the erasure of their agency; consequently paving the way for their subjugation or resourcing to legal persons.

By the period of European Enlightenment in the early 19th century, this understanding of person and thing began to be developed within the language of the 'subject' and the 'object' of rights and duties[12]. German legal scholarship played an influential role in this process. Such conceptions of subjects and objects of rights and duties remain relevant to data governance law even today. According to this new language, a legal person was defined as that who is *capable* of being *invested* with rights or *subjected* to duties.[13] This formulation marked a shift from Grotius' understanding of legal person: "*Whereas in earlier times 'being a person' was thought to be logically prior to and to be the cause of 'having legal capacity', hereafter 'having legal capacity' will be thought to be logically prior to and to be the cause of 'being a*

[11] *Supra* n. 8, 13

[12] *Supra* n. 8, 14

[13] *See* for instance, Anton Thibault (trans. Nathaniel Lindley), *An Introduction to the Study of Jurisprudence* (W. Maxwell 1855)*;* G.F. Puchta, 'Outlines of Jurisprudence as the Science of Right' in William Hastie (ed.), *Outlines of the Science of Jurisprudence* (T.&T. Clark 1887) 100; Frederick Karl von Savigny (trans. Charles Guenoux), *Traité de Droit Romain* (Firmin Didot Frères 1840) 1; John Austin (Robert Campbell ed.), *Lectures on Jurisprudence, Or, The Philosophy of Positive Law* (John Murray 1885) 348-353, 358, cited in *supra* n. 8, 13-14

person'."[14] Legal capacity, in this sense, may be understood in terms of the agency of the person. This 19th century shift accordingly marked a shift from understanding a legal person to be that which has agency (usually a natural human entity) towards formulating the requirement for legal personality as the recognition of the agency of any entity. In this way, not just natural human persons, but also human organisations like companies, partnerships, and States were afforded legal agency.

In variance with this new legal subjectivity attributed to 'person', a legal 'thing' was defined through two contrasting schools of thought: One of these schools understood legal thing as a negation of the legal person viz., all that which was not a legal subject and thus constituted the 'object' of a legal relation. This is evident in the formulation of German jurist Anton Thibault who defined a legal thing to mean "*whatever neither is nor can be the subject of a legal relation, but yet may be the object of a legal transaction and so immediately the object of a right…"* [15] By contrast, the other school of thought characterised in the work of German jurist Georg Puchta understood the legal thing to be limited to the *res corporales* of Roman law. Accordingly, Puchta notes, "*The jural relationships in which man stands as an individual relate to the external goods which he needs for his existence. These goods— the earth, with what it produces and that man makes thereof —are primarily destined for the supply of the wants which he has […] The principle of right does not deal with these external goods in all their natural multiplicity, but it brings into prominence their universal character as destined for man and his wants. This common characteristic is expressed by the word 'thing.'"* [16]

[14] Jean Louise Carriere, 'From Status to Persons, in Book I, Title 1 of the Civil Code' (1999) 73 Tulsa Law Review 1263, 1268-69

[15] Anton Thibault (1855), *supra* n. 13, 88. *See* also, Nicholas & Metzger (1984), *supra* n. 7; *Supra* n. 8, 16

[16] Puchta (1887), *supra* n. 13, 69-70; cited in *supra* n. 8, 16-17

Whereas the formulation of the legal person in the 19th century marked a shift from Grotius' formulation of legal person; the formulation of legal thing in relation to the legal person exhibits remarkable continuity in maintaining the hierarchy of the person/thing dichotomy that appeared in 16th century natural law. Much like Grotius' formulation, the translation of the person/thing relationship into the concept of the 'subject' and 'object' of law speaks to the characterisation of the former as an active or agential entity; and the latter as a passive complaisant entity whereupon the legal subject exercises power. This hierarchical dynamic is evident across different and contrasting schools of legal thought: Not only through Thibault's description of the subject as a negation of the object; but also through Puchta's understanding of legal thing as external goods essential for human existence, is the legal thing constructed to enable a resourcing of Earth and human labour ("*what man makes thereof"*) to the legal person.

Following these developments, the rise of legal positivism and the influence of Hans Kelsen's Pure Theory of Law in the 20th century reworked the idea of legal person to completely abstract it from the material human or collective formations in question.[17] Such reformulation of legal person however only served to reinforce the hierarchy between the legal person and thing, whereby the latter exists to be attributed or resourced to the former. It is against this longer history of the dichotomy of the person/thing that the negotiation of data between the person/thing categories within data governance law needs to be contextualised.

The governance of data and information first came under the purview of law not through the mechanism of data governance but through questions of intellectual property law that seek to govern knowledge and its circulation in

[17] *Supra* n. 8, 17-18

society. In this context, US-American legal scholar Margaret Radin describes the history of intellectual property as a compromise between the Enlightenment dichotomy of the legal subject, who is imbued with agency; and the legal object, which is deprived of it. According to Radin, the notion of intellectual property presented a challenge to the Enlightenment consensus of subject/object or person/thing dichotomies; given that intellect seemed to belong primarily to the realm of the subject or the person, and property seemed to correspond to the realm of objects or things.[18] This posed a conundrum since the appearance of intellectual property seemed to blur the dichotomous boundary between the categories of legal persons and things. Against this backdrop, Radin argues that intellectual property law has traditionally engineered a compromise through the centring of tangible media; which allowed only tangible embeddings of knowledge or 'intellect' to be protected as intellectual property. In this manner, she notes, "*The creative work* [of intellect] *starts out internal to the person, hence unpropertizable but becomes embodied in an external object, hence propertizable."* [19] Historically, this compromise allowed the subject/object, person/thing dichotomy to be maintained within the law; while simultaneously enabling the treatment of certain tangible media through which knowledge can be presented as legal thing. The tangibility of media through which knowledge or 'intellect' could be reproduced has been central to maintaining this compromise.

Radin, however, notes that this compromise has been increasingly questioned since the explosion of computing as well as biotechnology and the emergence of the information society. With these developments, the particular category of knowledge understood as data or information is no longer tied to the tangible

[18] Margaret Jane Radin, *Reinterpreting Property* (University of Chicago Press 1993). See also, Margaret Jane Radin, *Contested Commodities: The Trouble with Trade in Sex, Children, Body Parts, and Other Things* (Harvard University Press 2001)

[19] Margaret Jane Radin, 'Information Tangibility' in Ove Granstrand (ed.), *Economics, Law and Intellectual Property: Seeking Strategies for Research and Teaching in a Developing Field* (Springer 2003) 397

media to be protected under intellectual property law.[20] It may appear in intangible forms like software; or as abstract understandings of data and/or information. Radin identifies this blurring of distinction between tangible and intangible media as having implications for how the law conceptualises knowledge, in general; and information, in particular. Specifically, she notes that such blurring creates a tension between the understandings of information as freedom of expression and as intellectual property.[21] This is because the understanding of information as free expression is connected to the idea of information as part of human agency and intellect; thus falling within the realm of the subject or legal person. On the other hand, the understanding of information as property construes it as an object without agency; or simply, as legal thing.

In her reading of Radin's scholarship, new media theorist Wendy Hyui Kyong Chun has observed that the blurring of the boundaries between tangible and intangible media (or in other words, the experience of digitisation and the ubiquity of software practices) enables the construction of information/data as a thing.[22] Chun however advocates for understanding things as relations; and not as dead artefacts.[23] To this end, Chun quotes the work of influential media scholar Bill Brown to observe, "*A thing…can hardly function as a window. We begin to confront the thingness of objects when they stop working for us: when the drill breaks, when the car stalls, when the windows get filthy, when the flow within the circuits of production and distribution, consumption and exhibition, has been arrested, however momentarily. The story of objects*

[20] *Supra* n. 19. *See* also, Hyo Yoon Kang, 'Ghosts of Inventions: Patent Law's Digital Mediations' (2019) 57(1) History of Science 38; Alain Pottage and Brad Sherman, *Figures of Invention: A History of Modern Patent Law* (OUP 2010); James Boyle, 'The Second Enclosure Movement and the Construction of the Public Domain' (2003) 66 Law and Contemporary Problems 33
[21] *Supra* n. 19, 408-9
[22] Wendy Hui Kyong Chun, *Programmed Visions: Software and Memory* (MIT Press 2013) 14
[23] *Ibid.*

asserting themselves as things, then, is the story of a changed relation to the human subject and thus the story of how the thing really names less an object than a particular subject-object relation."[24]

Chun's understanding of thing as a relation between subject-object, however, needs to be contrasted and distinguished from the legal understanding of thing; given that the legal undersstanding is well-rooted within the presumed hierarchical dichotomy of the person/thing. Notwithstanding its lack of embeddedness in tangible media, even though data is not always recognised as property,[25] it is widely recognised as a legal thing today.[26] In such legal formulation of data as thing, data is understood and exploited as an economic resource[27]; rather than being apprehended as a relationship between subjects and objects, between persons and things. In the section that follows, I build upon this insight to further argue that such legal understanding of data as thing co-produces and reproduces representationalist assumptions about data in conjunction with non-legal knowledges through the specific formulation of data as public domain.

[24] Bill Brown, 'Thing Theory' (2001) 28(1) Critical Inquiry 1, 4, cited in Chun (2013), *supra* n. 22, 11. On the understanding of digital objects/data as relations *see* also, Yuk Hui, *On the Existence of Digital Objects* (University of Minnesota Press 2016)

[25] On the debates concerning the possibilities and limitations of the formulation of data, especially personal data as property, *see* for instance, Nadezhda Purtova, 'The illusion of personal data as no one's property' (2015) 7(1) Law, Innovation, and Technology 83; Pamela Samuelson, 'Privacy as Intellectual Property?' (2000) 52(5) Stanford Law Review 1125; Marc Rotenberg, 'Fair Information Practices and the Architecture of Privacy (What Larry Doesn't Get)' (2001) Stanford Technology Law Review 1; Lawrence Lessig, 'Privacy as Property' (2002) 69(1) Social Research 247; Hanoch Dagan, 'Property and the Public Domain' (2013) 18(3) Yale Journal of Law & the Humanities 84; Salome Viljoen, 'Data as Property?' (Phenomenal World, 16 October 2020) <https://phenomenalworld.org/analysis/data-as-property> accessed 15 September 2021

[26] Jannice Käll, 'The Materiality of Data as Property' (Harvard International Law Journal, 2020) <https://harvardilj.org/2020/04/the-materiality-of-data-as-property/> accessed 15 September 2021

[27] *Ibid.*

Chun's formulation of thing as subject-object relations, on the other hand, stands in contrast to the legal understanding of thing as a dead artefact or resource. In proposing the understanding of 'thing' as a matrix of living relations, Chun's formulation creates an opening for critiquing the legal imagination of data as thing. Mapping data as thing in terms of the subject-object relations embedded within it, for instance, allows us to provide an account of the observer-observed agential hierarchy; along with the alienation of data from these political ontologies through the ontology/epistemology dichotomy, which is instituted by representationalism. In doing so, the account of data as a living relation serves as a critique of the reproduction of representationalism in the law, and creates space for alternative and nonrepresentationalist accounts of data. My mapping of data as legal thing aims to generate these critiques of law's embedded representationalism, while also paying close attention to the legal processes through which data is constructed within the person/thing dichotomy of modern law.

4.4. Data as Public Domain

The previous section discussed the history and politics of person/thing dichotomy in modern law and the way the emergence of computing and data technologies has challenged traditional assumptions about what constitutes a legal person and thing. The present section maps the relationship between the person/thing dichotomy and the conception of data in law. In doing this, I argue that data manifests as legal thing within the person/thing dichotomy through the specific legal conceptualisation of the public domain. I propose that by constructing data as public domain within the law, the representationalist non-legal understanding of data as resource is translated into the law to co-produce data as legal thing. In this manner, representationalist assumptions are co-

produced by the law through the vehicle of the modern legal form. In tandem with mapping the co-production of data as legal thing through its constructions as the public domain, I also outline the political implications of these representationalist assumptions upon the legal discourse and conceptualisation of data.

It is widely understood that data is formulated as a resource within the law.[28] The present section illustrates how this idea of data as resource relies upon the understanding of data as legal thing through its construction as the public domain as well as upon non-legal understandings of data as resource. In Chapter 3, I have outlined how by the late 19th century, data was constructed as a crucial resource for the political economy through practices of scientific management, development of economics as a quantified discipline, and the shift from statistical aggregates to data doubles in commercial practice post-1945, which also saw the rise of computing technologies. I illustrated how the entanglements of science and political economy as non-law have historically produced the representationalist understandings of data as resourcing instrument; number; and finally, as resource.

The co-production of data in law, however, is rooted in not just the entanglements of science and political economy; but also, the law and the political economy. In recent times, the entanglements of law and political economy (non-law) have been critically analysed in several fields of law.[29] In this context, it must

[28] Purtova (2015), *supra* n. 25; Käll (2020), *supra* n. 26. *See* also, *infra* n. 56

[29] On the entanglements of law and political economy, *see* for instance, David Singh Grewal & Jedediah Purdy, 'Introduction: Law and Neoliberalism' (2014) 77 Law & Contemporary Problems 1; David Singh Grewal, Amy Kapczynski & Jedediah Purdy, 'Law and Political Economy: Toward a Manifesto' (Law and Political Economy Blog, 11 June 2017) <https://lpeblog.org/2017/11/06/law-and-political-economy-toward-a-manifesto/> accessed 15 September 2021; Jedediah Britton-Purdy, David Singh Grewal, Amy Kapczynski & K. Sabeel Rehman, 'Building a Law-and-Political-Economy Framework: Beyond the Twentieth-Century

be remembered that the law does not merely reflect the non-law but actively co-produces with it.[30] To this end, the law develops its own specific concepts which enables the translation and co-production with the law of representationalist non-legal knowledges about data.

One such specific legal concept is that of the 'public domain'; or, what legal scholar Julie Cohen, in her study on the use of personal data in the informational economy, has termed as the 'biopolitical public domain.' [31] I propose that while the notion of the public domain emerges from intellectual property law in this context, it has a larger influence and is deeply rooted within the legal notion of data beyond the field of intellectual property.[32] At the same time, this notion of the public domain needs to be historicised against the larger history of property law; and its deployment for the colonial expropriation of land through its construction as a resource and legal thing.[33] Such historicisation is particularly

Synthesis' (2020) 129 The Yale Law Journal 1784; The IGLP Law and Global Production Working Group, 'The role of law in global value chains: a research manifesto,' (2016) 4(1) London Review of International Law 57

[30] Sheila Jasanoff, 'Making Order: Law and Science in Action' in Edward J. Hackett, Olga Amsterdamska *et al* (eds.), *The Handbook of Science and Technology Studies*, 3rd Edition (MIT Press 2007) 768-772. *See* also, Sara Ahmed, *Differences That Matter: Feminist Theory and Postmodernism* (CUP 1998) 27-29

[31] Julie E. Cohen, 'The Biopolitical Public Domain: The Legal Construction of the Surveillance Economy' (2018) 31 Philosophy and Technology 213

[32] While I engage with the relevant aspects of public domain from intellectual property law to discuss how data is rendered as legal thing in this book, this discussion is meant to be introductory and not comprehensive since the core project of this book involves understanding how data is rendered as a legal thing within the framework of data governance, not intellectual property law. For a detailed analysis of intellectual property law and how it enables the construction of data as legal thing, *see* Jannice Käll, *Converging Human and Digital Bodies. Posthumanism, Property, Law.* (2017) PhD Thesis, Gothenburg University <http://hdl.handle.net/2077/52295> accessed 15 September 2021

[33] Rosemary J. Coombe, 'Left Out on the Information Highway' (1996) 75 Oregon Law Review 237; Carol M. Rose, 'Romans, Roads, and Romantic Creators: Traditions of Public Property in the Information Age' (2003) 66(1/2) The Public Domain 89; James Boyle, *The Public Domain: Enclosing the Commons of the Mind* (Yale University Press 2008). *See* also, Rosemary J. Coombe, 'The Cultural Life of Things: Anthropological Approaches to Law and Society in Conditions of Globalisation' in Alexandra George (ed.), *Globalisation and Intellectual Property* (Taylor & Francis 2017) 533

useful for highlighting how the legal concept of the public domain assists in the representationalist co-production of data as resource.

The legal concept of public domain might be familiar to the reader from intellectual property law; particularly copyright law. In this context, the concept of public domain has been widely understood as '*negative space'* that is left over when intellectual property ceases to be viz., those creative works that are no longer in the copyright term.[34] In this regard, the public domain has also been understood to broadly refer to "*resources for which legal rights to access and use for free (or for nominal sums) are held broadly*."[35]

Such formulation of public domain as negative space hints at a longer genealogy beyond the confines of intellectual property law; towards the broader legal category of *res nullius*. Originating in Roman law, *res nullius* refers to a category of legal thing or legal object which is capable of assignment, but has not yet been attributed, assigned to, or appropriated by any legal person.[36] In this sense, it finds resonance with the idea of public domain as negative space.

The concept of *res nullius* thus expresses the hierarchical dichotomy of person over thing; whereby the former, constructed as the active subject, seeks rights

[34] Jessica D. Litman, 'The Public Domain' (1990) 39(4) Emory Law Journal 965; Pamela Samuelson, 'Mapping the Public Domain: Threats and Opportunities' (2003) 66(1) Law and Contemporary Problems 147. *See* also, Boyle (2003), *supra* n. 20, Ronan Deazley, *Rethinking Copyright: History, Theory, Language* (Edward Elgar 2006) 102-104; W. Van Caenegem, 'The Public Domain: Scientia Nullius?' (2002) European Intellectual Property Review 324; Edward Samuels, 'The Public Domain in Copyright Law' (1993) Journal of the Copyright Society of the USA 137; J.L. Hall, 'Blues and the Public Domain- No More Dues to Pay?' (1995) Journal of the Copyright Society of the USA 215; S.M. Martin, 'The Mythology of the Public Domain: Exploring the Myths Behind Attacks on the Duration of Copyright Protection' (2002) Loyola of Los Angeles Law Review 253

[35] Anupam Chander & Madhavi Sunder, 'The Romance of the Public Domain' (2004) 92(5) California Law Review 1331, 1338

[36] Carol M. Rose (2003), *supra* n. 33, 92-93

over the latter, constructed as the passive object. I propose that in this context, *res nullius needs to be understood as* the passive object/legal thing which has not already been claimed; but *has the potential* to be claimed by active subject/legal person. Through such hierarchical construction, law enables the *resourcing* of the passively constructed object/thing (eg. land) to the actively constructed subject/person.[37] At the same time, it should be noted that the legal thing does not already exist before the legal creation of the concept of *res nullius*; rather the legal thing is created through the deployment of the *res nullius* concept. In other words, the concept of *res nullius* (much like the public domain) is what creates the legal thing. Furthermore, I propose that underlying the creation of legal thing through the concept of *res nullius is* the process of resourcing.

Consider, for example, the appropriation of Indigenous land by European settlers in colonial conquests, whereby both legal and scientific modes of resourcing were implicated. In the previous Chapter, I have discussed the example of resourcing of Indigenous peoples in the forests of Malabar Hills in Southern India through scientific data production in the fields of anthropology, geography, and natural history. This resourcing through scientific knowledge was entangled with production of legal knowledge about the forested landscape of the Malabar Hills; for instance, through the legal principle of *terra nullius*. As a principle of modern international law, *terra nullius* builds on the concept of *res nullius* to construct the original ownership of land to no legal person and thereby laying down that it may be appropriated by anyone who lays claim to it as property.[38] This principle was used to construct the Malabar Hills as lacking

[37] For a detailed discussion of this point *see, supra,* §3.2

[38] Brenna Bhandar, *Colonial Lives of Property: Law, Land, and Racial Regimes of Ownership* (Duke University Press 2018) 47-50; Luis Eslava & Sundhya Pahuja, 'The State and International Law: A Reading from the Global South' (2020) 11(1) Humanity: An International Journal of Human Rights, Humanitarianism, and Development 118, 123-124; Liliana Obregón Tarazona, 'The Civilised and the Uncivilised' in Bardo Fassbender & Anne Peters (eds.), *The Oxford Handbook of the History of International Law* (OUP 2012); Antony Anghie, 'Finding the Peripheries: Colonialism

ownership claims by any legal person; and thereby, appropriated to the British colonial regime as property.[39] This was the case even though indigenous peoples had been living on and using this land for a long time prior to British arrival.[40] Legal knowledge thus constructed this land as *res nullius*, a thing uninhabited or devoid of legal persons (which excluded indigenous peoples) but capable of being owned by legal persons (in this case, the British colonial regime.)

The production of such legal knowledge about the land was possible because modern property law is rooted in the classical liberal theory which postulates that property in land is created by an active labouring subject and the mode of production determines the level of such proprietary interests.[41] Such active labouring subject lies firmly in the Human category of the Human/Nature dichotomy discussed earlier.[42] Racialised constructions of Indigenous peoples did not allow for their recognition as Human. Instead, Indigenous peoples were constructed as a part of Nature; akin to animals. An anecdote from late 19th century the memoirs of an Englishman who had lived in the forested lands of Malabar Hills (governed by the British as "*Agency Areas*") for most of his professional life clarifies this racist philosophy as following: "(A)*nimals have no*

in Nineteenth-Century International Law' in *Imperialism, Sovereignty and the Making of International Law* (CUP 2005). *See* also, Elizabeth A. Povinelli, *Labour's Lot: The Power, History, and Culture of Aboriginal Action* (University of Chicago Press 1993) 11; Katharina Pistor, *The Code of Capital: How the Law Creates Wealth and Inequality* (Princeton University Press 2019) 23-27

[39] Kavita Philip, *Civilising Natures: Race, Resources, and Modernity in Colonial South India* (Rutgers University Press 2004) 38-39

[40] *Ibid.*

[41] For the foundational narrative of modern property law and its racialised colonial origins, *see* John Locke, *Two Treatises of Government* (1689) and William Blackstone, *The Commentaries on the Laws of England, Books 1 & 2* (1765-66), cited in Nicole Graham, *Lawscape: Property, Environment, Law* (Routledge 2011) 17. *See* also, Bhandar (2018), *supra* n. 38; Alain Pottage, 'Instituting Property' (1998) 18(2) Oxford Journal of Legal Studies 331, 340-344. For a study of how racial hierarchy has been further enacted in the context of tort and intellectual property law, *see* Brenna Bhandar, 'Disassembling legal form: ownership and the racial body' in Matthew Stone, Illan rua Wall, and Costas Douzinas (eds.), *New Critical Legal Thinking: Law and the Political* (Birkbeck Law Press 2012)

[42] *Supra,* §3.2

money and no need for it, and it is much the same with the villagers of the Agency whose lives have been set by a kind and merciful Providence very nearly upon the animal level….(T)*he characteristic which most distinguishes the Agency man from his fellows is a hopeless and absolute apathy. He does not want to do anything, he does not care about anything, he does not value or seek or aspire to anything— which is a shade trying when your ostensible object is the reformation of him and his country. He does not mind whether he lives or dies.*"[43]

Through this racialised distinction of Human and Nature, Indigenous peoples were constructed as passive objects of Nature without agency. Like other aspects of Nature, legally, this resulted in their construction as 'things' that did not have the capacity to own another legal thing viz., land under property law. Their land was thus legally constructed as *terra nullius,* 'negative space,' or public domain; a legal thing capable of being attributed to legal persons, but not yet claimed by one. The legal production of such land as *terra nullius* —passive object/thing claimed by no active subject/person— additionally enabled its legal construction *as a resource with potential to be exploited*. Given that the legal conceptualisation of the public domain is rooted in the legal history of *res nullius*[44], I propose that the legal concept of the public domain must also be understood in terms of this resourcing function. In this sense, to classify an entity as public domain is to render it into a legal thing viz., a passive object or a resource that seeks its fulfilment through attachment to a legal person i.e. an active subject. In other words, the claim of the public domain is a practice of resourcing,[45] which is enacted through the law.

[43] Civilian, *The Civilian's South India: Some Places and People in Madras* (John Lane 1921) 152–153, cited in Philip (2004), *supra* n. 39, 39

[44] Rose (2003), *supra* n. 33

[45] For discussion on the concept of resourcing see *supra*, §3.2. *See* also, Zoë Sofoulis, *Through the Lumen: Frankenstein and the Optics of Re-origination* (1988) Ph.D. Thesis, University of California Santa Cruz; Donna Haraway, 'Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective' (1988) 40(3) Feminist Studies 575, 592; Zoë Sofoulis, 'The Cyborg,

I suggest that it is against this larger context of public domain and resourcing that Julie Cohen's formulation of the biopolitical public domain of personal data needs to be approached. Such reading of Cohen's work in the context of colonial histories of the legal relationship between person and thing is essential for illuminating the deeper set of power relations that underlie the construction of data in data governance law. In her work, Cohen argues that the biopolitical public domain is the enabling legal construct for the activities of collecting and processing personal data in contemporary political economy.[46] In arguing this, she characterises the biopolitical public domain as having two distinct features: First, that such it constitutes personal data as available and potentially valuable.[47] And second, that the biopolitical public domain constructs personal data extracted in networked information environments as 'raw.'

According the first feature, personal data is constituted by the biopolitical public domain and not merely given. Cohen describes this construction as following: "*The process of constructing a public domain begins with an act of imagination that doubles as an assertion of power. An identifiable subject matter —a part of the natural world or an artifact of human activity— is reconceived as a resource that is unowned but potentially appropriable, either as an asset in itself or as an input into profit-making activity. The biopolitical public domain is a construct tailored to the political economy of informational capitalism*."[48]

Having laid down this function of the biopolitical public domain as a resourcing instrument, Cohen goes onto problematise this formulation of the public

its Manifesto, and their Relevance Today: Some Reflections' (2015) 6(2)Platform: Journal of Media and Communication 8-15

[46] Julie E. Cohen, *Between Truth and Power: The Legal Constructions of Informational Capitalism* (OUP 2019), 48- 49

[47] *Supra* n. 46, 49

[48] *Supra* n. 31, 214

domain. For Cohen, this biopolitical public domain is problematic because it is constructed in a manner that enables certain powerful actors in the political economy more access for appropriation of its resources; in contrast to other less powerful actors.

Cohen maps this asymmetry of access to the public domain across three broad arguments: First, that the highly automated modes of networked communication result in enrolment and consent for extraction of personal data in seamless and near-automatic ways; thus resulting in privileged access to data for owners of information businesses.[49] Second, that the public domain of data is colonised by a global network of elites through a two-step strategy that she dubs as the 'postcolonial two-step'; whereby data first is extracted and flown from Global South(s) to North for purposes of policing or development and then consolidated and made inaccessible.[50] And third, that these processes of consolidation of data are enacted through technologies of digital enclosure and legal instruments of contracts and trade secrets law that create walled gardens limiting data access to powerful networks of secrecy.[51] In all this, Cohen's focus of study is how the public domain constitutes the asymmetrical distribution of data— privileging access to small group of elite market participants over others. In this sense, Cohen's problematisation of the public domain of personal data is largely developed in terms of access and distribution of data. These issues of access and distribution of data have also been elucidated in more recent legal scholarship on data governance.[52]

[49] *Supra* n. 46, 57-59
[50] *Supra* n. 46, 59-62
[51] *Supra* n. 46, 62-63
[52] For recent legal scholarship in this regard, *see* Danielle Coleman, 'Digital Colonialism: The 21st Century Scramble for Africa through the Extraction and Control of User Data and the Limitations of Data Protection Laws' (2019) 24 Michigan Journal of Race and Law 417; Amba Kak, '"The Global South is everywhere, but also always somewhere": National Policy Narratives and AI Justice' (2020) AIES '20: Proceedings of the AAAI/ACM Conference on AI, Ethics, and

While such problematisation of the access and distributive politics of data through the biopolitical public domain is infinitely crucial, our analysis of the politics of the legal construction of data cannot be limited to it. I propose that the concept of the biopolitical public domain needs to be problematised not just at the level of access and distribution of data; but also, across matters of *data production.* Additionally, I propose that mapping the legal construction of data as public domain through the analytical category of representationalism can aid us in such problematisation. While Cohen's work does recognise that the biopolitical public domain constructs data as a resource or legal thing; it does not delve into why such construction of data as a resource is problematic, but rather focuses on distributive politics within the public domain. Unlike Cohen, my analysis instead invokes representationalism to deconstruct data as public domain and understand the politics underlying its production as legal thing in the first place.

As has been illustrated, the construction of data as part of public domain is a necessary construction of data as a legal thing. Since the public domain constitutes personal data as a passive thing that can be freely appropriated by the lawful claims of an active person, its construction implies the construction of personal data as *res nullius*. In other words, the legal thing of the biopolitical public

Society 307; Abeba Birhane, 'Algorithmic Colonisation of Africa' (2020) 17(2) SCRIPTed 389; Linnet Taylor, 'What is data justice? The case for connecting digital rights and freedoms globally' (2017) 4(2) Big Data & Society 1; Salome Viljoen, 'Democratic Data: A Relational Theory for Data Governance' (2021, forthcoming) Yale Law Journal <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3727562> accessed 15 September 2021; *supra* n. 31. For prior multidisciplinary scholarship regarding these questions of access and distribution in the context of data governance which legal scholars have not yet sufficiently engaged, *see*, Maria Soledad Segura & Silvio Waisbord, 'Between Data Capitalism and Data Citizenship' (2019) 20(4) Television & New Media 412; Oscar H. Gandy, Jr., *The Panoptic Sort: A Political Economy of Personal Information* (OUP 1993); Mark Andrejevic, 'Privacy, Exploitation, and the Digital Enclosure' (2009) 1(4) Amsterdam Law Forum 47; Miriam Aouragh & Paula Chakravartty, 'Infrastructures of empire: towards a critical geopolitics of media and information studies' (2016) 38 (4) Media, Culture & Society 559; Manuela Bojadžijev & Sandro Mezzadra, 'Debating Platform Capitalism' (2020) 7 Notas Y Discusiones, *Soft Power. Revista euro-americana de teoría e historia del apolitical y del derecho* 237

domain does not have meaning by itself. Rather, its meaningfulness is derived by constituting its usefulness, its belongingness, or its capacity to be claimed by a legal person. Through such legal configuration, personal data for instance appears as a *resource* to various legal persons like the data controller, the data processor, and the data subject under the EU General Data Protection Regulation.[53] In this manner, Cohen's conception of the biopolitical public domain can be extended to be understood as an enabling legal concept *that enacts resourcing of personal data (legal thing) to those recognised as participants in the political economy (legal persons). Furthermore, it is this process of resourcing which allows for the construction of personal data as legal thing.*

Nor is such resourcing through legal instruments limited to just personal data. The fundamentals of biopolitical public domain can be further extended to understand how legal concepts enable the resourcing of *all* data in contemporary political economies: Big data is constituted through mixed datasets of personal and non-personal data.[54] And as the centrality of big data to modern economy indicates, it is not just personal data; but also data which does not fall under the category of personal that is game for being economically exploited. Such data

[53] Under Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L119/1 or the EU General Data Protection Regulation (GDPR), the "data subject," (data) "controller", and the (data) "processor" are defined as follows:
A data subject or "*an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person*" (Art. 4(1), Regulation (EU) 2016/679); 'controller' means "*the natural or legal person, public authority, agency or other body which, alone or jointly with others, determines the purposes and means of the processing of personal data; where the purposes and means of such processing are determined by Union or Member State law, the controller or the specific criteria for its nomination may be provided for by Union or Member State law*" (Art. 4(7), Regulation (EU) 2016/679); 'processor' means "*a natural or legal person, public authority, agency or other body which processes personal data on behalf of the controller*" (Art. 4(8), Regulation (EU) 2016/679)

[54] European Commission, 'Guidance on the Regulation on a framework for the Free Flow of Non-Personal Data in the European Union' COM (2019) 250 final, 29 May 2019

includes supply chain data, data generated by industrial machines and Internet-of-Things, data about sales and high-frequency trading, and anonymised data about people and their preferences amongst others.[55] Similarly to personal data, non-personal data also needs to be legally constituted as a resource that is freely available for appropriation through legal claims in order to be economically exploited.

The legal concept of public domain likewise constitutes non-personal data as *res nullius* that can be legally claimed and given meaning by legal persons through various legal instruments like contracts, intellectual property or data governance law. Consequently, *the public domain becomes the legal concept that enables the construction of both personal and non-personal data; and consequently of big data, as a passive epistemological artefact or resource; which is valued or meaningful not in itself, but is rather made valuable and meaningful through the active agency of legal person(s)' rights and duties concerning it.* Law thus becomes an instrument for resourcing data or constructing data as a resource. Unlike Cohen's focus, the public domain therefore does not only serve as a legal construct implicated in the distributive politics of data as resource; but goes further: The public domain actually constructs data as a resource or a thing about which legal claims can be made. The politics which is illuminated here, then, concerns itself with the *production* of data as resource; and not merely questions concerning equitable access and distribution of data. As will be seen in Chapter 5, this shift in focus from the power relations implicated in the distribution of data towards a more comprehensive account that accounts for the power relations that law shapes in the more fundamental processes of data production has important implications for data governance.

[55] *Ibid.*

The process of construction of data as legal thing, thus, essentially involves thinking of data as a resource as conceptualised by representationalist non-legal knowledges of data outlined in the previous Chapter. In this manner, the representationalism of non-legal knowledges in their construction of data is reproduced within the law through the modern legal form, which imagines non-law to exist *a priori* to the law. In reality, however, this is a process of representationalist co-production of data through law and non-law. The legal concept of data as public domain and the non-legal concept of data as resource together imbue representationalist assumptions about data both in law and as part of the wider culture.[56]

Such representationalist co-production, moreover, has political implications. By enabling non-legal understandings of data as resource as *a priori* and natural to law through the modern legal form's Selbstreflektion and permitting and validating representationalist non-legal understandings of data through its permissive feature, the legal conceptualisation of data as public domain is pivotal to reinstating the political separation between ontological and epistemological claims within law. Through the construction of data as legal thing within the hierarchical person/thing dichotomy of law, the representationalist hierarchy between the observer and observed is also reproduced; whereby the agency of the latter is erased. Consequently, my argument is that a focus on distributive

[56] Given the scientific and technological interventions in the political economy of late 19th and 20th centuries that led to the construction of data as natural resource (*Supra,* §3.4), a parallel constitution of data as natural resource in legal thought is not surprising. This legal construction of data as a natural or naturalised resource is evident in metaphors of 'data gathering' and 'data collection' used in law and policy discourse. *See* for instance, Cornelius Puschmann & Jean Burgess, 'Metaphors of Big Data' (2014) 8 International Journal of Communication 1690; Christopher Olk, 'Data as a Resource? A Simplistic Metaphor and Its Policy Implications' (Policy Corner Blog, 16 December 2019) <https://www.policycorner.org/en/2019/12/16/data-as-a-resource-a-simplistic-metaphor-and-its-policy-implications/> accessed 12 December 2020; Luke Stark & Anna Lauren Hoffmann, 'Data Is the New What? Popular Metaphors & Professional Ethics in Emerging Data Culture' (2019) Journal of Cultural Analytics 1

politics of public domain without adequately accounting for its resourcing function is politically consequential. This is because it erases the particular material relationships performed by data *to instead construct data as an abstract legal object of epistemological realm that exists independently; and separate from the ontological politics of its production.*

How exactly does the notion of data as public domain produce a legal concept of data that is independent of the material relationships it performs? Answers to this might be found in an engagement with Cohen's second assertion that the biopolitical public domain constructs personal data extracted in networked information environments as 'raw.'[57] For Cohen, this framing of data as raw is problematic because "*the flexible and adaptive techniques used within contemporary surveillance environments are —and are designed to be— productive of particular types of information."*[58] This implies that while the technique of data extraction from internet users may be formally agnostic about the content of their preferences, it is "*not agnostic as to the kinds of information it collects and produces. As it operates, it generates new informational byproducts that are themselves artifacts of the patterns of spending and attention with which its designers are concerned*."[59] In other words, there is nothing raw about such data because practices of data collection and processing today are already predicated on the logic of seeing like a market.[60] Like Cohen notes, "*Inevitably, data collection activities are structured by basic judgments about what to collect, what units of measurements to use, and what formats and codings will be used to store and mark the data that are collected."* [61] She maps the processes of data collection and processing in contemporary political economy to illustrate how the

[57] *Supra* n. 46, 49
[58] *Supra* n. 31, 225
[59] *Ibid.*
[60] Marion Fourcade and Kieran Healy, 'Seeing Like a Market' (2017) 15(1) Socio-Economic Review 9
[61] *Supra* n. 31, 225

characterisation of data extracted from the public domain as 'raw' and its transition to processed or 'cooked' data favours certain powerful economic players over others.[62] This is achieved by justifying the enclosure of the public domain of data by surveillant data monopolies on the basis that they have a legal claim to the data they converted from 'raw' to 'cooked.'

Like other scholars before her,[63] Cohen certainly makes a pivotal point about the asymmetrical distribution of data power that is an outcome of the characterisation of data as raw or given. While agreeing with her analysis on this point, I seek to push it further. I argue that the characterisation of the public domain as a farm of 'raw' data enables not just the legal enclosure of such data for economic appropriation; *but critically does this by constructing the public domain of data as natural in consonance with the Human/Nature dichotomy* previously discussed in Chapter 3, which maps onto the legal dichotomy between the person and the thing. *The legal construct of the public domain thus constitutes data not just as resource, but particularly, as natural resource.*

What are the implications of such legal construction of data as Nature or natural resource through the legal instrument of the public domain? I outline three such implications here that are politically critical to the discourse of data governance and have far-reaching consequences for how data governance law is conceptualised and enacted. First, the naturalisation of data under representationalist assumptions depoliticises it by relegating it to the epistemological realm and separating it from the ontological politics of the observer/observed hierarchy. As already mapped, the naturalised resourcing of

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[62] *Supra* n. 46, 49-51

[63] *See* for example, Lisa Gitelman (ed.) *"Raw Data" Is An Oxymoron* (MIT Press 2013); danah boyd & Kate Crawford, 'Critical Questions for Big Data: Provocations for a Cultural, Technological, and Scholarly Phenomenon' (2012) 15(2) Information, Communication, and Society 662

data renders data as given and erases the observed's agency that is indispensable to the production of such data.[64] Instead of accounting for the agency of human and unhuman actors underlying creation of knowledge/data, the naturalised construct of the public domain implicit in modern data governance law assumes that data just happens to be there. The existence of data is given or taken for granted through such naturalisation, thus obfuscating the political processes of labour appropriation underlying data creation.

Second, the legal formulation of data both as resource renders it a passive artefact, which erases an important role that data/knowledge plays within the representationalist Western cultural archive viz. that of a resourcing instrument.[65] In Chapter 3, I have illustrated how representationalism enables the construction of data not just as a resource, but also as a *resourcing instrument* that is used to convert ontological entities like Earth, colonised peoples, and human bodies into passive observed that derive their value or meaning only from the agency of active knower. Because the creation of knowledge/data is predicated on constructing the hierarchy of the observer over the observed, epistemological production in this representationalist setup becomes directly implicated in the ontological exploitation of the observed. Treating data as a natural resource however, marginalises the utilisation of data as a resourcing instrument. The naturalisation of data i.e. its depoliticisation and reconstruction as passive, obliterates the ontology of data production processes. In other words, the legal construction of data as natural resource or as apolitical and passive, obscures the *active role that data plays* in instating material exploitation predicated on observer/observed hierarchy.

64 *Supra,* §3.2
65 *Supra,* §3.4

Naturalisation of data as the public domain or legal thing thus diminishes the use of data for resourcing by observing representationalism's separation between ontology and epistemology. This separation is evidenced even in the progressive discourse on data governance that inevitably ends up separating the issues of material exploitation in the data-driven political economy from the issues of representation and knowledge creation through big data. So, for instance, legal scholar Mireille Hildebrandt in her study of the affordances of data-driven agency and the digital unconscious and their impact on processes of knowledge-creation, is able to exclude questions concerning the digital political economy.[66] Similarly, in her work Julie Cohen notes that the processes implicated in conversion of data from 'raw' to 'cooked' are "*only secondarily an apparatus for producing knowledge.* [They are] *principally an apparatus for producing wealth.* [Their] *actions express both a distinctive logic of economic accumulation and an equally distinctive logic of legal privilege."*[67] While emphasising different themes, both of the above approaches to studying data governance exhibit a tendency to carve distinct and separate spheres of engagement for the discourses of knowledge creation and political economy of data.

While it is true that both Hildebrandt and Cohen underscore the importance of the role of data-driven agency in the political economy, neither their analysis of data-driven agency nor of the political economy of data accounts for the role of data as a resourcing instrument. This exclusion enables them to compartmentalise issues of human and unhuman data-driven agency away from issues of the political economy of privacy and unjust exploitation in data economies, and then juxtapose these two compartmentalised discourses such that (a) in Hildebrandt's work, the political economy serves as the background for the

[66] Mireille Hildebrandt, *Smart Technologies and the End(s) of Law: Novel Entanglements of Law and Technology* (Edward Elgar 2015) 14-15
[67] *Supra* n. 31, 229

data-driven knowledge creation, and (b) in Cohen's work, the data-driven knowledge creation appears as a collateral of data's political economy, which stands in the foreground.

By contrast, a full accounting of data-driven agency would realise the impossibility of compartmentalisation of the discourse of knowledge production away from the discourse of the political economy of data by taking the claim of data as resourcing instrument seriously. This is because, as illustrated in the previous Chapter, an account of data as resourcing instrument evidences that the processes of production of data in scientific capitalism and that of the construction of colonial relations between the land, peoples and technology through their construction as economic resource, are one and the same. In other words, the modern production of data is inextricably intertwined with the exploitative resourcing of land and its peoples. Taking the understanding of data as a resourcing instrument seriously would then imply the impossibility of separating and compartmentalising the discourse of the politics of data and knowledge production, on the one hand; and that of the exploitation heaped by the political economy of data, on the other.

Unfortunately, this is not the case: As illustrated, a lack of full recognition of the agency of the observed underlying data/knowledge creation processes still plagues even the most progressive legal scholarship on data governance. The exclusion of its resourcing function from the discourse of human and posthuman agencies in contexts of data technologies on the one hand; and on the other, the marginalisation within law and political economy analyses of human and unhuman agency underlying the production of data enables the perpetuation of unaccountability for this data-driven agency in legal discourse. This discursive separation between questions of digital political economy and

that of human and unhuman agency in the context of data creation is a residue of representationalist assumptions about data that erase the (human and unhuman) observed's agency from the process of data production.

Third, and consequentially, erasure of the role of data as a resourcing instrument through its naturalisation as public domain serves to de-link data from the ontological conditions of its production. The dichotomous separation of ontology and epistemology (in other words, representationalism) which functions to obfuscate the role of data as a resourcing instrument is also the basis for constructing data as an epistemological artefact which *merely describes ontological relationships without intervening in them*. Such (illusion of) description without intervening is a possibility only in the representationalist tradition of knowledge-making. However, instead of situating this particular understanding of knowledge/data within the Western cultural archive with its particular history of colonial exploitation, the legal construct of public domain of data rooted in the ontology/epistemology dichotomy, universalises it. *Legally, data then becomes a subset of epistemological representation, which while describing ontological/material relationships, does not depend on these material relationships to exist.* The particularities of what it describes and the material conditions of its creation then do not mark the legal concept of data. Rather, data is presumed to have a life of its own, which is separable from the conditions of its production.

The legal formulation of data as naturalised public domain, thus, serves to infuse a universal and abstract character to data which is independent of its ontological situatedness: It does not matter what material relationship it describes; it is enough that it is a representation to be governed as data. Data is conceptualised and governed as an apolitical and abstract legal thing that is separated and unaccountable for the ontological relations it produces. The legal construction

of data in data governance law thus appears devoid of material particularities. This representationalist process which divorces data as epistemological resource from the ontology of its production may be understood as a process of abstraction of data, which allows for its conceptualisation as the public domain thus enabling its exploitation as a resource.

4.5. Conclusion

This Chapter has mapped how representationalist assumptions about data are co-produced in law by legal and non-legal knowledges (or simply, law and non-law) within the modern legal form. To do this, I have highlighted the relationship between non-law and law, and the political implications of the enabling and permissive features of modern law's Selbstreflektion in the co-production of representationalism within the concept of data in modern law. Thereafter, I have argued that such co-production is further enabled by the specific legal concept of public domain that functions within the person/thing dichotomy of Western law to construct data as legal thing. In doing so, I have explored how representationalism from the non-legal construction of data as natural resource and resourcing instrument is translated into the law through the construction of data as thing via the concept of the public domain. In this context, the Chapter argues that we need to problematise Cohen's conception of the biopolitical public domain not just in terms of access and distribution of data but also in terms of production of data. As will be seen in the following Chapter, the import of this shift in framework from distribution to production of data is not limited to just intellectual property law; but has implications for illuminating the politics of data governance law as well.

The present Chapter has further mapped the political implications of law's representationalism in the construction of data as a natural resource. These include: (1) the depoliticisation of data through its naturalisation as a resource, (2) the separation of the legal discourses of exploitation in the digital political economy and of the reconfiguration of human and unhuman agencies in data societies. I have argued that such separation is enacted through the representationalist erasure of the observer's agency in the process of data production within data economies today. (3) Lastly, I have argued that representationalist assumptions underlying the legal conception of data lead to the abstraction of data whereby data is assumed to be an epistemological artefact that exists separately from the ontological politics of observer/observed implicated in its production. Throughout this analysis however, my approach to law has been rather general. The following Chapter examines how these representationalist assumptions underlying the construction of data as thing through the legal concept of public domain are enacted in the specific context of EU data governance law.

CHAPTER 5

DATA BETWEEN THE LEGAL PERSON AND THING

"…I refuse, reject, resist your labels,
Your judgments, documents, definitions…" [1]

5.1. Personal and Non-Personal Data

The previous Chapter mapped how representationalist assumptions about data are co-produced with the non-law through the legal construction of data as thing, by constructing data as a resource within the public domain. The present Chapter examines how such construction of data as legal thing occurs in the specific case of data governance law. In this context, I examine the particular case of the EU.

In the EU, as in many other jurisdictions, one of the key mechanisms for data governance is enacted through the binary categories of personal and non-personal data. In this context, personal data is defined under the General Data Protection Regulation (GDPR) as "*any information relating to an identified or identifiable natural person ('data subject'); an identifiable natural person is one who can be identified,*

[1] Abhay Flavian Xaxa, 'I am not your data' (2011) <https://www.roundtableindia.co.in/i-am-not-your-data-nor-am-i-your-vote-bank-in-memoriam-sociologist-and-activist-abhay-xaxa-2/> accessed 19 February 2021

directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person."[2] Non-personal data, on the other hand, is defined by exclusion under the Free Flow of Non-Personal Data Regulation as "*data other than personal data as defined in point (1) of Article 4 of Regulation (EU) 2016/679*" or under the GDPR[3]. The distinction between these categories of data is relevant since different legal rights and obligations apply to each category. Despite these differences, however, I propose that the notion of data as legal thing is common to both these categories.

The present Chapter suggests that within the EU, the conceptual understanding of data as public domain manifests as the Digital Single Market. Furthermore, that the categories of non-personal and personal data for the governance of this Single Market provide the framework through which EU data governance law constitutes data as a negotiation between legal person and legal thing. Through such a negotiation, data governance law assumes data as part of the (biopolitical) public domain; while also drawing upon non-legal knowledges of data as resource. In this manner, this Chapter argues that the representationalist assumptions underlying the constructions of data as public domain and as resourcing instrument, number, and resource are translated into the conceptualisation of data under data governance law. Accordingly, it maps how the conception of data as public domain has been central to the construction of the European Digital Single Market through the development of law and policy promoting open data and the principle of free flow of data; and its distribution among various legal

[2] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L119/1, Art. 4(1)

[3] Regulation (EU) 2018/1807 of the European Parliament and of the Council of 14 November 2018 on a framework for the free flow of non-personal data in the European Union [2018] OJ L303/59 (FFD Regulation), Art. 3(1)

persons. Through such mapping, I argue that along with the construction of data by Western science, the legal framework establishing the European single market for data functions to co-produce data as a commodity for trade. In this regard, it shall be illustrated how the EU data governance law —particularly under the principles of open data and free flow of data in the context of non-personal data— draws upon the assumption of data as public domain to construct data as commodity and as legal thing within the person/thing dichotomy. Such mapping seeks to illuminate the representationalist assumptions underlying such construction of data as commodity.

Thereafter, this Chapter grapples with the category of personal data: Even as data is offered as a commodity, a particular category of data that identifies natural persons is deemed problematic for inclusion in such market practices. I trace why such data was seen as resistant to commodification by tracing the history of understanding of certain data as person in law under the legal regime of personality rights. Building upon this, the Chapter maps how the emergence of data protection law enabled the conversion of such data into legal thing such that it had a special status compared to other kinds of data; but could still be commodified and traded in the single market. In mapping this, the argument is that EU data protection framework serves an important function of data governance viz., the enabling of the Digital Single Market by constructing data as an abstract legal thing thus co-producing representationalist assumptions into data governance law. In the process, it is illuminated that the category of personal data assists in the erasure of observed's agency in the creation of data. Additionally, that the lack of accounting within the legal discourse for the observed's (natural person's) agency in the production of personal data creates a politics of exclusion within modern data governance law.

5.2. Data as Commodity

As illustrated in the previous Chapter, the legal category of the public domain constructs data as a legal thing such that it is conceptualised as an abstract epistemological resource. Such resourcing of data through law however does not stop here but goes further. The abstract conceptualisation of data as public domain is necessary for a legally-sanctioned commodification of data. Here, it is important to distinguish between resourcing and commodification of data. 'Resourcing' is a concept I borrow from Zoë Soufoulis' work to mean the conversion of observed and knowledge into passive entities to be materially used for exploitation by observers.[4] On the other hand, by 'commodification', I refer to the specific mode of resourcing that subsumes a set of social relations into 'commodity.'[5] In what follows, I propose that within the context of data, such commodification occurs via the subsumption of the observed, knowledge, and observers into the logics of the market to create data as commodity. Given this, commodification may be understood as a subset of resourcing. Whereas all commodification corresponds to resourcing, not all resourcing is automatically commodification. So, for instance, data may be a resource for the State when it is generated to incarcerate people to keep a system of racial hierarchy in place,[6]

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[4] *Supra,* §3.2

[5] Here, I draw upon Karl Marx's understanding of commodity as comprising of both use value and exchange value: "*To become a commodity a product must be transferred to another, whom it will serve as a use value, by means of exchange.*" Karl Marx & Frederick Engels, *Capital, Vol. 1* (International Publishers 1996) 51

[6] For a discussion of contexts whereby big data is used to police and incarcerate people in ways that reinforce white supremacy s*ee*, Jessica Eaglin, 'Constructing Recidivism Risk' (2017) 67 Emory Law Journal 59; Ruha Benjamin, 'Assessing Risk, Automating Racism,' (2019) 366(6464) Science 421; Jacqueline Wang, *Carcereal Capitalism* (MIT Press 2018)*;* Oscar H. Gandy, Jr., 'The Algorithm Made Me Do It! Technological Transformations of the Criminal Justice System' (2019) 7(2) The Political Economy of Communication 3; Jeff Larson, Surya Mattu, Lauren Kirchner, and Julia Angwin, 'How We Analysed the COMPAS Recidivism Algorithm', Propublica, 23 May 2016 <https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm> accessed 25 September 2021; Jessica Eaglin, 'Technologically Distorted Conceptions of Punishment' (2019) 97 Washington University Law Review 483. *See* also, Ruha Benjamin, 'Catching Our Breath: Critical Race STS and the Carcereal Imagination' (2016) 2 Engaging Science, Technology, and Society 145

without necessarily being commercialised or commodified in such cases. In both cases however, data is treated as a legal thing.

In the EU political economy, however, the public domain of data or data as thing manifests through the Single Market for data or the Digital Single Market that is established through law and policy frameworks of the EU.[7] The present-day Digital Single Market of EU is very much a creature of legal design. In the context of data governance, its birth can be traced to the 1960s when the rise of commercial computing technologies had begun to impact the organisation of value chains in the global political economy. In 1968, the 3rd Ministerial Conference on Science organised by OECD noted that new techniques like computerisation could help facilitate the exchange of scientific and technical information necessary for national and international economic development.[8] Accordingly, it was recommended that the OECD pay special attention to the progress of information techniques and evaluate their influence on the "*presentation, processing, transfer, and utilisation of scientific and technical information and data*."[9] In parallel, OECD Members were encouraged to develop strategies for co-operation in order to establish compatible standards for data processing, storage, and transfer technologies, so as to close the "*technological gaps*" necessary for economic development.[10] Within international policy discourse, data was thus assigned a leading role in the functioning of the political economy.

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[7] European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions on A Digital Single Market Strategy for Europe', COM/2015/0192 final, 6 May 2015

[8] Organisation for Economic Co-operation and Development, 'Scientific and Technical Information Systems and Policies' (1968) 1968(2) The OECD Observer 4 <https://www.oecd-ilibrary.org/economics/oecd-observer/volume-1968/issue-2_observer-v1968-2-en> accessed 20 September 2021

[9] Organisation for Economic Co-operation and Development, 'Recommendations on Scientific and Technical Information Systems and Policies' (1968) 1968(2) The OECD Observer 50 <https://www.oecd-ilibrary.org/economics/oecd-observer/volume-1968/issue-2_observer-v1968-2-en> accessed 20 September 2021

[10] *Ibid.*

OECD developments also influenced law and policymaking in the European Economic Community that served as a precursor to EU in an earlier stage of European integration. Pursuant to OECD Ministerial Conference, the European Commission issued a Communication on Community Policy on Data Processing in 1973 that was aimed at developing a common European policy in light of the growing data economy. The Communication identified the dominance of US and Japanese industry in computer and data-processing technologies as a challenge to the growth of European industry in this field. Drawing on Article 86 of the Treaty Establishing the European Economic Community, it recommended ensuring that such dominant position —especially of the US-based firm IBM— was not abused in European markets.[11] In addition, the Commission proposed that the Community policy on data processing should focus on two main types of actions aimed at fortifying European competitiveness in data markets viz., the development of the capacity of Europe-based industry, and the promotion of the effective use of data processing.[12] It was suggested that public investment in central processing units, peripherals, and expansion of data markets was necessary to achieve these goals.[13] This proposal resulted in the adoption of the Resolution on Community Policy on Data Processing in 1974 by the Council, which emphasised the need for transnational co-operation to strengthen European industry in the field of data processing applications.[14]

By the middle of 1970s, European legal institutions had begun to carve strategies for developing economic competitiveness at an international level by harnessing data as a resource; thus, drawing upon representationalist non-legal constructions

[11] Commission of the European Communities, 'Communication of the Commission to the Council on Community Policy on Data Processing', SEC (73) 413 final, 21 November 1973, ¶2
[12] *Supra* n. 11, ¶5
[13] *Supra* n. 11, ¶9, 13, 18-26
[14] Council Resolution on a Community Policy for Data Processing [1974] OJ C 86, 1-1 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31974Y0720(01)> accessed 20 September 2021

of data. The development of data as public domain was crucial to such strategising. Over the subsequent decades, two broad and interrelated legal developments in European data governance that enabled the resourcing of data as public domain within a consolidated Digital Single Market, can be discerned. These are: (a) the emergence of a European open data framework and (b) the evolution of the principle of free flow of data.

5.2.1. Data as Open

Open data refers to data that anyone can access, share or reuse. According to the Open Definition, which has been influential for open data movements, opensource sharing, and software development, open data can be defined as "*data that can be freely used, modified, and shared by anyone for any purpose subject, at most, to measures that preserve provenance and openness*."[15] While this definition of open data has been rightfully critiqued for its lack of accounting for how this data is used and from whom said data is extracted,[16] it has nevertheless remained an influential understanding of open data in legal and policy discourses. Usually, such open data is rendered from public sector data viz., "*all the information that public bodies in the European Union produce, collect, or pay for.*"[17] Examples include

[15] Open Knowledge Foundation, 'Open Definition 2.1' <https://opendefinition.org/od/2.1/en/> accessed 20 September 2021; Bastiaan van Loenen, Glenn Vancauwenberghe, Joep Cromvoets, and Lorenzo Dalla Corte, 'Open Data Exposed' in Bastiaan van Loenen, Glenn Vancauwenberghe, Joep Cromvoets (eds.) Open Data Exposed (Springer 2018) 3. *See* also, the EU Open Data Directive, which states, "*Open data as a concept is generally understood to denote data in an open format that can be freely used, re-used and shared by anyone for any purpose. Open data policies which encourage the wide availability and re-use of public sector information for private or commercial purposes, with minimal or no legal, technical or financial constraints, and which promote the circulation of information not only for economic operators but primarily for the public, can play an important role in promoting social engagement, and kick-start and promote the development of new services based on novel ways to combine and make use of such information*." Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information [2019] OJ L 172 (Open Data Directive), Recital 16

[16] *See* for instance, Tim G. Davies & Zainab Ashraf Bawa, 'The Promises and Perils of Open Government Data' (2012) 8(2) The Journal of Community Informatics 1; Rob Kitchin, *The Data Revolution: Big Data, Open Data, Data Infrastructures & Their Consequences* (Sage 2014)

[17] European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions on

geographical information, weather data, data generated through publicly-funded research projects, digitised public library books, traffic data, and statistics produced by government census or other processes of public administration.[18]

Because open data is understood as data which can be freely used, modified, and shared, it can be understood to reflect the legal conception of data as commons or public domain as described in Chapter 4. By virtue of being 'free,' open data as non-personal data is understood to be a resource not yet attached to a singular legal person. Within the Digital Single Market of the EU, open data may thus be understood as one manifestation of the concept of data as public domain.

5.2.1.1. Justifications for Opening Data

The seeds of EU's open data framework were sown in 1989 when the Commission issued Guidelines for Improving the Synergy between Public and Private Sectors in the Information Market.[19] The Guidelines recognised the important role that public administrations play in 'collecting' basic data and information in the performance of their governmental functions as well as the value of such data beyond their use by governments.[20] Given the large-scale production of data by government bodies and the risk-aversion of the newly emerging database industry in Europe, the Guidelines recommended that the European public sector adopt policies and procedures that encourage investment by the private sector into the development of information services based on

Open Data: An Engine for Innovation, Growth, and Transparent Governance' COM(2011) 882 final, 12 December 2011, 2

[18] *Ibid.*

[19] Commission of the European Communities, 'Guidelines for Improving the Synergy between Public and Private Sectors in the Information Market' CD-54-88-126-EN-C, 31 December 1989 <https://wayback.archive-it.org/12090/20210424121651/https://ec.europa.eu/digital-single-market/en/news/guidelines-improving-synergy-between-public-and-private-sectors-information-market> accessed 20 September 2021

[20] *Supra* n. 19, ¶1

public sector data.[21] Additionally, the Guidelines recommended the public procurement of information services to support the fledging European data processing industry.[22] This was followed by the 1998 Aarhus Convention that mandated European States to make environmental and climate data available through electronic databases.[23] Subsequently, in 1999, the Commission issued a Green Paper on public sector information, which outlined the importance of access to public sector information in order to create opportunities for economic growth and employment in the Single Market.[24] Especially in light of the earlier Community policies that sought to increase the competitiveness of the European data processing industry in the global market, the re-use of public sector data has served to create the raw material or resource for the European data industry. This is strengthened by the creation of the EU Open Data Portal which provides a single point of formal open standard access to public sector data produced by EU institutions and agencies[25] as well as EU's Open Research Data policy that promotes open access sharing of scientific research.[26]

The opening of public sector information in Europe was justified not only by citing its importance for the creation of a European data market; but also, through a distinct narrative advocating for increased transparency facilitated by a

[21] *Supra* n. 19, ¶7

[22] *Supra* n. 19, ¶14

[23] Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters (adopted 25 June 1998, entered into force 30 October 2001) 2161 UNTS 447 (Aarhus Convention), Art. 5¶3

[24] European Commission, 'Green Paper on Public-Sector Information in the Information Society' IP/99/32, 20 January 1999 <https://ec.europa.eu/commission/presscorner/detail/en/IP_99_32> accessed 20 September 2021

[25] European Union, 'Overview' Open Data Portal <https://data.europa.eu/en/impact-studies/overview> accessed 20 September 2021

[26] European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Horizon 2020 – The Framework Programme for Research and Innovation * COM/2011/0808 final *, 30 November 2011

right to information concerning public decision-making processes. Accordingly, since at least the 1990s, European instruments on open data have rationalised the opening of public sector data by framing it as a tool for increasing citizen participation in State administration and the consequent strengthening of democratic life. So, for instance, the 1998 Aarhus Convention lays down its objective as following: "*In order to contribute to the projection of the right of every person of present and future generations to live in an environment adequate to his or health and well-being, each Party shall guarantee the rights of access to information, public participation in decision-making, and access to justice in environmental matters in accordance with the provisions of this Convention.*"[27]

Similarly, the 1999 European Commission Green Paper dedicates a whole section on the importance of opening public sector data for taking advantage of European Community rights like the freedom of movement[28] as well as for citizen participation in the European integration process.[29] It stresses the need "*to bring the European Union closer to the citizens by making it more transparent and closer to everyday life through the EU's commitment to allowing the greatest possible access to information on its activities."*[30] The Green Paper further goes on to state, *"This is a concern for the EU and the Member States together since a significant part of the information related to the European Union activities is actually held at national level. It seems thus important that European citizens have a right of access not only to documents held by the institutions, but also to EU-related information, in the broadest sense, available in the Member States."*[31] The opening of public sector data is, thus, linked to values of public

[27] *Supra* n. 23, Art. 1
[28] Here, the reference is to the freedom of movement as provided under: Consolidated Version of the Treaty on European Union (26 October 2012) OJ C 326 (TEU), Art. 3(2); Consolidated Version of the Treaty on the Functioning of the European Union (26 October 2012) OJ C 326 (TFEU), Art. 21, Titles IV and V; Charter of Fundamental Rights of the European Union (26 October 2012) OJ C 326 (The Charter), Art. 45
[29] *Supra* n. 24, ¶15-17
[30] *Supra* n. 24, ¶20. *See* also, ¶21-22
[31] *Ibid.*

participation, access to justice, and right to information, which are widely understood as the values of modern democracy.

In this manner, the creation of a Single Market for data processing and citizens' participation in democratic decision-making can be identified as two competing narratives underlying the opening up of public sector data since the earliest negotiations of the legal construction of data as commons or public domain. Ever since, these two narratives of open data have manifested in European and EU legal instruments.

To cite another instance in wake of the 1999 Green Paper, the 2003 Directive on Public Sector Information ('PSI Directive') was enacted as part of EU data governance law. The PSI Directive mandated the opening of public sector data by making it accessible; along with metadata, in electronic and machine-readable formats based on open standards.[32] This measure was intended to make public sector data available in interoperable and digitised formats in order to make public sector information open and re-usable. But how was such a legal measure justified? As outlined by the Recitals of the Directive, the rationale for such opening of public sector data was twofold: On the one hand, the Directive considered the re-use of public sector data to be "*a pre-condition for the development of a Community-wide information market.*"[33] On the other hand, it also underscored that opening public sector data on political, legal, and administrative processes is "*a fundamental instrument for extending the right to knowledge, which is a basic principle of democracy.*"[34] The PSI Directive was amended in 2013[35] and has been repealed and

[32] Directive (EU) 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information [2003] OJ L 335 (PSI Directive), Art. 5
[33] PSI Directive, *Supra* n. 32, Recital 15
[34] PSI Directive, *Supra* n. 32, Recital 16
[35] Directive (EU) 2013/37/EU of the European Parliament and of the Council of 26 June 2013 amending Directive 2003/98/EC on the re-use of public sector information [2013] OJ L 175 (PSI Amendment)

replaced by the 2019 Directive on Open Data and the Re-use of Public Sector Information ('Open Data Directive') since. Both the 2013 amendment and 2019 Open Data Directive, nevertheless, echo the PSI Directive in providing similar two-pronged justification for the opening of public sector data.[36]

In effect, all these legal and policy initiatives to promote open data should, thus, be understood as a move to expand the production of data as public domain resource. The expansion of open data creates a public domain, whereby data can imputably be freely used and exploited by anyone. The creation of open data (or, data as public domain), in this manner, creates the possibility of creation of data as commodity in the Digital Single Market of the EU.

5.2.1.2. From the Binary to a Dialectics of Open and Closed Data

Simultaneously, it should be noted that these legal developments have stemmed from as well as result in an open data discourse that is structured upon the binary understanding of data as open *versus* closed. As seen, the push for opening public sector data is justified not only for fostering a European market on data; but also, on the grounds of transparency and democracy. As a result, open data has largely come to be inherently seen as a public good. In contrast, closed data is seen as an impediment, a throwback to the old system of proprietary knowledge that prevents not just fair competition and development of the data processing industry; but also hinders public participation in governmental and administrative

[36] With regard to this two-pronged justification provided on the one hand, on the basis of consolidating the European data market, compare PSI Directive, *Supra* n. 32 and Open Data Directive, *Supra* n. 15, Recital 41, both of which use the same language to outline that the Directive seeks to ensure that "*that the conditions for re-use of public sector documents are clear and publicly available is a pre-condition for the development of a Community-wide information market*." For the second prong of this justification for the opening of public sector data on the basis of democratic concerns, compare PSI Directive, *Supra* n. 32, Recital 16 and the Open Data Directive, *Supra* n. 15, Recital 43, both of which read, "*Making public all generally available documents held by the public sector — concerning not only the political process but also the legal and administrative process — is a fundamental instrument for extending the right to knowledge, which is a basic principle of democracy. That objective is applicable to institutions at every level, be it local, national or international*."

processes. Within such a binary formulation, closed data thus comes to be understood an attack on the right to information and democracy itself.

Such binary formulation of data as open v. closed is entangled with the intellectual property discourse, whereby knowledge is framed in the binary of public domain v. enclosure. As a manifestation of *res nullius* form of legal thing in data governance law, open data mirrors the construction of the public domain as liberating commons. The view that —because the public domain is framed as the opposite of enclosure, it is a space of freedom and public good— has become quite influential in the past three decades. This position, however, needs to be problematised; increasingly so, in the wake of data technologies like AI.

In their seminal article on traditional knowledge, intellectual property, and the politics of the public domain, legal scholars Anupam Chander and Madhavi Sunder have outlined how such discursive binaries between public domain and enclosure actually serve to conceal the dialectical relationship between the two. They observe, "*The binary framework suggests that, normatively, the public domain stands in opposition to intellectual property—that the public domain is a bulwark against propertization and an alternative to intellectual property. But in fact, the public domain is essential to our private property system because it offers a sphere of free works upon which capitalists can draw without either seeking consent or drawing liability.*"[37] Drawing upon this argument, I propose that understanding open and closed data as part of a simplistic binary framework is problematic. This is because open data has, in fact, been essential to facilitating the lockdown of data by large corporations. In effect, this assertion implies that the dialectic of public domain and enclosure also plays out in data governance law as the dialectic of open and closed data. Rather than

[37] Anupam Chander and Madhavi Sunder, 'The Romance of the Public Domain' (2004) 92(5) California Law Review 1331, 1344

existing in binary opposition, there is a constant co-production of open and closed.

How does this dialectical relationship manifest? As illustrated before, one justification for opening public sector data provided in EU law and policy frameworks has been the development of the competitiveness of the European industry through the effective utilisation and re-use of data either by making it accessible free of cost; or by licensing it under an open, non-exclusive license. Public sector data has thus been 'opened' and commodified. Much of the data generated and maintained by public and State bodies has, thus, been pushed into public domain where presumably any legal person can harness, process, build on, and trade services based on such data in an open market.[38] Closed governmental data has become open. Simultaneously, the increasing use of open data by private corporations has enabled its closure through the legal ownership of infrastructures of data extraction and surveillance (electronic devices, internet content, mobile apps etc.) as well as the strategic deployment of intellectual property and the secret networks of contracts that characterise the contemporary political economy of data.[39]

Framing open and closed data as a dialectical relationship in this manner allows us to account for the processes of commodification implicit in the structure of open data. This approach stands in contrast to the framing of open *versus* closed data as a mutually exclusive binary whereby the latter is seen as constraining and undemocratic and former is perceived to be inherently positive; when in fact,

[38] At the same time, it should be noted that there are notable exceptions to this opening of public sector data, for instance on the grounds of statistical confidentiality and national security, *see* Art. 1(2), Open Data Directive, *Supra* n. 15. For the purpose of my argument however, I limit the discussion to that public sector data which has been relevant to the growth and development of the Digital Single Market in the EU.

[39] Julie Cohen, *Between Truth and Power: The Legal Constructions of Informational Capitalism* (OUP 2019) 62-64

open data frameworks can also be complicit in the inequality and injustice experienced in contemporary digital economies. I make this argument, of course, not to dismiss the many benefits of open data nor to simply invert the discourse to claim that open data is inherently bad. Both the opening of public sector data, and the movements for access to information and to knowledge have been key to upending the gatekeeping power of private corporations holding intellectual property and of apathetic State bureaucracies. Indeed, EU's Open Research Data Policy enables access to scientific research by piercing enclosures set by intellectual property regimes. Additionally, the Commission notes that opening up public sector data for re-use can enhance evidence-based policy making and increase the efficiency of public administration.[40] These are both laudable developments.

My intention, then, is not a takedown of open data to move towards the closed. Rather, it is to propose that moving from the binary approach towards a dialectical framing of the relationship between open and closed data is critical for challenging the romanticisation of open data in the data governance discourse. Such romanticisation of open data occurs along lines similar to what Chander and Sunder call the 'romanticisation of the public domain' within intellectual property discourses. They note, "*The public domain movement leaves the common person to the mercy of an unregulated marketplace where she must struggle to realise her rights. Public domain advocates seem to accept that because a resource is open to all by force of law, that resource will indeed be exploited by all. In practice however, differing circumstances —including knowledge, wealth, power, and ability— render some better able than others to exploit a commons. We describe this popular scholarly conception of the commons as 'romantic'; the conception adopts the idealism assimilated into Romantic aesthetics.*"[41](sic) Analogous and

[40] European Commission, 'Open Data,' Shaping Europe's Digital Future, 23 September 2021 <https://digital-strategy.ec.europa.eu/en/policies/open-data> accessed 26 September 2021
[41] *Supra* n. 37, 1340-41

quite often entangled with these developments in the field of intellectual property, open data has also been romanticised in ways that obscure the asymmetries of power structuring the 'open.'[42] Just because data is made open by force of law does not mean that everyone shall be in an equal position to harness it. Differences in circumstances, wealth, and accessibility to other resources needed for exploiting such data mean that not everyone is able to utilise open data.[43] Critiques of the commodification of data through its legal construction as open data needs to account for the distributive politics of such data i.e., in terms of who is able to access and exploit it.

5.2.1.3. Power Relations Implicated in Open Data as Commodity

Although the problematic implication of romanticising open data through an open v. closed binary have scarcely been acknowledged in legal scholarship,[44] it has not gone unnoticed by scholars and activists engaging with community data within the open data movement. These engagements outline the distributive politics of data as commodity through its construction as open data further. So it has been noted that the effective utilisation of public sector data through re-use has historically meant the conversion of what was once data generated through public funding into a 'free' market commodity, accessible to only those with adequate resources to exploit it.[45] Despite being declared as accessible to

[42] Margaret B. Kwoka, 'FOIA Inc.' (2016) 65 Duke Law Journal 1361

[43] *Ibid.* *See* also, Davies and Bawa(2012), *Supra* n. 16

[44] Notable exceptions in this regard are the works of Kwoka (2016), *Supra* n. 42; Balázs Bodó, 'Was the Open Knowledge Commons Idea a Curse in Disguise?- Towards Sovereign Institutions of Knowledge' (2019) Draft prepared for the Public Library and Property Forum, London, 12 October 2019 <http://dx.doi.org/10.2139/ssrn.3502119> accessed 20 September 2021

[45] A number of community data scholars as well as scholars from the Global South have made this point. *See* for instance, Nishant Shah, 'Big Data, People's Lives and the Importance of Openness,' hastac, 25 June 2013 <https://www.hastac.org/blogs/superadmin/2013/06/25/nishant-shah-big-data-peoples-lives-and-importance-openness> accessed 20 September 2021; Nithya V. Raman, 'Collecting data in Chennai City and the limits of openness' (2012) 8(2) Community Informatics and Open Government Data <https://doi.org/10.15353/joci.v8i2> accessed 20 September 2021; Kitchin (2014), *Supra* n. 16; Marijn Janssen, Yannis Charalabidis & Anneke Zuiderwijk, 'Benefits,

everyone by force of law, the common pool of open data is not always accessible to everyone in practice.[46] Rather, it often promotes the freedom of a privileged guild of technically-skilled developers at the expense of others who are less privileged.[47] Other studies show that the opening of public sector data can and has led to further disenfranchisement of those legal persons who are already marginalised.[48]

Blatant and decontextualised opening of public sector data has, thus, been shown to empower powerful private actors at the expense of marginalised people in the political economy of data. The commodification of public sector data as *res nullius* in data governance law grants any legal person the potential to make a rightful legal claim for its enclosure by making such data attributable to the abstract notions of 'anyone,' 'everyone' and 'all.' 'Open,' here, becomes the enabler of the closed and of the channelling of public resources into private hands viz., commodification. At the same time, the power to make a legal claim

Adoption Barriers, and Myths of Open Data and Open Governement' (2012) 29(4) Information Systems Management 258; Jo Bates, '"This is what modern deregulation looks like": Co-optation and contestation in the shaping of the UK's Open Government Data Initiative' (2012) 8(2) Community Informatics and Open Government Data <https://doi.org/10.15353/joci.v8i2> accessed 20 September 2021

[46] Davies and Bawa (2012), *Supra* n. 16, 4. See also, Janssen et al (2012), *Supra* n. 45

[47] David M. Berry, *Copy, Rip, Burn: The Politics of Copyleft and Open Source* (Pluto Press 2008). *See* also, for the differences between the wider open access/data initiatives and the access to knowledge (A2K) movement or the so-called 'guerilla open access movement,' Balázs Bodo, 'Pirates in the library—an inquiry into the guerilla open access movement' (2016) 8th Annual Workshop of the International Society for the History and Theory of Intellectual Property, CREATe, University of Glasgow, UK <http://dx.doi.org/10.2139/ssrn.2816925> accessed 20 September 2021

[48] Bhuvaneshwari Raman, 'The Rhetoric of Transparency and its Reality: Transparent Territories, Opaque Power and Empowerment' (2012) 8(2) Community Informatics and Open Government Data <https://doi.org/10.15353/joci.v8i2> accessed 20 September 2021; Solomon Benjamin, R. Bhuvaneswari, P. Rajan, and Manjunatha, 'Bhoomi: "E–governance', or, an anti–politics machine necessary to globalize Bangalore?' (2007) *CASUM–m Working Paper* <http://casumm.files.wordpress.com/2008/09/bhoomi-e-governance.pdf> accessed 20 September 2021; Michael Gurstein, 'Open data: Empowering the empowered or effective data use for everyone?' (2011) 16(2) First Monday <https://doi.org/10.5210/fm.v16i2.3316> accessed 20 September 2021; Jeffrey Alan Johnson, 'From open data to information justice' (2014) 16 Ethics and Information Technology 263

for the closure of data (for instance via contractual or intellectual property claims) is not equally distributed amongst all legal persons. Certain powerful private actors are better positioned to profit off open data compared to others; even as the banner of transparency, democracy, and right to information is used to validate the opening of public sector data. Against this background of contemporary commodifying practices that convert public sector data into *res nullius* in order to benefit privileged private actors, information policy scholar Jo Bates in their study of the politics of open data in pre-Brexit UK has made the following observation:

"*As the government privatised public assets and encouraged the outsourcing of public services, datasets needed by public bodies became increasingly owned or managed by private interests that extracted profit by selling data back to the public authorities or demanding payment to undertake data retrieval. Further, data and information that was previously shared openly between public bodies became restricted as newly privatised organisations went into competition with one another, and data markets emerged within the remaining, but increasingly commercialised public sector with 'data owners' charging other public sector bodies for re-use. Such markets could make up a substantial proportion of the data owner's revenue; however, data pricing policies often led to data/information deficits in cash-starved public bodies, potentially contributing to reduced innovative capacity and responsiveness*."[49]

The EU law and policy framework functions along similar lines in its promotion of the re-use of public sector data, without regard for asymmetries of power between private actors, and the role which public sector services can potentially play in bridging these asymmetries. So, for instance, the EU Commission promotes the re-use of public sector data for private commercial purposes not just to "*stimulate economic growth and spur innovation"* but also for the "*development of*

[49] Bates (2012), *Supra* n. 45, 6

new technologies, such as artificial intelligence" and to "*help address societal challenges with the development of innovative solutions such as in healthcare or in transport.*"[50] In this manner, key public and administrative functions become dependent on private technologies that are developed and deployed in legally-sanctioned enclosures built by private legal persons with adequate privileges to harness open data.[51] Consequently, one can argue that the PSI and Open Data Directives of the EU also enable what legal scholar Julie Cohen calls 'small-bore and ordinary enclosure.'[52] Importantly in the case of open data, such enclosure effectively involves the channelling of data generated by public resources into the *res nullius* whereby powerful private actors like Google and Amazon commodify and profit from it. This linkage between open data and commoditisation of public sector data becomes even clearer when one considers the number of new private sector projects as well as private-public partnerships to develop data technologies in the healthcare, transport, and energy sectors to name a few, which crucially rely upon the availability of open data.[53]

As a result, some commentators have understood the legal trend towards opening up public sector information as part of a larger neoliberal trend towards deregulation and privatisation.[54] These larger trends of deregulation and

[50] *Supra* n. 40

[51] For a discussion of instances in Europe of increasing dependence of public and administrative functions upon private technologies, *see*, AlgorithmWatch, 'Automating Society: Taking Stock of Automated Decision-Making in the EU' (2019) <https://algorithmwatch.org/de/wp-content/uploads/2019/02/Automating_Society_Report_2019.pdf> accessed 20 September 2021

[52] *Supra* n. 39, 63

[53] *Supra* n. 51, 27-31, 47-49, 56-58, 99; See also, AI Now, '2019 Report' (2019) <https://ainowinstitute.org/AI_Now_2019_Report.pdf> accessed 20 September 2021, 52-60

[54] *See* for instance, Jo Bates, 'Opening up Public Data,' Sheffield Political Economy Research Institute, The University of Sheffield, 21 May 2013 <http://speri.dept.shef.ac.uk/2013/05/21/opening-public-data/> accessed 20 September 2021; Bates (2012), *Supra* n. 45; Rob Kitchin, 'Four Critiques of Open Data Initiatives' LSE Blogs, 27 November 2013 <https://blogs.lse.ac.uk/impactofsocialsciences/2013/11/27/four-critiques-of-open-data-initiatives/> accessed 26 September 2021. *See* also, Kwoka (2016), *Supra* n. 42

privatisation also shape the legal regime which makes the inequality of European political economy of data possible.[55] Others have demonstrated how the global push towards opening of data facilitates the unaccountable flow of data from the Global South to the North.[56]

5.2.1.4. Legal Thingness in the Political Economy of Open Data

This unjust political economy of data –-whereby a few powerful private actors have been so successful at exploiting public sector data at the expense of vulnerable and marginalised persons within the matrix of exploitative North-South relations— is operationalised by the legal conceptualisation of data as a particular category of legal thing. Specifically, such extractive opening of data is made legally possible through its construction as *res nullius,* which is also implicated in the concept of data as public domain as discussed in the previous Chapter.[57] In other words, this unjust political economy of data is operationalised by the conceptualisation of open data. Because construction of data as *res nullius*

[55] On how private power in the EU digital market is enabled by legal and regulatory gaps sustained by neoliberal politics, *see*, Angela Daly, *Private Power, Online Information Flows and EU Law: Mind the Gap* (Hart Publishing 2016). On how neoliberal politics shapes the European Integration project as a whole, see Diamond Ashiagbor, 'Theorizing the Relationship Between Social Law and Markets in Regional Integration Projects' (2018) 27(4) Social & Legal Studies 435; Gareth Dale and Nadine El-Enany, 'The Limits of Social Europe: EU Law and the Ordoliberal Agenda' (2013) 14(5) German Law Journal 613; Christian Joerges, Vladimir Bogoeski and Lukas Nüse, 'Economic constitutionalism and the European social model: Can European law cope with the deepening tensions between economic and social integration after the financial crisis?' in Herwig C.H. Hofmann, Katerina Pantazatou and Giovanni Zaccaroni (eds.), *The Metamorphosis of the European Economic Constitution* (Edward Elgar 2019)

[56] *See* for instance, David Serwadda, Paul Ndebele, M. Kate Grabowski, Francis Bajunirwe, and Rhoda K. Wanyenze, 'Open data sharing and the Global South — Who benefits?' (2018) 359(6376) Science 642; Rolien Hoyng, 'From Open Data to "Grounded Openness": Recursive Politics and Postcolonial Struggle in Hong Kong' (2021) 22(6) Television & New Media 703. *See* also, Abeba Birhane, 'Algorithmic Colonisation of Africa' (2020) 17(2) SCRIPTed 389; Danielle Coleman, 'Digital Colonialism: The 21st Century Scramble for Africa through the Extraction and Control of User Data and the Limitations of Data Protection Laws' (2019) 24 Michigan Journal of Race and Law 417; Immaculata Mwanja, David Garcia, Tasauf A Baki Billah and Celina Agaton, 'Colonialism in Open Data and Mapping,' Community Working Group Webinar, Humanitarian Open Street Map, 26 February 2021 <https://www.youtube.com/watch?v=YJR92XIORJE> accessed 20 September 2021

[57] *Supra*, §4.4

or as open data gives it the potential to be claimed any legal person without an accounting for the power asymmetries between said legal persons, the most powerful actors automatically come into play. The romanticisation of open data through the binary formulation of open v. closed thereby does not acknowledge disparities in the ability of legal persons to exploit data resources or to make a legal claim for its enclosure. By ignoring these disparities, it often ends up upholding the status quo of the contemporary datafied political economy and the political economy of data. Lack of accountability for these differences in power to exercise claims over data as *res nullius* is evidence of law's complicity in an unjust world.

By contrast, a critical analysis of EU's Open Data framework that accounts for the dialectics of open and closed reveals the law's role in facilitating uneven distribution of the power to harness data as a legal thing amongst differently situated legal persons. In Section 5.2.1.1., I illustrated how the push for legal frameworks for open data in the EU has been justified by simultaneously citing the twin reasons of economic growth and democratic transparency. Contextualised against the critical dialectical analysis of open and closed data outlined above, these ostensibly compatible twin reasons, however, manifest decidedly in tension with other: The opening of public data has, in effect, resulted in its commodification through the logic of the free market. And because the distribution of data through the mechanics of the free market often amplifies the inequality of the power to enclose data between differently situated legal persons, to claim that open data by itself aids democratic processes becomes perhaps not just paradoxical; but also, a wilful instrumentalisation of the rhetoric of democracy and transparency to the ends of powerful private interests in the free market. A dialectically co-productive as opposed to a binary framework for an analysis of the relationship between open and closed Data, thus, enables us to illuminate the concrete power relations that are activated through the

conceptualisation of data as legal thing, in general; and as *res nullius* or open data, in particular.

Again, it must be emphasised to make this point is not to advance a blanket argument against the opening of public data; or, to imply that the inverse of a free market approach viz., state-centric distribution of data can lead to the realisation of a more just political economy. Rather, my intention has been to map the dynamics between open and closed, the Market and State, through the legal foundations of the contemporary data economy; in order to illustrate that these are not dichotomous or binary camps; but rather, dialectical and co-productive. Such shift from a binary to co-productive framing of the law and political economy of data can enable us to pierce the myriad divisions in modern approaches to data governance to understand that together, these dialectics are responsible for co-producing data as thing within modern data governance law. Whether data is governed as open or closed, or through the State or free market mechanisms, what all these approaches do have in common is that they focus pre-dominantly on the question of access and distribution of data as resourceful public domain; and in doing so, allow for its commodification. In centring the question of access and distribution, these approaches presume the availability of data as a resourceful public domain or as a legal thing which can be attributed to different combinations of legal persons in the first place.

5.2.1.5. From Data Access and Distribution towards Data Production

The question of access and distribution of data and associated power to harness it is indeed not unimportant. As illustrated, the work of Chander and Sunder, Cohen, and critical open and community data scholars from the Global South provides some critical insights regarding this question. This book, however, seeks to centre the question of the production of data; and not just its access and

distribution. The processes of production and distribution, of consumption and production, are particularly messily entangled in the data economy;[58] yet not enough attention has been paid to how the law (co-)produces data.

The discursive lacuna on this point has become particularly apparent to legal scholars who study the problematic deployment of data technologies in marginalised communities.[59] This gap between the discussion of production, on the one hand, and deployment of data technologies, on the other, is evident in the discourses on data governance as well as on law and technology; which have tended to focus on regulatory solutions for problematic deployment of data technologies; but not enough on the role of law in constructing these technologies within social, political, and economic realities.[60] Questions of technological access and just distribution of value created through technological interventions, thus, become subsumed as questions of technological deployment; without attending to the fact that just distribution is also deeply entangled with

[58] The problematic collapsing of the producer and consumer into one entity, oft-termed "prosumer" has been characteristic of the digital political economy in the last few decades. *See* in this regard, Seda Gürses and Joris van Hoboken, 'Privacy after the Agile Turn' in Evan Selinger, Jules Polonetsky, and Omar Tene (eds.), *The Cambridge Handbook of Consumer Privacy* (CUP 2018); Steffen Krüger and Jacob Johanssen, 'Alienation and Digital Labour—A Depth Hermeneutic Inquiry into Online Commodification and the Unconscious' (2014) 12(2) triple C: communication, capitalism & critique 632, 636

[59] Vidushi Marda, 'Introduction to Global Information Society Watch 2019 on Artificial Intelligence: human rights, social justice and development" (APC, ARTICLE 19, and Swedish International Development Cooperation Agency (SIDA), 2019) <https://giswatch.org/sites/default/files/gisw2019_web_intro_0.pdf> accessed 20 September 2021

[60] *Ibid.* For a few disparate examples of scholarship which centre the problematic deployment of data technologies without addressing the extractive conditions of their production, *see,* Solon Barocas and Andrew D. Selbst, 'Big Data's Disparate Impact' (2016) 104(3) California Law Review 671; Frank Pasquale, The Black Box Society: The Secret Algorithms that Control Money and Information (Harvard University Press 2016); Monika Zalnieriute, Lyria Bennett-Moses, George Williams, 'The Rule of Law 'By Design'?' (2021) 95(5) Tulane Law Review 1063. For instances of scholarship which discuss the deployment and distribution of data without engaging with the conditions of its production, *see*, *Infra* n. 61. Instead of singling out these examples however, I would like the reader to consider them as merely symptomatic of the larger trend in the data governance field of the separation of the discourses of production and deployment/distribution of data technologies and data, whereby the former discourse stays largely erased.

the processes through which said technology (and by extension, data) itself is constructed. The boundaries between production and deployment begin to wear thin when one is confronted with questions of power relations in the digital Earth.

The politics of access, deployment and distribution of data technologies is, thus, inherently linked to how these technologies are produced. And underlying the production of data technologies is, of course, the more fundamental question of data. In this regard, the questions of accessibility and inequality in the distribution of data have been highlighted both under open data literatures described above as well as the recently emerging literatures on data governance and the political economy of data.[61] What remains ignored in many such analyses, however, are the questions and issues around data production that construct it as a legal thing —first, as a public domain resource; and thereafter, as commodity. While the assumption of open data, for instance, as a public domain resource is widespread; there is very little reflection about the implications of such legal assumptions about data. Against this backdrop, my argument is that such construction of data as legal thing is not innocent, but rather needs to be problematised.

5.2.1.6. Representationalism and the Open Resourcing of Data

In the previous Chapter, I have outlined how representationalism is reproduced in the law through the construction of data as public domain. I have mapped how such construction allows for the non-legal representationalist understandings of data as a resourcing instrument, number, and resource to thrive within law. Given that the legal framework of open data in modern data governance law is a specific formulation of data as public domain in the context of non-personal data, it is argued that the same representationalist assumptions

[61] Cohen (2019), *Supra* n. 39; Viljoen, S., 'Democratic Data: A Relational Theory for Data Governance' (2021, forthcoming) Yale Law Journal <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3727562> accessed 15 September 2021

about data which are prevalent in its non-legal construction are reproduced into data governance law through open data frameworks. The presentation of data as a commodity, thus, carries within it all the representationalist assumptions about data described earlier; assumptions about data existing as an entity purely in the epistemological realm; distinct, separated, and elevated from the ontological and political conditions of its production that are rooted in the observer/observed hierarchy.

As illustrated, the open data framework as part of data governance law plays a key role in the accessibility and politics of distribution concerning data resources. However, in negotiating such distribution, the open data framework also constructs data as public domain or as a resource which is open to being appropriated by legal persons. This important aspect of its function must not be forgotten. *It is not just a question of how data as data as public domain is distributed, but how data is also constituted as public domain* in the first place. What kind of inclusions and exclusions are implicated in the construction of data as a resource in data governance law? These questions have consequences for how the very conceptual construction of data empowers some bodies while disempowering others. *What is at stake here then is not merely equal distribution and access to data as a natural resource but also the exclusions and inclusions implicit in the very construction of data as a natural resource that obscures its underlying representationalism and abstraction.* Importantly, the question then is not just about how the resource gets distributed but what gets made into a resource, and at whose expense. Why are certain lives and relationships —human and unhuman— amenable to being perceived, constructed, and traded as data by other humans? Understanding the legal framework for open data as a dialectical negotiation between open and closed that enables the construction of data as *res nullius* reveals these deeper stakes.

But for now, what is clear is that either open or closed, data is constructed as a commodity through the open data framework. Such commodification allows for the subordination of non-personal data to the legal person, and a legal fortification of representationalist assumptions whereby representation (data/epistemology) is thought to be separable from the lives and power relations which it represents (observer/observed/ontology).

5.2.2. Data as Free Flow

Apart from open data, another development which has enabled the commodification of data in the European Single Market by conceptualising it as legal thing is the evolution of the legal principle of free flow of data. Such conceptualisation of data as legal thing also simultaneously enables the co-production of representationalism in data governance law. In what follows, I map these processes.

5.2.2.1. Free Flow of Data as Political Economic Agenda

The development of the principle of free flow of data in the EU can be traced to early Community policies created to promote the transborder flows of data. In 1973, the European Community's Policy for Data Processing observed the need for developing a European scale data market so that just like the US firms' access to "*a rich Continental market for the commercial applications of data processing,*" European companies too could acquire comparable opportunities at "*continental, indeed world dimensions, and stand competitively on their own feet.*"[62] To enable this required the development of both European industrial capacity in this field and the creation of a European market for data processing.[63] The development of such industrial capacity and markets at the European level implicated issues of

[62] *Supra* n. 11, ¶5
[63] *Ibid.*

technical standardisation at several levels: The Community Policy found that, "[F]*or both the user and the computer industry the development and effective application of common standards in hardware and software is an urgent priority*."[64] This included the standardisation of Database Management Systems and its many features necessary to facilitate communication between them.[65] Though the Community Policy observed that the issue of standardisation is being discussed at many international fora, it particularly emphasised the need to develop common standards at a Community level in order to serve the needs of a consolidated European market.[66] In this regard it was observed, "*At present users are often tied to a particular company by the language and form of the programmes they use. If a real exchange of methods and a genuine market in software which could liberate the user is to develop, users, industry and standardisation organisations need to agree on and put into use common high level language, for example for real time applications.*"[67]

Such technical standardisation of hardware and software would enable easier exchange of data within the European community. Because such standardisation allowed for the flow of data across diverse computing systems, this step was essential in order to both foster a nascent European computing industry as well as create a consolidated European market for data processing. In the specific case of databases, such technical standardisation was achieved over the decades under various EU-led open data frameworks. Together the free flow of data and the open data principles thus helped drive the consolidation of the Digital Single Market which reinforced the availability of data as a commodity subject to market relations.

[64] *Supra* n. 11, ¶34
[65] *Supra* n. 11, ¶29
[66] *Supra* n. 11, ¶35
[67] *Supra* n. 64

However, it was not just the call for technical standardisation that sought to enable easier exchange of data within the European Community. The objective of creating a consolidated European market in data processing also played into it. In a 1979 Communication on European Society and Data Technologies issued by the Commission, the strategic importance of the data processing sector and the US and Japanese dominance of the sector was once again recognised.[68]

At the same time, it was observed that European countries were unable to secure dominance in this industry because its intervention in the data-processing market happened primarily at national levels.[69] Being confined to the small national scales of European countries, economies of scale with respect to data and the computing infrastructure needed for its processing could not be realised. And consequently, European firms were unable to compete with US or Japanese industry.[70] This position echoed the 1973 Communication, which also compared the European data processing endeavour with the US data processing industry and noted that while the US provided a rich continental market for the commercial applications of data processing, the market in Europe was still largely fragmented along national lines. In other words, unlike in the US, data in Europe was hindered from flowing freely because of different national laws and cultures governing data and its processing.[71] Given this background, the Communication

[68] Commission of the European Communities, 'Communication for the European Council Session, Dublin, 29/30 November 1979 on European Society and the Data Technologies: Towards a Community Response' COM(79) 683 Final, 22 November 1979 (Communication on European Society and Data Technologies), ¶I.2. In addition, according to the 1973 Community Policy on Data Processing, the European Community was found to be lagging behind in developing its market share in this industry which was heavily dominated by US-American products: 90% of the computers installed in Europe were based on US technologies, and 60% of the European market was dominated by the US-based firm, IBM. Due to the rapid growth of computerised data-processing, it was noted to have become the third largest industry globally, s*ee*, s*upra* n. 11, ¶1

[69] Communication on European Society and Data Technologies (1979), *supra* n. 68

[70] *Ibid.*

[71] *Supra* n. 11, ¶5. *See* also, Annex to *Supra* n. 11, ¶3

recommended developing a consolidated European strategy for data markets: In combination with the European Community's fundamental freedoms with regard to the free flow of goods and services and the freedom of establishment,[72] the push for a common European strategy for the data processing industry also contributed to increasing the flow of data within the European Community.

Technical standardisation, on the one hand; and the aspiration towards a European economy of scale in the data processing industry, on the other, thus, both served as the early fuel for the development of the principle of free flow of data. The commoditisation of data inherent to such formulation of data as free flow within the European community shaped data's understanding as legal thing within modern data governance law. Such 'thingification' of data through its construction as commodity within the common market also enabled representationalist assumptions to be co-produced as law.

In comparing the US and European markets for data processing, the 1973 Community Policy moreover noted that unlike in Europe at that time, the data processing industry in the US had been boosted through investment by the Federal Government of the United States, which had provided a huge sophisticated market for the US industry and stimulated its growth through awarding development contracts.[73] Given this, the Communication made policy recommendations in order to boost the European data processing industry. These consisted of mainly two types of actions: (a) To develop the capacity of the European-based industry and, (b) to promote the effective use of data-processing.[74] These actions were targeted at both the hardware and software

[72] For the legal basis of free movement of goods in EU, *see* TFEU, *supra* n. 28, Art. 26, 28-37; for the freedom of establishment, *see* TFEU, *supra* n. 28, Art. 26, 49-55; and for the freedom to provide services, *see* TFEU, *supra* n. 28, Art. 26, 56-62
[73] *Supra* n. 11, ¶5
[74] *Ibid.*

development in the computing industry, and included measures to boost the European data processing industry through State investment. Such interventions were justified under Article 86 of the Treaty Establishing the European Economic Community, which granted the Commission the power to ensure that the dominant position of a firm in the European market is not abused.[75] In particular, the invocation of Article 86 in the Communication was made in the context of the dominant position of IBM and the need to develop European-based alternatives in the data processing industry.[76]

Mirroring the US federal investment into its national data processing industry, the 1973 policy recommended that the public sectors of European countries jointly commit to using computerised data processing systems. Additionally, it encouraged the award of development contracts by European Member States to support the development of software programmes that make it possible to transfer existing applications from one machine to another.[77] Lastly, the policy recommended the creation of joint applications development programmes to be carried out by consortia of European software and hardware firms and intended to serve the needs of the public sector in Europe. In recommending this, the policy particularly recognised the immense stimulus that US defence and military projects had provided to the US data processing industry, and called upon a similar public investment in Europe to create "*a realistic European equivalent designed to serve civilian needs*."[78]

At the same time, however, the policy noted that such support from the public sector must not be seen as a form of permanent protection for Europe's infant

[75] *Supra* n. 11, ¶2
[76] *Ibid.*
[77] *Supra* n. 11, ¶18-19
[78] *Supra* n. 11, ¶19

data processing industry, but rather as an instrument of redressing competitive imbalance in a global market dominated by US firms.[79] The framework for free flow of data in the European Community was, thus, developed largely with the agenda of fending off foreign competition in the data processing industry and developing an internationally-competitive European market for the same. Here, it should be noted that the principle of free flow of data has oft been evoked within legal, regulatory and policy discourses in order to prevent the 'balkanisation' of the global internet, preserve democracy and to ensure a 'free and open internet.'[80] The foundations of the principle of free flow however, are in fact inherently tied to a European economic agenda. Historicising the development of the principle allows us to grasp this.

The need to compete in the global data processing market, thus, provided not just a push for public sector investment in the data processing industry at national levels across Europe; but also, an impetus for creating a common market for the data processing sector. These developments provided the background for the development of the principle of free flow of data in Europe. The European Community was at the forefront of this agenda. In this regard, four grounds upon which Community action in the field of data technology could be beneficial were identified[81]: First, that such action would allow Europe to compete with US

[79] *Supra* n. 62

[80] *See*, for instance, Lung chu-Chen, 'Human Rights and the Free Flow of Information'(1982) 4 New York Law School Journal of International and Comparative Law 37; Albright Stonebridge Group, 'Data Localisation: A Challenge to Global Commerce and the Free Flow of Information,' September 2015 <https://www.albrightstonebridge.com/files/ASG%20Data%20Localization%20Report%20-%20September%202015.pdf> accessed 20 September 2021, 8; Nigel Cory, Robert D. Atkinson, and Daniel Castro, 'Principles and Policies for "Data Free Flow With Trust," Information Technology and Innovation Foundation, 27 May 2019 <https://itif.org/publications/2019/05/27/principles-and-policies-data-free-flow-trust> accessed 20 September 2021. *See* also, Susan Aaronson, 'Why Trade Agreements are not Setting Information Free: The Lost History and Reinvigorated Debate over Cross-Border Data Flows, Human Rights, and National Security' (2015) 14(4) World Trade Review 671

[81] Communication on European Society and Data Technologies (1979), *Supra* n. 68, 2-3

and Japanese data technology firms in the world market, by breaking national barriers in Europe and enabling large-scale and intercontinental arrangements in this area. Second, that courtesy of the establishment of such a continental market through European policy, it would allow Europe to realise economies of scale and make its data processing industry more efficient. Third, that because data technologies relied on the functioning of an integrated system of components like infrastructure, satellite, network interconnection, standards, research and public orders for pilot installations, a Europe wide policy would allow integration of these different sectors and development of a strategy for the data processing industry as a whole, without which said economies of scale could not be achieved. And lastly, that a European Community strategy and support system would provide European companies a much-needed springboard for effectively competing in the world market.

Echoing this aspiration for a consolidated data market for development of European competence in the global data processing industry, the European Parliament in 1979 passed a Resolution concerning the rights of the individual in the context of data processing. This Resolution stated that "*a harmonious development of economic activities within the common market calls for the creation of a genuine common market in data-processing in which the free movement of goods and freedom to provide services are assured and competition is not distorted.*"[82] Furthermore, the Resolution recognised the need to guarantee the free flow of information within the Community while accounting for restrictions based in reasons of national security.[83]

[82] European Parliament Resolution on the protection of the rights of the individual in the face of technical developments in data processing [1979] OJ C 140/34, 35¶1
[83] *Supra* n. 82, 35-36

By the 1980s, the increasing importance of the data processing industry resulted in development of international policy frameworks and guidelines around data flows across national borders.[84] In 1985, the OECD issued a Declaration on Transborder Data Flows that outlined the intention of OECD and its Member States to "*promote access to data and information and related services, and avoid the creation of unjustified barriers to the international exchange of data and information*."[85] Through this Declaration a general principle of free flow of information, the openness of policies on transborder flows of data and the desirability of harmonising national approaches to data flows were also accepted.[86] The Declaration also called for further work to be undertaken to address issues emerging from data flows accompanying international trade, marketed computer services and computerised information services, and intra-corporate data flows.[87]

5.2.2.2. Representationalism and the Political Economy of Free Flow

The 1980s also saw a shift in the software development industry with regard to supply chain management. Gürses and van Hoboken have outlined these developments in the computing industry that continued into the 1990s, and amplified greatly in the 2000s. Taken together, these developments in software supply chain management have been termed as the 'agile turn.'[88] This agile turn consisted of a shift from waterfall model to agile development; from shrink-wrap

[84] *See* for instance, Organisation for Economic Co-operation and Development, Guidelines on the Protection of Privacy and Transborder Flows of Personal Data (adopted 1980, updated 1990 and 2013) <https://www.oecd.org/sti/ieconomy/oecdguidelinesontheprotectionofprivacyandtransborderflowsofpersonaldata.htm> accessed 20 August 2021

[85] Organisation for Economic Co-operation and Development, Declaration on Transborder Data Flows (adopted 11 April 1985) <https://www.oecd.org/sti/ieconomy/declarationontransborderdataflows.htm> accessed 20 September 2021

[86] Michael Kirby, 'Legal Aspects of Transborder Data Flows' (1991) 11 Computer Law Journal 233, 238

[87] *Supra* n. 85

[88] Gürses and van Hoboken (2018), *Supra* n. 58, 583-584

software to service-oriented architectures; and from the personal computer to the cloud.[89] All these shifts required the use of data across multiple stages of software development, deployment, and maintenance. For these reasons, the free flow of data was becoming increasingly important and legal barriers to the movement of data in Europe became essential to the development of the data processing industry. The 1990s also saw the rise of e-commerce, which further necessitated the free movement of data.

Against this background, in April 1997 the European Commission adopted a Communication entitled, 'A European Initiative for Electronic Commerce,' which identified four key areas of action to be implemented where action must be taken and implemented by the year 2000 if Europe is to benefit from this new and rapidly developing way of doing business[90]: First, widespread, affordable access to the infrastructure, products and services needed for electronic commerce must be provided through secure and easy-to-use technologies and services and reliable, high-capacity telecommunications networks. Second, a coherent regulatory structure within the EU, based on Single Market principles, must be ensured. Third, a favourable business environment must be fostered by promoting relevant skills and raising awareness. Fourth, there must be a compatible and coherent regulatory framework at the global level. The necessity for free movement of data was reaffirmed in the E-Commerce Directive adopted

[89] *Ibid.*

[90] Commission of the European Communities, 'Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions on A European Initiative in Electronic Commerce' COM(97) 157 final, 16 April 1997. *See* also, European Commission, 'Electronic Commerce: Commission presents framework for future action,' 16 April 1997 <https://ec.europa.eu/commission/presscorner/detail/en/IP_97_313> accessed 20 September 2021

in 2000, which deemed it necessary for the smooth functioning of the internal market between Member States.[91]

The aforementioned policy framework for the free flow of data stayed in place for two decades. In 2018 however, the Regulation on Free Flow of Non-Personal Data was enacted in the EU, which further pushed for the consolidation of the European market on data, thus reinforcing the conceptualisation of data as commodity. Article 4 of the Regulation states, "*Data localisation requirements shall be prohibited, unless they are justified on grounds of public security in compliance with the principle of proportionality.*"[92] Such language about data localisation reveals its implicit assumption of data being an artefact or thing which can be localised and stored rather than a relationship which is living and involves observers and the observed in an exploitative power hierarchy. The naturalisation of such relationship creates data as a resource in non-law and as a commodity through the free flow of data principle in data governance law, thus continuing the co-production of representationalist assumptions in the legal conceptualisation of data.

In all these legal frameworks of free flow of data, the objective has been to create a common market for data in Europe, which was predicated on the construction of data as a commodity. Through this process, data has also been constituted as legal thing. As the policy and legal language of all these frameworks for free flow of data has illustrated, the construction of data in these frameworks makes it appear as an entity in its own right as an epistemological legal thing, divorced from the ontological and political relationships between the observer and the

[91] Directive (EU) 2003/31/EC of the European Parliament and of the Council, of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce) [2000] OJ L 178, Recitals 9, 14, 24
[92] FFD Regulation, *Supra* n. 3, Art. 4

observed. In effect, by erasing these power relationships between the observer and observed from the conceptualisation of data, a dichotomy between ontological and epistemological claims is created and representationalism is reproduced into modern data governance law. Conversely, through this representationalist processes, the legal framework for free flow of data in the EU helps create a Europe-wide data commons or 'public domain' for diverse potential usage of non-personal data by private actors whereby it can be commodified for the purposes of the market.

5.3. From Data as Person

So far, I have outlined how data in general under EU data governance law is constructed as a commodity which is a manifestation of its understanding as legal thing within the person/thing dichotomy of law. I have also illustrated how such construction of data as commodity enables the co-production of representationalist assumptions into the law. Much of this analysis holds true in the case of non-personal data; but when considering the construction of personal data as legal thing, some additional points need to be made.

In the case of personal data, this general framework for commodification and construction of data as legal thing is modified and supplemented by special legal rules that together form data protection law. The special status of personal data can be traced to a longer genealogy of the treatment of information associated with human individuals as different from other kinds of information, and is indicative of the latent liberal anthropocentrism that shapes Western law. In the wake of the development of computerised data processing technologies, the 1950s and 1960s saw an increased awareness of the protection of privacy of

natural persons.[93] It is worthy to note that privacy as a concept that needed legal protection was specific to the context of natural persons. The governance of data identifying natural persons in this manner involved the development of a legal regime that distinguished such data (personal) from data that does not identify natural persons (non- personal data).

5.3.1. Continuities between Personality Rights and Data Protection

The origins of a regime in Europe that treats data identifying natural persons differently can be traced to the development of personality rights within nationally-established jurisdictions. The development of law of personality rights followed different trajectories in different countries of Western Europe. In England of the early 20th century, personality rights had been invoked to protect the likeness of a natural person being used for commercial purposes. So, for instance, in the 1930 case of *Tolley* v. *J.S. Fry & Sons Ltd.,* an amateur golf player sued a chocolate manufacturer for using his likeness in advertisements for the latter's product. In this matter however it was held that, "*the defendants in publishing the advertisement in question, without first obtaining Mr. Tolley's consent, acted in a manner inconsistent with the decencies of life, and in doing so they were guilty of an act for which there ought to be a legal remedy. But unless a man's photograph, caricature, or name be published in such a context that the publication can be said to be defamatory within the class of libel, it cannot be the subject-matter of complaint by action of law."*[94] Although this judgment was reversed and it was found that the publication of the golfer's likeness in the

[93] *See* generally, for critical histories of data processing technologies, surveillance, and privacy, Rebecca Lemov, *Database of Dreams: The Lost Quest to Catalog Humanity* (Yale University Press 2015); Jacqueline Wernimont, *Numbered Lives: Life and Death in Quantum Media* (MIT Press 2019); Sarah Igo, *The Known Citizen: A History of Privacy in Modern America* (Harvard University Press 2018); Dan Bouk, *How Our Days Became Numbered: Risk and the Rise of the Statistical Individual* (University of Chicago Press 2015). *See* also, Theodora Dryer, 'The New Critical History of Surveillance and Human Data' (2019) 49(5) Historical Studies in the Natural Sciences 556

[94] Opinion of Green LJ in King's Bench, *Tolley* v. *J.S. Fry & Sons Ltd.* (1930) 1 K.B.467, 478. *See* also, discussion of the case in Stig Strömholm, *Right of Privacy and Rights of the Personality: A Comparative Survey* (Boktrykceri AB Thule 1967) 34-35

advertisement did amount to libel, the position of the law on this matter remained unclear. It was likely that the legal position differed in matters of torts like passing off, nuisance, defamation, trespass, contract and/or copyright contexts.[95] Nevertheless, as late as 1948, the UK Parliamentary Committee on the Law of Defamation disapproved the application of defamation law to protect privacy and personality rights which concerned instances of invasion of information concerning a natural person.[96]

By contrast, the development of the 'rights of personality' in French law emerged from discussion in the 19th century that saw increasing theoretical interest in this topic. Three features regarding the development of French law in this regard stand out: First, although the rights of personality increasingly became a subject of monographs by the early 20th century, there was little agreement on the delimitation of the concept. Nevertheless, a common point of agreement amongst French scholars was the rejection of the notion of a 'general right to personality.' This referred to a right that could be invoked in order to defend what may be considered as specifically 'personal' interests. However, because such a concept was to be found too vague, it was rejected. Instead, the French scholars recognised several distinct 'rights of the personality' that included the right to a person's name or likeness (that were earlier considered to be proprietary rights) and a right to the secrecy of confidential letters (that was earlier interpreted as based in an implied contract of confidentiality between the writer and addressee.). The rights of personality thus emerged to protect information or data about a person that could be considered both as likeness or identification, but also a larger sphere of the person's privacy.[97]

[95] Strömholm (1967), *supra* n. 94
[96] *Ibid.*
[97] Strömholm (1967), *supra* n. 94, 35-36

The second notable feature of early 20th century French law on the rights of personality concerned the low threshold of proof for fault or prejudice that was laid down to establish legal liability in case of their violation. In this context, the rights of personality can be traced to Art. 1382 of the French Code Civil, which requires that some kind of fault or prejudice as a necessary condition for their violation. However, since both these conditions of fault and prejudice required little proof,[98] it enabled the development of personality rights in a broader milieu as a tool for protection of information relating to a human individual or a natural person. Lastly, the French legal notion of rights of personality in the early to mid-20th century included the protection of the human body and questions concerning contracts relating to it. In this manner, the subject covered a broad spectrum of issues under the rights to personality.[99] Despite this broad spectrum what is however important to note here is that in all these instances, the idea of personality rights covered the governance of information about natural persons or human body— thus, establishing itself as a predecessor to modern data protection law.

It is, additionally, important to note that much like the present-day distinction between governance regimes for so-called personal and non-personal data, in early 20th century Europe, information relating to human individuals or natural persons was governed by a specialised legal regime which was different from the legal regime that governed information in other contexts. In this manner, the law produced a unique position for representations of natural persons while distinguishing it from other kinds of 'unhuman' representations. The former was seen as deserving of legal protection at a greater scale than other kinds of

[98] Raymond Sarraute, 'Current Theory on the Moral Right of Authors and Artists under French Law' (1968) 16(4) The American Journal of Comparative Law 465, 482; Raymond Sarraute, 'Note to Appellate Court Decision Paris, November 15, 1966, Guille c. Colmant' (1966) Gazette du Palais 1, 11-13. *See* also, *Supra* n. 97

[99] *Supra* n. 97

representations— thus reproducing anthropocentrism of the Western cultural archive even prior to the development of modern data protection law. In other words, the special status accorded to personal data today is not an entirely new phenomenon, but may be historicised as a continuity of the anthropocentrism exhibited by personality rights.

5.3.2. Discontinuities between Personality Rights and Data Protection

Despite the continuity, there are also discontinuities between even the early formulations of personality rights and the modern data protection regime that would come to govern personal data later. The legal rights of personality in France enabled the protection of representation of a natural person, which can indeed be understood in terms of data or information relating to an identifiable natural person or simply, personal data. But unlike the data protection law, representation of a natural person under the personality rights framework was understood to constitute an inherent part of the natural person and not separate from them. Here, of course, the natural person is also understood as a legal person. Under the personality rights regime, the representation of a natural person was thereby understood to exist as part of the legal personality of the protected legal person. In this sense, knowledge, data or information identifying a natural person was constituted as part of the legal person itself and not as an alienable legal thing to which legal persons may claim rights. In this sense, rights of the personality differed from the data protection regime as well as contexts of so-called non-personal data: The former constituted information as an inherent part of the legal person, and not as an externalised legal thing to which a legal person may lay claim as would be the case of 'data' later.

A similar trend regarding the construction of representations relating to identifiable natural persons as part of legal person within the person/thing dichotomy may be found in the case of German legal developments relating to

personality rights. In Germany, the 19th century saw emergence of multiple bodies of legal scholarship on the subject of 'rights of the personality.'[100] The legislation that first attempted to address the concerns raised by the German scholarship was the German Civil Code, which, rather than recognising a general right of personality, recognised a natural person's proprietary right to their name.[101] Under this framework, the wilful or negligent infliction of injury to another person's "*life, body, health, liberty, property or other rights"* gave rise to civil liability. [102] Accordingly, it outlined the scope of responsibility for misrepresentations of facts that were likely to do harm to another's business or professional activity, or were to be used for seduction, and/or for malicious infliction of injury in an immoral manner.[103] In this manner, to claim adequate protection of personality rights against unauthorised disclosure of facts under the Civil Code needed the establishment of both a legitimate interest and a right that was entitled to protection and overcoming of obstacles to the granting of compensation for such violation.[104] However, the system of liability under which such a right of personality was made available prevented the growth of case law on this point because unless otherwise specifically provided for, the German Civil Code prevented compensation for an injury which was not of a pecuniary character.[105] Since the violation of the rights of personality did not always result in damages that could be monetarily quantified, it stunted the scope of litigating before the court under said legal framework.

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[100] *See* for instance, Karl Heinrich Franz von Gareis, 'Das juristiche Wesen der Autorrechte, sowie des Firmen- und Markenschutzes' (1877) XXXV Busch's Archiv 185; Otto von Gierke, 'Deutsches Privatrecht, Erster Band: Allgemeiner Teil und Personenrecht' in Karl Binding (ed.), *Systematisches Handbuch der deutschen Rechtswissenschaft* (Duncker & Humblot 1895) 702; Josef Kohler, *Urheberrecht an Schriftwerken und Verlagsrecht* (F. Enke 1907)

[101] Stig Strömholm, *Le droit moral de l'auteur, en droit allemand, français et scandinave avec un aperçu de l'evolution internationale, étude de droit comparé, vol. I* (P.A. Norstedt & Söners 1967) 313-327, 465-475. *See* also, Strömholm (1967), *supra* n. 94, 37

[102] Bürgerliches Gesetzbuch, 1896 (BGB, German Civil Code), §823 (c.1967)

[103] BGB, §824-826 (c.1967)

[104] Strömholm (1967), *supra* n. 94, 38

[105]BGB, §253 (c.1967). *See* also, Strömholm (1967), *supra* n. 94, 37

The passage of the artistic Copyright Act 1907 however helped in the clearer establishment of rights of personality in German law. Under this Act, a person's right to their likeness was explicitly defined and recognised. Consequently, the field of copyright law in this period saw rapid development of case law and legal opinions whereby a right of personality, or a *droit moral* intended to protect the personal interests of authors. Some studies on case law would seem to indicate that such a protection as afforded by the Copyright Act was enlarged by courts to formulate something akin to a general right of personality such that it could be invoked even when the injured personal interest of the author was not explicitly recognised as a right.[106]

The next significant stage of development in the field of German personality rights occurred in 1949 with the adoption of a new Constitution for Western Germany. Article 2, No.1 of the new Constitution included the fundamental right to the 'free development of the personality.' This led to rapid evolution of the legal discourse on the protection of personality rights. Legal scholars and commentators —in particular, Nipperdey and Hubmann[107]— claimed that "*irrespective of the intentions and language of the drafter of the BGB* [the German Civil Code]*, the recognition of a 'general right to personality' in public and private law was an inevitable consequence of the new Constitution*."[108] This shift in the scope of personality rights within the German legal landscape can be illustrated by two landmark cases that helped establish the aforementioned 'general right of personality.'

First, in 1954, the German Federal Court heard a case, whereby a banker sued a newspaper for publishing extracts from a confidential letter written by them; the

[106] Strömholm (1967), *supra* n. 94, 39
[107] In this regard, Hubmann was also the author of a leading work in the field at the time. *See,* Heinrich Hubmann, *Das Persönlichkeitrecht* (Böhlau 1953)
[108] *Supra* n. 106

content of which cast the banker in an unfavourable light.[109] Accordingly, they argued that such publication of selective information from a confidential letter amounted to the mutilation of their work. Here, the Court adjudicated in favour of the banker holding that the 'general right of personality' as recognised by the Constitution was an "*absolute right*" in the sense of §823 of the German Civil Code. Alongside a number of other similar cases involving the publication of a person's name and likeness sparked in its wake, this case allowed for the establishment of a right to personality in a wider sense *inter alia* against the disclosure of private facts and unauthorised recognition of private conversations.[110] Furthermore in 1958, the German Federal Court dealt with another significant case involving a prominent businessman who had been photographed on horseback. Subsequently, the businessman found this photograph (i.e., a representation of his likeness) being used by a pharmaceutical manufacturer in an advertisement and brought the matter to court.[111] Here the Court awarded the businessman significant damages of up to 10,000 Deutsch Mark for the violation of his general right to personality. In doing so, the Court departed from the earlier legal position on non-pecuniary damage and established the principle that monetary compensation could be awarded for serious encroachments upon the general right to personality.[112]

In recognising a general right to personality, the German personality rights framework has thus differed from both the French and English legal landscapes. Nevertheless, a common strand unites the history of personality rights regimes in all these jurisdictions of Western Europe: Ultimately all three jurisdictions

[109] Bundesgerichtshof (First Civil Division) 25 May 1954, *D Company* v. *Dr. S* (1954) 13 BGHZ 334, 370 <https://germanlawarchive.iuscomp.org/?p=108> accessed 20 September 2021
[110] Strömholm (1967), *supra* n. 94, 39-41
[111] Bundesgerichtshof (First Civil Division) 14 February 1958, *Plaintiff* v. *Defendant Limited Partnership* (1958) 26 BGHZ 349, 408, 452 <https://germanlawarchive.iuscomp.org/?p=113> accessed 20 September 2021
[112] Strömholm (1967), *supra* n. 94, 40

treated information protected by personality rights as part of the *legal person*. Especially under the right(s) of personality in France and Germany, representations of likeness and/or data associated with an identifiable natural person were treated as an inherent part of said natural person's legal *personality* and not as a distinct and separate legal thing that lay outside of the natural person.

5.3.3. Personal/Non-Personal Data as a Problematically Persistent Distinction within the Legal Form

Historically, data related to an identifiable natural person was thus seen as a legal person. This assumption about the legal status of data marks a significant deviation and may be contrasted with the discussion of 'data as commodity' undertaken earlier in this Chapter.[113] According to that discussion, the history of data, particularly that of so-called 'non-personal data' which relates to no identifiable natural person, was found to be the history of construction of data as legal thing.

Given this, it would seem that in modern Western law, data and information has a chequered history of being constructed both as legal person and as legal thing. While the construction of data as a legal person is associated with the anthropocentrism-driven special status accorded to information relating to identifiable natural or human subjects, the construction of data as legal thing is what enables the trade of data within the political economy. In fact, I would go even further to propose that *this historical negotiation of data between the categories of the legal person and legal thing manifests as the distinction between 'personal' and 'non-personal data' in contemporary data governance law*. The foundation for personal data relies upon its association with an identifiable human or natural person; and what cannot be related to an identifiable human is deemed to fall within the category

[113] *Supra*, §5.2

of non-personal data. This distinction between categories of data on the basis of how they related to an identifiable human is rooted in the historical distinction made between data as a legal person and as legal thing. As illustrated by the legal framework of personality rights, without the anthropocentric history of treatment of certain information as special because it constitutes an inherent part of the natural legal person as opposed to a legal thing, the distinction between personal and non-personal data could not materialise in the manner it does today.

With the explosion of big data in recent times, scholars have highlighted the datedness of the legal distinction that is made between personal and non-personal data. In particular, it has been pointed out that anonymised data which would normally fall under the category of non-personal data, can today be used to single out and identify a specific individual.[114] Moreover, through the combination of multiple datasets, data may be de-anonymised resulting in the identification of data subjects.[115] Accordingly, the development of law and regulatory frameworks on the basis of a distinction between personal and non-personal data has been criticised.[116] Despite all such developments and insight,

[114] Michèle Finck and Frank Pallas, 'They who must not be identified—distinguishing personal from non-personal data under the GDPR' (2020) 10(1) International Data Privacy Law 11; Akiva Miller, 'What Do We Worry about When We Worry about Price Discrimination? The Law and Ethics of Using Personal Information for Pricing' (2014) 19 Journal of Technology Law & Policy 41; Michael Veale, Reuben Binns and Jef Ausloos, 'When Data Protection by Design and Data Subject Rights Clash' (2018) 8 International Data Privacy Law 105, 113

[115] Latanya Sweeney, 'Simple Demographics Often Identify People Uniquely' (2000) Data Privacy Working Paper 3, Pittsburgh <https://dataprivacylab.org/projects/identifiability/paper1.pdf> accessed 20 September 2021; Arvind Narayanan and Vitaly Shmatikov, 'Myths and Fallacies of Personally Identifiable Information' (2010) 53 Communications of the ACM 24, 26; Luc Rocher, Julien M Hendrickx and Yves Alexandre de Montjoye, 'Estimating the Success of Re-identifications in Incomplete Datasets Using Generative Models' (2019) 10 Nature Communications 3069; Sophie Stalla-Bourdillon and Alison Knight, 'Anonymous Data v. Personal Data—A False Debate: An EU Perspective on Anonymisation, Pseudonymisation and Personal Data' (2017) 34 Wisconsin International Law Journal 284, 287

[116] *See* for instance, the work of notable US American legal scholar Paul Ohm, who writes, "[L]*awmakers and regulators should reevaluate any law or regulation that draws distinctions based solely on whether particular data types can be linked to identity, and should avoid drafting new laws or rules grounded in such a distinction. This is an admittedly disruptive prescription. PII* [Personal Identifiable Information] *has long served as the center of mass around which the data privacy debate has orbited. But although disruptive, this*

the distinction between personal and non-personal data in contemporary data governance law still persists. Why? I would argue that one of the fundamental reasons for this persistence is the modern Western legal form of data. As has been illustrated, the constitution of the legality of data within the modern legal form occurs through the dichotomy of the legal person and thing. So, under the personality rights framework, data may be constituted as a legal person; but under the frameworks of open data and free flow, data is a legal thing. And because the constitution of data as 'legal' is intimately connected to the dichotomy of legal person and thing, the distinction between personal and non-personal data is much more fundamental to the modern form of Western law than appears at first glance. As a result, a disruption to the distinction between personal and non-personal data which cardinally challenges this dichotomy instead of merely shifting the boundaries of its division, would render a strike against the foundational assumptions of modern Western law viz., its legal form.

5.3.4. Representationalism through Data as Legal Person

As seen, the production of legality in the context of data is intertwined with the modern legal form of Selbstreflektion whereby the dichotomy of legal person and thing constitutes a core aspect.[117] The unsettling of data, including that of the dichotomy of personal and non-personal data, would then demand of the Western and settler legal communities the ability to listen seriously to Indigenous movements and scholars who have critiqued the anthropocentrism-defined politics of the person/thing dichotomy for centuries now.[118] Such sincere

proposal is also necessary. Too often, the only thing that gives us comfort about current data practices is that an administrator has gone through the motions of identifying and deleting PII— and in such cases, we deserve no comfort at all. Rather, from now on we need a new organizing principle, one that refuses to play the PII whack-a-mole game. Anonymization has become "privacy theater" it should no longer be considered to provide meaningful guarantees of privacy." Paul Ohm, 'Broken Promises of Privacy: Responding to the Surprising Failure of Anonymization' (2010) 57 UCL Law Review 1701, 1743

[117] *Supra*, §4.2, 4.4

[118] On Indigenous scholarship highlighting the non-anthropo-/eco-/techno-centrism of Indigenous law and thus critiquing the person/thing dichotomy of the Western cultural archive

engagement is necessary in order to dismantle the underlying assumptions of modern Western legal form that are usually taken for granted.

How does representationalism relate to this narrative of the politics of data's modern legal form? Here, I argue that the politics of representationalism are animated by the history of the negotiation of data between the categories of legal person via the framework of personality rights, on the one hand; and that of legal thing via the principles of open data and free flow of data, on the other. I have mapped before how the construction of data as commodity under the latter legal principles reinstates representationalism within data governance law

see for instance, Artwell Nhemachena & Esther Dhakwa, 'Beyond Eurocentric Human Rights Jurisprudence and Towards Animality? Humanoid Robots and the Decomposition of African Humanism and Personhood' in Artwell Nhemachena, Tapiwa V. Warikandwa & Samuel K. Amoo (eds.) *Social and Legal Theory in the Age of Decoloniality: (re-)Envisioning Pan-African Jurisprudence in the 21st Century* (Langaa Research and Publishing CIG 2018)*;* Mariano Aupilaarjuk, Marie Tulimaaq, Akisu Joamie, Emile Imaruituuq, Lucasie Nutaraaluk (Jaarich Oosten, Frédéric Laugrand and Wim Rasing, eds.) Interviewing Inuit Elders, *Perspectives on Traditional Law , Vol. 2* (Nunavut Arctic College 1999); Geneva E.B. Thompson, 'Codifying the Rights of Nature: The Growing Indigenous Movement' (2020) 59(2) Judges' Journal 12; C.F. Black, *The Land is the Source of the Law: A Dialogic Encounter with Indigenous Jurisprudence* (Routledge 2011) John Borrows, 'Outsider Education: Indigenous Law and Land-Based Learning' (2016) 33 Windsor Yearbook of Access to Justice 1; Sarah Hunt, 'Ontologies of Indigeneity: the politics of embodying a concept' (2014) 21(1) Cultural Geographies 27; Kahente Horn-Miller, 'What Does Indigenous Participatory Democracy Look Like? Kahnawà:Ke's Community Decision-Making Process' (2013) 18(1) Review of Constitutional Studies 111; Val Napoleon and Emily Snyder, 'Housing on Reserve: Developing a Critical Indigenous Feminist Property Theory' in Angela Cameron, Sari Graben and Val Napoleon (eds.), *Creating Indigenous Property: Power, Rights, and Relationships* (University of Toronto Press 2020); Val Napoleon and Hadely Friedland, 'Gathering the Threads: Indigenous Legal Methodology' (2015) 1(1) Lakehead Law Journal 33; Zoe Todd, 'From fish lives to fish law: learning to see Indigenous legal orders in Canada' in Emily Yates-Doerr and Christine Labuski (eds.), *The Ethnographic Case* (Mattering Press 2018); Zoe Todd, 'Refracting the State through Human-Fish Relations: Fishing, Indigenous Legal Orders and Colonialism in North/Western Canada' (2018) 7(1) Decolonization: Indigeneity, Education & Society 60. For other scholarship on this point, *see,* Maneesha Deckha, 'Unsettling Anthropocentric Legal Systems: Reconciliation, Indigenous Laws, and Animal Personhood' (2020) 41(1) Journal of Intercultural Studies 77; Juan José Guzman, 'Decolonising Law and Expanding Human Rights: Indigenous Conceptions and the Rights of Nature in Ecuador' (2019) 0(4) Deusto Journal of Human Rights 59; Louis Kotzé and Paola Calzadilla, 'Living in Harmony with Nature? A Critical Appraisal of the Rights of Mother Earth in Bolivia' (2018) 7(3) Transnational Environmental Law 397; Aikaterini Argyrou & Harry Hummels, 'Legal Personality and Economic Livelihood of the Whanganui River: A Call for Community Entrepreneurs' (2019) 44(7) Water International 752

through the constitution of data as legal thing. By contrast, the personality rights framework constituted data as legal person. Here, it should, however, be noted that the construction of data, information, and representations relating to identifiable natural persons as part of legal person however did not prevent the co-production of representationalism into the personality rights regime of law. Rather, such co-production of representationalism into the law merely took a different form. While under the legal principles of open data and free flow of data, data (or broadly, representations or information about the world) are constituted as legal thing, in the context of personality rights, information or representations relating to identifiable natural persons is constituted as legal person.

The representationalist assumption of the separation of ontological and epistemological claims, however, still persists even within the framework of personality rights. In the context of personality rights, representationalism is co-produced through the distinction made between the natural person (ontology) and the representations about them (epistemology). Even though the personality rights framework protects such representations under the category of legal person, the underlying representationalist distinction between the natural person and the representation does not disappear.

More importantly, the legal framework of personality rights also implicitly reinforces and naturalises the representationalist hierarchy between the observer (persons or entities which 'create' the representation) and the observed (natural person concerning whom representation is made). Such naturalisation of the representationalist hierarchy of the observer/observed is reinforced through the erasure of an account of observed's agency in the production of data. Much like within the open data and free flow principles, the protected subject under personality rights is not seen as an active contributor to the creation of

knowledge about them. Instead, this protected natural person is constituted as a passive entity: While this natural subject may in general have agency, their agency is not deemed to be relevant to the production of any information, data, or representations about them.

By constituting data, information or representation within the category of legal person, the data, information or representation of the natural person is construed as 'natural' or 'naturally existing.' So, for instance, a photograph or representation of the likeness of a natural person is understood to be a natural and inherent part of their body and being rather than something which involves the natural person's agency in the process of being created. As discussed in Chapter 3, through the development of modern human and social sciences, the human body has been treated as part of Nature through the creation of the mind/body and Nature/Culture dichotomies as part of the Western cultural archive. [119] Considering that representations are treated as part of the natural person's body or physical likeness, they are also deemed to be given, already existing, and simply 'discovered' or 'collected.' In this context, the natural person (observed) is not seen to be exercising any agency or performing any sort of labour for the production of their representation. Any such agency exercised or labour performed is understood to be that of the observer or the person who 'makes' or 'creates' the representation. The representation is not understood as the hierarchical onto-epistemological relationship between the observer and observed; but rather, as an epistemological artefact which can be alienated from the observer and observed's ontological relationship of power. In this way, representationalist assumptions are co-produced/reproduced even within the legal framework of personality rights where representations are constituted as legal persons.

[119] *Supra*, §3.2

Representationalism is, thus, co-produced into the law not merely through the conceptualisation of data as legal thing but also in the conceptualisation of representations —particularly those identifying natural persons— as legal person. The reproduction of representationalism within law should then be understood not only through the mechanism of construction of data as thing; but rather, as a negotiation between the categories of legal person and thing within the person/thing dichotomy in law. It is the dichotomy of the legal person/thing *as a whole* which is relevant to the co-production of representationalism within law; and not merely the translation into one category of this dichotomy. Instead of mere shift in the division or boundaries so that what/who falls under the categories of legal person or thing is altered, what animates the politics of representationalism in the production of data's legality is the very existence of the dichotomy between the legal person and thing. As will be seen in what follows, representations identifying natural persons over time have been constituted as legal thing through the category of personal data. In effect, this implies that the construction of representations identifying natural persons is a negotiation between the legal person and legal thing categories of the legal person/thing dichotomy. As will be argued however, in either case, representationalism underlies the dynamics of such negotiation.

5.4. To Data as Personal

By the late 1960s and 70s, the use of data and computing technologies had become widespread in the political economy that consisted of both private enterprise, public institutions and their entanglements. As a result, the legal framework of personality rights was deemed inadequate to protect the human individual or the natural person from the misuse of information relating to them. This led to the development of data protection frameworks whereby the concept of 'personal data' was properly developed and accorded a different meaning and

significance than the older personality rights regime. This new understanding of personal data was deployed to protect the natural person, who was later reframed as the 'data subject'; and eventually led to the development of a consolidated data protection law throughout the European Union. The present section maps how information or representations which identified the natural person were constructed as 'personal data' in this context. In addition, it maps how this appearance of personal data marks a shift in the formulation of information relating to an identifiable natural person— from a legal person to a legal thing.

5.4.1. Data Protection as Political Economic Agenda

As discussed earlier, by the 1970s the consolidation of the data market in Europe was identified to be essential for the competitiveness of European data protection industry in international markets.[120] Additionally, the European Community at the time and later the EU was dedicated to the goal of creating a free market in Europe with no national barriers in accordance with the fundamental freedoms of service and establishment that formed its constitutional principles. However, the concept of personal data i.e., data which identified or could be used to identify natural persons, presented a barrier in the completion of such a Europe-wide free market. This was because each national jurisdiction in EU had its distinct history and nationally-embedded legal regulation for the governance of data that could identify or could be used to identify a person. Often, these governance regimes materialised legally in the form of personality rights and early national and provincial data protection regimes; which sought to control the use and flow of information relating to identifiable human individuals.[121]

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[120] *Supra*, §5.2

[121] Spiros Simitis, 'Privacy: An endless debate?' (2010) 98(6) California Law Review 1989; Frits W. Hondius, *Emerging Data Protection in Europe* (North Holland Publishing Company 1975) 35-36; Spiros Simitis, 'Einleitung: Geschichte—Ziele—Prinzipen,' in Spiros Simitis (ed.) *Bundesdatenschutzgesetz* (Nomos 2006) 61

Establishing and increasing competitiveness of the data processing industry in Europe, however, required free flow of various sorts of data, and the differently regulated national regimes for data protection; and personality rights posed a barrier for this. As a result, the development of a European Community-level framework; and later, an EU-level regime for data protection became essential to the consolidation of data markets in Europe.

The origin of data protection law is most often analysed from a human rights or fundamental rights perspective. However, as is often the case, these human rights considerations do not exist in a vacuum and are in fact closely entangled with material political economic considerations.[122] From the perspective of the European political economy, data protection law serves an important purpose viz., the establishment of a Europe-wide single market for data. This economic rationale justifying EU data protection law needs to be taken seriously by data governance and data protection scholars in order to grasp how data protection law facilitates the contemporary data economy, and the political implications of the same. In the present section, I outline some of the historical developments that outline the role and politics of data protection law within the political economy of Western Europe.

The importance of data protection for the establishment of a Community-wide data processing market was recognised as early as the late 1960s when the Computer Utilisation Group of OECD Committee on Science Policy conducted

[122] B. Rajagopal, 'Counter-Hegemonic International Law: Rethinking Human Rights and Development as a Third World Strategy' (2006) 27(5) Third World Quarterly 767; Upendra Baxi, *The Future of Human Rights* (OUP 2008); B.S. Chimni, 'Third World Approaches to International Law: A Manifesto' (2006) 8 International Community Law Review 2. *See* also, Makau W. Mutua, *Human Rights: A Political and Cultural Critique* (University of Pennsylvania Press 2008); Sumi Madhok, *Rethinking Agency: Developmentalism, Gender, and Rights* (CUP 2013); Samuel Moyn, *Not Enough: Human Rights in an Unequal World* (Harvard University Press 2019); Susan Marks, *A False Tree of Liberty: Human Rights in Radical Thought* (OUP 2019)

a series of studies on telecommunications and electronic data,[123] which ultimately resulted in the evolution of the discourse of data protection and privacy in Western Europe.[124] These studies resulted in a report published by OECD in 1971 on 'Digital Information and the privacy problem,' which focused on questions of data protection and privacy.[125] This episode additionally illustrates the entanglements of a fundamental and human rights issue like privacy and data protection with questions of political economy: For here we have an economic organisation like OECD, which parallel to its initiatives for promoting computerisation and use of electronic databanks in industry begins to show an increasing interest in questions of data protection and governance.

As a result, 1972 saw the establishment of an OECD Board called the Data Bank Panel, which engaged with issues of regulation concerning personal data in automated databases.[126] It also organised a seminar titled OECD Seminar on Policy Issues in 1974 that resulted in the identification of what would become a major concern for OECD in the area of data governance viz., 'transborder data flows.'[127] In this manner, the policy instruments of the OECD generated the initial push for the development of data protection law in Europe. It is notable, however, that the particular context in which this push was generated concerned itself with promoting free flow of data across national borders such that it may enable the growth of computer and data processing industry— demonstrating

[123] Gloria González Fuster, *The Emergence of Personal Data Protection as a Fundamental Right of the EU Law* (Springer 2014) 76-77
[124] Hondius (1975), *supra* n. 121, 57; *supra* n. 123
[125] Organisation for Economic Co-operation and Development, *Digital Information and the privacy problem* (OECD Informatics Studies 1971). For a retrospective on this report *see*, Hans Peter Gassmann, '30 Years After: The Impact of the OECD Privacy Guidelines,' Address to the OECD Joint Roundtable of the Committee for Information, Computer, and Communications Policy (ICCP), and its Working Party on Information Security and Privacy (WPISP), 10 March 2010 <http://www.oecd.org/sti/interneteconomy/44945922.doc> accessed 20 September 2021
[126] *Supra* n. 123, 76-77; Hondius (1975), *supra* n. 121, 35
[127] *Supra* n. 123, 76-77; Gassmann (2010), s*upra* n. 125, 1

the intertwined nature of data protection law and the political economy of data from the earliest years of the evolution of the data protection framework.

The establishment of a common market for data as a driver for data protection regulation is, moreover, also visible in the proceedings of the European Community in this context. In 1976, the European Parliament passed a Resolution on the protection of the rights of the individual in the face of developing technical progress in the field of data processing. The Resolution also instructed the Legal Affairs Committee of the European Parliament to report on the issue. Accordingly, a subcommittee called the Data Processing and Individual Rights Subcommittee was set up and was active from June 1977 to March 1979; researching the legal questions surrounding individual rights and data technologies. The Subcommittee eventually presented its Report to the Parliament (popularly called the Bayerl Report after its Rapporteur) in 1979.[128] Based on the Bayerl Report, the European Parliament in 1979 adopted a Resolution on the Protection of the rights of the individual in the face of Technical Developments in Data Processing.[129]

While the Resolution recognised the early data protection legislations that had been introduced in context of automated filing systems in some Member States at the time, it simultaneously emphasised the need to guarantee the free movement of information.[130] However, it did not pose it two goals in opposition. Rather, it stated that "*the free movement of information implies a harmonious development of the various national legislations guaranteeing individuals liberties and privacy against the*

[128] *Supra* n. 123, 75
[129] In addition to the Bayerl report, the Resolution was also the result of Parliamentary debates of 8 July 1974 and 21 February 1975, and referred to the earlier resolution of 8 April 1976, EEC Treaty Art. 2, 3, 100, 210, 229, 230, and 231 and the Joint Declaration by the European Parliament, the Council and the Commission on the respect of fundamental rights, *Supra* n. 82, 34-35
[130] *Supra* n. 82, 35

misuse of data processing."[131] And in the same breath, it recognised the importance of protecting individual rights in the light of data technologies as important to democratic society.[132] Through these developments, the foundations of data protection law in EU were laid.

It should be noted that the 1979 Resolution stressed the need for the development of a genuine common market in data processing that would guarantee the free movement of goods and services and prohibit the distortion of competition.[133] Furthermore, the Resolution explicitly recognised that the national provisions of the Member States to protect privacy had had "*a direct influence on the establishment and operation of the common market and, in particular, distort the conditions of competition*."[134]

While this assertion may seem to imply that the Resolution pitched data protection measures, on the one hand: and the development and competitiveness of the common market of data processing, on the other to be opposing goals or interests; it should, in fact, not be read in this manner. For, it was not general measures to protect privacy and individual rights that the Resolution and the Community in general saw as a threat to the common market; but rather, it was *national* measures to do so that were found to conflict with the goal of a common market. Consequently, in opposition to national measures, a European Community-wide policy or legislation for privacy and data protection became essential rather than an obstruction for the establishment and smooth operation of a European data processing market.

131 *Ibid.*
132 *Ibid.*
133 *Supra* n. 82, 35¶1
134 *Supra* n. 82, 35¶2

As a result, even as the 1979 Resolution identifies national measures to protect privacy as distortion of competition,[135] it also calls upon the Commission to *"prepare a proposal for a Directive on the harmonisation of legislation on data protection to provide citizens of the Community with maximum protection*".[136] Furthermore, it states that such a legislation must be "*primarily designed to remove any technical obstacles to the exchange of information"*[137] and that data protection at the Community level both to individuals and undertakings legal persons would be necessary for the smooth functioning of the common market; and could be extended in an appropriate form to political, trade union, and religious groups as well.[138] In this manner, the text of the 1979 Resolution reveals an important link about how early Community policy envisaged Community-level data protection law as necessary to the establishment and functioning of the Europe-wide data market. The Resolution provided a set of recommendations to realise this objective to protect rights of individual in face of developments in data technologies in the larger context of development of the European common market.

In 1979, the Commission also issued a Communication on European Society and Data Technologies, [139] which was focused on development and exploitation of the benefits of information technologies. While the Communication made policy recommendations for the establishment of a unified Europe-wide market for information technology and data processing, the Commission also recommended developing a strategy to ensure that there was no encroachment on private and life and individual liberties through the use of such technologies in this context.[140]

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[135] *Ibid.*
[136] *Supra* n. 82, 35¶4
[137] *Supra* n. 82, 35¶6
[138] *Supra* n. 82, 35¶7
[139] Commission of the European Communities, 'Communication for the European Council Session, Dublin, 29/30 November 1979 on European Society and the Data Technologies: Towards a Community Response' COM(79) 683 Final, 22 November 1979 (Communication on European Society and Data Technologies)
[140] *Supra* n. 139, 4

Such a policy was identified to counter the limitations that would resist innovation. [141] Continuing the stance of the 1979 European Parliament Resolution, the protection of individual rights and private life in the face of data technologies was understood not as a barrier for innovation and development of a European data market; but rather, as a crucial facilitator for innovation and development in such a market.

The development of data protection law in the European community, thus, had not only a fundamental and human rights dimension but a distinct political economic rationale for the expansion of the European Community's interests in the global data processing industry. This political economic rationale and its influence on shaping data protection as a human and fundamental right in the EU needs to be taken seriously.

Importantly, the justification for data protection on the basis of human and fundamental rights, on the one hand; and as rooted in political economic rationales, on the other must not be understood to constitute two distinct discourses which are in tension with each other; or, worse, as separable. Contemporary legal scholarship on data protection in Europe tends to distinguish between these two discourses separating concerns of fundamental rights from the issues of political economy.[142] As will be seen, such discursive separation only serves to obscure the crucial role which data protection law plays in shaping the politics of the data economy by reinforcing representationalism.

The developing interest in data protection as an instrument to enable a consolidated and smooth functioning of the data processing market led to the development of a key international instrument in this field soon enough. This

[141] *Ibid.*
[142] *Supra* n. 59; *See* also, *supra*, §1.5, 4.4

instrument appeared in the form of the OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data adopted in 1980.[143] As has been argued elsewhere, such international development enabled the progressive linkage of 'data protection' with the term 'privacy.'[144] In parallel to this development, the European Parliament passed a Resolution in 1982 reaffirming a fundamental right to data protection and advocating the adoption of a Community instrument on data protection to promote the aims of a common market. Eventually, by the mid-1990s, this led to the proposal and adoption of the EU Data Protection Directive[145] that served as a precursor to the General Data Protection Regulation (GDPR), adopted in 2016. Notably, much like the Data Protection Directive it replaced, the GDPR also affirms the twin aim of the protection of personal data of individuals and privacy as a fundamental right as well as the creation of a common market for data in Europe without barriers to the free flow of information.[146] In this manner, the agenda planted by OECD research in the 1960s to envision data protection law as an instrument for facilitating transborder data flows came to a full circle by the mid-2010s through the enactment of a directly binding EU Regulation; which confirmed the importance of the fundamental right of data protection in the creation of common data market for Europe where the free flow of information would prevail.

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[143] *Supra* n. 123, 75

[144] *Ibid.*

[145] Directive (EU) 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data [1995] OJ L 281 (Data Protection Directive)

[146] On this point, *compare* Art. 1 of the Data Protection Directive, *supra* n. 145, which lays down its object as follows: "*1. In accordance with this Directive, Member States shall protect the fundamental rights and freedoms of natural persons, and in particular their right to privacy with respect to the processing of personal data. 2. Member States shall neither restrict nor prohibit the free flow of personal data between Member States for reasons connected with the protection afforded under paragraph 1,*" with Article 1(1) of the GDPR, *supra* n. 2, which lays down its subject-matter and objective: "*This Regulation lays down rules relating to the protection of natural persons with regard to the processing of personal data and rules relating to the free movement of personal data.*"

5.4.2. Personal Data as Commodity

The persistence of the entangled use of data protection as an instrument for fundamental/human rights protection that enables a consolidated European data economy moreover marks a decisive shift in the understanding of personal data — from being constituted as legal person to legal thing. In other words, *the emergence of data protection law marks a break from the construction of personally-identifying representations as legal person and moves towards the construction of such representations as legal thing through the new category of 'personal data.'* Prior to the evolution of data protection under the personality rights regime, data relating to an identifiable natural person, or personal data was considered to be inseparable from said person. As previously outlined, the violation of personality rights under this understanding amounted to a violation of the inherent feature of the human individual themselves.[147] However, the emergence of data protection law as a political economic instrument enabled the construction of personal data in the sense we know today— as a commodity that could flow freely as an independent entity separable from a human individual. In other words, as a legal thing.

Much like data or representations not associated with identifiable natural persons, personal data too became constituted as a commodity within the data protection framework that consolidated the data markets of the EU. Unlike the personal representations, information, and data of the personality rights regime, personal data under the data protection framework could be alienated from a natural person to be separated, processed, and stored elsewhere without harming the legal personality of said person. And while the identifiable natural person could still claim certain rights with respect to such data, these rights now flowed from the natural person's claim to personal data as legal thing rather than with respect to their own person. The legal foundation that enabled exercise of rights to data,

[147] *Supra*, §5.3

information, and representations relating to an identifiable natural person had, thus, conceptually transformed. And with such conceptual transformation came fundamental shifts in how personal data was to be treated in practice: From being an inalienable part of the human person, personal data was transformed into alienable and transferable commodity which could be safely traded within legally-compliant markets. This transformation of personal data into a commodity that could flow freely alongside non-personal data was absolutely indispensable for the creation of the EU Digital Single Market. The price to pay for this transformation was data protection.

5.4.3. Representationalism through Personal Data

By constituting personal data as a commodity that can be traded on the principle of free flow of data within data protection-compliant markets, personal data has, thus, been constituted as legal thing. This enables the shift from the construction of representations of natural persons as legal person under the personality rights framework towards their construction as legal thing via the construction of such representations as 'personal data.' The move from personality rights to the data protection regime of personal data certainly enables the commodification of data identifying a natural person in a way that was not possible before. The data protection regime, thus, aids in the facilitation of the EU single market economy and the Digital Single Market; which depend on the availability of data within commodity relations. Even as it is afforded special and more protected status by virtue of its relationship to a natural person or a human under data governance law, personal data is not immune from being treated as a commodity by virtue of its status as legal thing within the person/thing dichotomy.

This point is critical because it gestures towards the persistence of representationalism even when the construction of data identifying natural persons shifts from the paradigm of personality rights towards the paradigm of

data protection. In other words, representationalism underlies not just the construction of personal information within the personality rights framework; but also lives within the conceptualisation of data as personal under the data protection framework. As has been argued in before, the construction of data as a commodity is built upon the assumption of its availability to be commoditised within the understanding of data as part of the public domain. Against this backdrop, personal data needs to be understood as a specially-protected category of this public domain; and data protection law as a framework that guarantees specific rights to the data subject, defining their relationship with a myriad of other legal persons like the data controller and the data processor.[148] This special status of personal data nevertheless construes personal data as the as part of the public domain or more specifically, of biopolitical public domain that Julie Cohen has outlined in her work, and which has been discussed in Chapter.[149] As has also been illustrated, the legal conceptualisation data, in general, and personal data, in particular as public domain, inheres representationalist assumptions that are co-produced with the non-law, and its understanding of data as a resourcing instrument, number, and as resource.

Accordingly, the construction of data as personal under data protection law not only marks a shift towards its construction as legal thing; but also co-produces representationalist assumptions about data. Building upon the 'non-legal' understanding of data as a resourcing instrument, number, and resource, representationalism thus manifests within the 'legal' of the modern legal form.

[148] In this regard, *see* GDPR, *supra* n. 2, Chapter III, which outlines the rights of the data subject, prominently with respect to the (data) controller and processor. Art. 4(7) of the GDPR defines the 'controller' as "*the natural or legal person, public authority, agency or other body which, alone or jointly with others, determines the purposes and means of the processing of personal data; where the purposes and means of such processing are determined by Union or Member State law, the controller or the specific criteria for its nomination may be provided for by Union or Member State law*." Art. 4(8) defines the 'processor' as "*a natural or legal person, public authority, agency or other body which processes personal data on behalf of the controller*."

[149] *Supra* n. 39; *supra*, §4.4

As per these representationalist assumptions within the 'legal', the construction of data as personal implies the treatment of such data as a different category (i.e. epistemology) from the ontological conditions of its production. In fact, more often than not, the legal category of personal data is not even assumed to be produced or constructed; but deemed to be naturally existing in the world innocently attached to a natural person.

5.4.4. Erasure of Entangled Human and Unhuman Agencies through the Legal Form of Personal Data

The implicit assumption about personal data's givenness and natural existence further perpetuates the representationalist erasure of the entangled human and unhuman agencies that underlie the production of such data. Because within the modern legal form or aesthetic, data as an epistemological category is deemed to exist *a priori* to law merely waiting to be discovered or 'collected' by legal persons, the politically-charged account of such data's actual production as public domain/commons and as commodity can easily be omitted. Because representationalism is so deeply rooted within the Western cultural archive and our habits of thinking, such omission of the account of production of data and the erasure of the observed's entangled human and unhuman agencies underlying it seems most natural and obvious. Even when data is construed as part of the biopolitical public domain in general commodity specifically, it seems to appear naturally, apolitically without any underlying labour or agency expended in such construction.

Consider the example of a natural person's name, which under the data protection framework is deemed to be personal data. Classified under the legal category of personal data, such name is a legal thing that appears as commodity within data markets; yet no account of the agencies or labour which enable its production is provided. Rather, in association with a natural person, it is deemed

to simply exist. As argued earlier, such framing of data as naturalised can only be accomplished by a representationalist framework of imagining, constructing, producing data which denies the observed's agency in creating knowledge and data. As a result, the data subject, who is the observed, never appears as a labouring subject in data protection law. This is because under the representationalism of the Western cultural archive the agency of the observed in the production of data is always erased and never recognised. And since the observed's labour in data production is a specific manifestation of observed's agency, the observed's or the data subject's labour in the production of personal data is always erased within this representationalist arrangement. *So, while the data subject is often presented as a consuming subject; they are never presented as a labouring subject that expends their agency and from whom labour is extracted for the production of data.*[150]

One may counter this argument by stating that there is, in fact, no agency expended in the production of personal data; for instance, in the production of the name of the data subject/natural person/observed, since it is already given. One may further propose that rather agency and labour is only expended in the discovery and collection of such name, which can be attributed to the observer.

My response to such proposal would be to note that this counter-argument can only anchor itself within a representationalist form, and can only be formulated in a representationalist culture or worldview which (1) separates the realms of

[150] By contrast, media scholars have argued that in digital societies of advanced capitalism, the data subject is inherently a labouring person whose labour is exploited within the 'social factory' i.e., beyond the workplace in all walks of life and social interactions. *See* for instance, Tiziana Terranova, 'Free Labor: Producing Culture for the Digital Economy' (2000) 18(2) Social Text 33; Marc Andrejevic, 'The Work of Being Watched: Interactive Media and the Exploitation of Self-Disclosure' (2002) 19(2) Critical Studies in Media Communication 230; Brice Nixon, 'The Exploitation of Audience Labour: A Missing Perspective on Communication and Capital in the Digital Era' in Eran Fisher and Christian Fuchs (eds.), *Reconsidering Value and Labour in the Digital Age* (Palgrave Macmillan 2015); Christian Fuchs, 'An Alternative View of Privacy on Facebook' (2011) 2(1) Information 140. See also, Gilles Deleuze, 'Postscript on the Societies of Control' (1992) 59 October 3

ontology and epistemology; thus, allowing for the knowledge of the name to appear as data in the epistemological realm independent, abstract, and free of the ontological context of its creation as data. (2) Such representationalism also creates a hierarchy between the observer and the observed/natural person/data subject by recognising the agency of the former and denying the agency of the latter in the creation of the name as data. As a result, (3) representationalism treats the existence of the name as data being given and natural; and not as something which is produced by the efforts and agencies of the observed and their entanglements with human and non-human communities. As a result, it can only provide an account of the labour and agency of observer in the 'discovery' and 'collection' of the name as data and fails to account for the entangled agencies of the observed and their communities in the production of their name.

By contrast, a non-representationalist worldview would understand data not as an independent epistemological artefact but as an onto-epistemological *relationship*. In this worldview, there is nothing natural or given about data. Rather, all data is produced as ways of relating through the entangled agencies of the observed and the observer with their human and unhuman communities and location. Nor are such entanglements staid or innocent. Instead, they are politically significant. So, for instance, the non-representationalist understanding of a name in particular and data in general as onto-epistemological relationships also means accounting for these relationships as relationships of power. In alignment with this position, sociologist Ruha Benjamin has commented on the political relationships that naming creates. She observes, "*If names are social codes that we use to make everyday assessments about people, they are not neutral but racialized, gendered, and classed in predictable ways. Whether in the time of Moses, Malcolm X, or Missy Elliot, names have never grown on trees. They are concocted in cultural laboratories and encoded and infused with meaning and experience- particular histories, longings, and anxieties. And some people, by virtue of their social position, are given more license to experiment with unique*

names. Basically, status confers cultural value that engenders status, in an ongoing cycle of social reproduction." [151]

Two points are of note here: First, that names do not exist in a political vacuum as epistemological artefacts outside of the ontological politics of their creation. And second, that names are indeed produced through a myriad of entangled agencies between the observer, observed, and beyond when they are exploited as data; so, they cannot be treated as always existing or given. As Benjamin succinctly observes, names indeed do not grow on trees. Rather they are *produced* via myriad agencies of cultures-natures.

These insights in the context of names may be extended to personal data in general. *Personal data, like all data, thus need to be understood not as given, natural or settled artefacts; but as dynamic relations that are created through differentiated and political agencies of the human and the unhuman.* Representationalist legal cultures fail to account for such creation and its underlying political entanglement of agencies; thus, erasing the contribution of these agencies in the production of data in general, and personal data, specifically. As a result, much like non-personal data, personal data too appears to the law as part of the biopolitical public domain— already given and natural. As part of nature, abstract and free from the conditions of its production, data thus appears ready to be commoditised as part of global data markets. By enabling these processes of the creation of data as an abstracted epistemological artefact and its negotiation between the person/thing dichotomy of modern data governance law, representationalist assumptions thus play a central and crucial role in the exploitation of such data within the political economy of the digital Earth.

[151] Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code* (Polity Press 2019) 11

5.5. Conclusion

In this Chapter, I have undertaken a historicised mapping of how data is conceptualised within modern data governance law through the categories of non-personal and personal data while correspondingly being negotiated between the categories of legal person and legal thing. In this context, I have illustrated how data is conceptualised as commodity within the framework of contemporary data economy in the EU through the legal principles of open data, free flow of data, and data protection. Through such mapping, I have illustrated how representationalist assumptions are rife even within the construction of data within modern data governance law. As argued, this process facilitates the conceptualisation of data as an epistemological artefact which is treated as given and natural under law, and deemed to exist independently from the ontological relations implicated in its production.

I have further illuminated how these representationalist assumptions allow for the erasure of the observed's agency in the production of data from the sphere of the legal within the modern legal form. As a result, the data subject is construed as a passive entity without agency in the production of data and never deemed to be a labouring subject in the process of data production. In any case, the understanding of data as commodity and public domain, and by extension, as a resource is naturalised; undertaken through the co-production of knowledges by the non-legal and the legal within the modern legal form. My argument has been that under all such conceptualisations of data within modern data governance law lies the spectre of representationalism, which erases the understanding of data as an entangled onto-epistemological relationship. It does this by erasing the agency and labour of the observed in the creation of such data within both the categories enacted by data governance law; that is, within both non-personal and personal data.

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Part III

Unsettling Representationalist Imaginaries

CHAPTER 6

DATA AND THE ERASURE OF HUMAN AGENCY

"I am not your cannon fodder, or the invisible worker,
Or your entertainment…" [1]

6.1. Uber, Data, and Representationalism

The previous Chapters have mapped how the concept of data is co-produced at the boundary of the law and the non-law engineered through the Selbstreflektion of the modern legal form. In undertaking this mapping, I have argued that representationalism and its assumptions underlie the construction of data throughout the legal and non-legal spheres that are constituted as part of the Western cultural archive, and that such representationalism has political implications. In the present Chapter and the next, the implications of such representationalist constructions of data shall be mapped using two concrete contextualised examples in the global value chain of data production. In this regard, the present Chapter seeks to map the implications of representationalist constructions of data through the figure of the Uber driver: In doing this, I

[1] Abhay Flavian Xaxa, 'I am not your data' (2011) <https://www.roundtableindia.co.in/i-am-not-your-data-nor-am-i-your-vote-bank-in-memoriam-sociologist-and-activist-abhay-xaxa-2/> accessed 19 February 2021

illustrate how such representationalist constructions enable the law to perpetuate exploitation in the digital Earth by erasing the understanding of data as a relation. Contrary to representationalist understandings of data, which constitute it as a person or thing, this Chapter accordingly seeks to countermap data as a *relation*. I do this in the context of Uber to reveal the concrete political exclusions that are engineered through the modern legal form's representationalist construction of data.

It is important to remember that Indigenous critiques of representationalism have often called for the conceptualisation of knowledge, in general, and data, in particular, as a relationship; rather than as an epistemological artefact, resource, or commodity.[2] Neither is such relationship limited to those between humans; it also includes unhuman relationships and relationships between human and unhuman entities. In this non-representationalist worldview, data and knowledge are understood as contextualised place-based relationships. Accordingly, such a worldview acknowledges the entangled agencies of both human and unhuman entities in the production of data/knowledge.[3] This non-representationalist construction of data as an entangled relationship between multiple agencies that differentiate themselves as human and unhuman allows for the accounting of the diffused observed's agencies in the data production process; agencies that are otherwise erased in representationalist construction of data. The countermapping of data from a non-representationalist position, thus,

[2] Maggie Walter & Michelle Suina, 'Indigenous data, Indigenous methodologies, and Indigenous data sovereignty' (2019) 22(3) International Journal of Social Research Methodology 233; Tahu Kukutai & John Taylor (eds.), *Indigenous Data Sovereignty: Towards an Agenda* (Australian National University Press 2016); Janelle Baker, 'Research as Reciprocity: Northern Cree Community-Based and Community-Engaged Research on Wild Food Contamination in Alberta's Oil Sands Region' (2016) 2(1) Engaging with Indigenous Communities 109

[3] Vanessa Watts, 'Indigenous Place-Thought and Agency Amongst Humans and Non-Humans (First Woman and Sky Woman Go on a European World Tour!)' (2013) 2(1) Decolonisation, Indigeneity, Education & Society 21; Barbara Deloria, Kristen Foehner & Sam Scinta (eds.), *Spirit & Reason: The Vine Deloria, Jr. Reader* (Fulcrum Publishing 1999)

necessarily demands a mapping of how knowledge relations across human and unhuman agencies produced; and how subjects and objects are made.

In the non-representationalist countermapping of data in the context of Uber operations undertaken in the present Chapter, I accordingly seek to highlight these entangled agencies in the production of data. I focus particularly on the human figure of the Uber driver who as a legal data subject also acts as the observed entity in the production of data through the Uber mechanism. My aim here is to outline the agency of the driver in the process of data production; while understanding such agency as entangled with the unhuman agencies of the land, through the use of data technologies. Following Indigenous scholarship, I do not contend that human and unhuman agencies can be neatly or definitively separated from their entanglements in the data/knowledge production process. Rather, my aim in this Chapter is to highlight the particular agential aspects of data production associated with the Uber driver's activities with the specific aim of highlighting erasure and exploitation of the driver's labour in the data production process. In effect this countermapping illustrates how data under the representationalist worldview —co-produced through the mechanism of Selbstreflektion that brings together the contemporary political economy of data (as part of the 'non-law' of the modern legal form) and the legal understanding of data constituted by data governance frameworks (or, the 'law' of the modern legal form) in a distinct orientation— facilitates the erasure of the human-observed's agency in the production of data.

To do this, the next section outlines the understanding of Uber as a data generation machine. Here, my argument is that the core business of Uber should not be understood in terms of ridesharing or any other services it directly offers to customers. Rather, it is the production of increasing amounts of data which

should be understood as the core business of Uber. I propose that this shift in framing Uber's organisation and aims is important because it enables us to map the figure of the Uber driver and the exploitation of their agency not only in terms of their ridesharing work; but also in terms of their work as a data producer. Accordingly, I discuss the manifestation of the Uber driver's agency to illustrate how the production of data allows for the creation of data technologies, which are in turn, used to manage the driver's agency. But at the same time, such algorithmic management of drivers through data technologies is deployed to produce even more data at the behest of driver agency.

The argument is that this cyclical process of management of agencies for the production of data is what marks Uber as a data generation machine. In this context, I draw upon the work of Marxist anthropologist Biju Mathew on the labour relationship that exists between Uber drivers and their data to illustrate how Uber deploys data grids at different levels or scales to benefit from the construction of data as commodity as well as capital, while erasing the agency of drivers in the production of such data within global value chains.

It will be seen that given data governance law's representationalist construction of data, the law is unable to intervene at these crucial sites of agential and labour exploitation in meaningful ways. Rather, the law contributes to and reinforces the political erasure and exclusion of the agency of the Uber drivers from the process of data production within the global value chains of data. In this manner, this Chapter exposes the inherent linkage between the political economy of data and questions of agency of drivers (data subjects/observed). It further illustrates how by the construction of drivers as data subjects, the exploitative extraction of their agency as labour in the production of data is effectively erased by modern data governance law.

6.2. Uber as a (Algorithmically-Managed) Data Generation Machine

The experience of our data economies is marked by the precarisation of work. Precarious work may be understood as the 'demutualisation of risk' or a process through which the risk and responsibilities of the employers' undertaking is shifted onto those who labour to produce profits for said undertaking.[4] Such demutualisation of risk is achieved through several techniques: For instance, the proliferation of non-permanent, involuntary part-time or temporary work, long hours or the absence of a written contract for employment, irregular pay or unclear working hours or duties that vary with the employer's wishes.[5] Often presented as labour flexibility or as flexible work conditions advantageous to employees, together and separately these conditions, in fact, contribute to a loss of one's dignity at work, which is core to the precarious experience of labour.[6] As will be seen, all of these precarious conditions of labour are present in our data economies; however such precarisation also has long histories that extend beyond the contemporary.

6.2.1. Virtualiation of Work Organisation as Precarisation of Labour

Scholars have situated precarious labour in data economies that is often mediated through platform interfaces and data, algorithmic, and AI technologies against the larger history of degradation of work in the neoliberal era. Spurred by policies of fiscal austerity, labour market restructuring, and the growing dominance of financial capital since the late 1970s, digital labour precariousness particularly in the so-called gig economy has been understood as the latest

[4] *See* generally on the concept of 'demutualisation of risk,' Mark Freedland and Nicola Kountouris, *The Legal Construction of Personal Work Relations* (OUP 2011)

[5] Neoklis Sylikiotis, 'Report on Working Conditions and Precarious Employment', 2016/2221(INI), 14 June 2017, 7 <https://www.europarl.europa.eu/doceo/document/A-8-2017-0224_EN.pdf> accessed 24 September 2021

[6] Virginia Mantouvalou, 'Human Rights for Precarious Workers: The Legislative Precarious of Domestic Labour' (2012) 34 Comparative Labor Law & Policy Journal 133

episode in a vaster trend towards the casualisation of labour.[7] By the 1990s, the liberalisation of international trade relations and capital circulation also resulted in the outsourcing of labour from the Global North to countries in the Global South with the deployment of low wages and worse working conditions.[8] On the one hand, this development exacerbated the experience of precarious work across geographies; and, on the other, resulted in weakening international labour solidarity.[9] In this context, the rise of temporary staffing agencies and the normalisation of zero-hour contracts and just-in-time services have also understood to constitute an important precursor to work in the contemporary data economy.[10] These practices, which have long been used to promote 'labour flexibility' actually force the worker to be at the beck and call of the employer at low wages; while also chipping away at the guarantee of a consistent income, thus shifting the risk of employment to the worker.[11] It is against this historical background that labour precariousness in digital societies needs to be understood.

According to labour theorist Ursula Huws, while novel forms of digitisation enable the precarisation of labour, the experience of its degrading conditions of labour is really part of a larger global trend of labour precarisation that extends

[7] Niels van Doorn, 'Platform Labour: on the gendered and racialized exploitation of low-income service work in the 'on-demand' economy' (2017) 20(6) Information, Communication & Society 898, 900-901; Jamie Peck & Nick Theodore, 'Politicizing Contingent Work: Countering Neoliberal Market Regulation…from the Bottom Up?' (2012) 111(4) South Atlantic Quarterly 741, 746; Fiona MacPhail & Paul Bowles, 'From Casual Work to Economic Security: The Case of British Columbia' (2008) 88(1) Social Indicators Research 97; Iain Campbell, 'Casual Work and Casualisation: How Does Australia Compare?' (2013) 15(2) Labour Industry: a journal of the social and economic relations of work 85, 100-101; Valerio De Stefano, 'The Rise of the "Just-in-time workforce": On-demand work, crowdwork and labour protection in the "gig-economy"' (2016) 37(3) Comparative Labor Law & Policy Journal 471

[8] van Doorn (2017), *supra* n. 7, 901; Peck & Theodore (2012), *supra* n. 7. *See* also, Kalindi Vora, *Life Support: Biocapital and the New History of Outsourced Labor* (University of Minnesota Press 2015)

[9] *Ibid.*

[10] van Doorn (2017), *supra* n. 7, 901

[11] Uma Rani & Marianne Furrer, 'Digital labour platforms and new forms of flexible work in developing countries: Algorithmic management of work and workers' (2021) 25(2) Competition & Change 212

beyond the emergence of the digital.[12] This global trend is rooted in what she terms the 'virtualisation of work organisation.' The virtualisation of work organisation refers to a series of developments in management and labour organisation since at least the 1970s that included the rise of freelance labour markets, teleworking, and standardisation and performance monitoring. These facilitated more quantified imaginations of labour.[13]

The quantification of labour manifests in the data economy today most obviously as 'virtual work' i.e.., as labour carried out using a combination of digital and telecommunications technologies and/or production of content for digital media.[14] Less obviously however, it also manifests in the physical processes of production of material goods and the delivery of services in real time and space to customers in person.[15] Importantly, these processes are organised in ways that enable the easy measurement, commensurability, and quantification of labour in order to contribute to the demutualisation of risk, while simultaneously being dressed under the labels of disruptive innovation and flexibility of work.[16] Data technologies like digital platforms, predictive machine-learning algorithms and AI are key tools, which are deployed in this endeavour of labour quantification for the virtualisation of work organisation today. Together, they shape the precarious experience of work.

Uber serves as one such example of the virtualisation of work organisation. Uber brands itself as an online platform service that connects ride-seeking passengers

[12] Ursula Huws, 'Where Did Online Platforms Come From? The Virtualization of Work Organisation and the New Policy Challenges It Raises,' in Pamela Meil & Vassil Kirov (eds.), *Policy Implications of Virtual Work* (Palgrave Macmillan 2017) 31
[13] *Supra* n. 12, 39. *See* also, David Beer, *Metric Power* (Palgrave Macmillan 2017)
[14] *Supra* n. 12, 30
[15] *Supra* n. 12, 31
[16] Lilly Irani, *Chasing Innovation: Making Entrepreneurial Citizens in Modern India* (Princeton University Press 2019)

with ride-sharing drivers.[17] In enabling this service, Uber has often tried to distinguish itself from traditional taxi services that employ drivers to cater to the demand of private transportation services from one point to another. This distinction stems through its use of data technologies which side-step the need for employing taxi drivers, but instead provide every individual potentially looking to offer private taxi services with an electronic means to find passengers. Uber claims that the 'disruptive innovation' brought on by such application of data technologies allows for more flexibility in working hours for the drivers as well as more accessibility of private transportation for the passengers.[18]

Uber also asserts that its use of data technologies caters to connecting already-existing demand of taxis to already-existing supply of taxi rides in the market in a real-time dynamic way. What this means is that through the use of data technologies, Uber is able to immediately respond to the slightest changes in supply and demand in the private transportation market in a given locale. Although this assertion has been contested to point out that Uber does not just respond to given demand but actually also creates a new market supply for taxis,[19] what is clear either way is that Uber's use of data technologies does make it different from traditional taxi services in the broadest sense.

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[17] *See*, judgment in *O'Connor* v. *Uber Technologies Inc.* 82 F. Supp. 3D, 1133, 1137 n.10 (N.D. Cal. 2015), which notes, "*Uber bills itself as a 'technology company', not a 'transportation company', and describes the software it provides as a 'lead generation platform' that can be used to connect 'businesses that provide transportation' with passengers who desire rides…Uber notes that it owns no vehicles, and contends that it employs no drivers…Rather, Uber partners with alleged independent contractors*." *See* also, C-434/15, *Asociación Profesional Elite Taxi* v. *Uber Systems Spain, SL* [2017] ECLI:EU:C:2017:364, Opinion of AG Szpunar, ¶13; Srujana Katta, Adam Badger *et al,* '(Dis)embeddedness and (de)commodification: COVID-19, Uber, and the unravelling logics of the gig economy' (2020) 10(2) Dialogues in Human Geography 203, 204

[18] *See* for instance, C-434/15, *Asociación Profesional Elite Taxi* v. *Uber Systems Spain, SL* [2017] ECLI:EU:C:2017:981, ¶16

[19] Opinion of AG Szpunar, *supra* n. 17, ¶43

The specific data technologies which Uber deploys for its business are: (a) its digital platform, the Uber app, which acts as an informational interface between the driver, passenger, and Uber, and (b) predictive algorithms that rely on vast amounts of data to forecast changes in supply and demand of taxis in a given time and geography. In certain contexts, predictive algorithms like these based on machine learning, deep learning, and artificial neural network technologies are also being referred to as Artificial Intelligence or AI.[20] The exact mode of functioning of these predictive algorithms/AI is protected by intellectual property law, but what we do know is that based on such algorithms, Uber manages the drivers and passengers.[21]

For instance, Uber has initiated the use of "*dynamic pricing"* on its app. Deploying predictive algorithms, dynamic pricing adjusts ride prices depending on demand and supply. So, when the demand of taxis is higher than the availability of taxis in a given locality, Uber initiates 'surge pricing' which adjusts the prices for each taxi ride in real time so that a demand/supply equilibrium is allegedly achieved. According to Uber, dynamic or surge pricing aims to "*provide a better match between demand and supply with peer providers focusing on areas where they can earn the highest revenue per ride and peer consumers reducing demand during periods of surge pricing*."[22] The level of the surge pricing is set by a multiplier whose value depends on the scarcity of available drivers. The surge multiplier is based on the proportion of supply to

[20] *See* for instance, European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions on Artificial Intelligence for Europe', COM(2018)237, 26 June 2018

[21] Alex Rosenblat, *Uberland: How Algorithms are Rewriting the Rules of Work* (University of California Press 2018); van Doorn (2017), *supra* n. 7; Moira McGregor, Barry Brown, Mareike Glöss, and Airi Lampinen, 'On-demand taxi driving: Labour conditions, surveillance, and exclusion' (2016) 25201 The Internet Policy and Politics Conferences <http://blogs.oii.ox.ac.uk/ipp-conference/sites/ipp/files/documents/McGregor_Uber%2520paper%2520Sept%25201%2520PDF.pdf> accessed 23 September 2021

[22] Uber, 'How surge pricing works' (2018) <https://www.uber.com/de/en/drive/partner-app/how-surge-works/>, last accessed 28 September 2021

demand within the area; but Uber does not share information on how high it can go, or how it differs by city. In addition to these functionalities, Uber uses data technologies to produce quantified metrics and collate data of various kinds to measure drivers' performance; keeping the details of the processes of such driver evaluation untransparent.[23] All these tactics of labour management contribute to the virtualisation of work organisation and result in precarious conditions of work. These tactics have accordingly been protested by Uber drivers across the world at various points in time.[24]

6.2.2. Labour Precarity through Algorithmic Management

Against a larger history of precarisation of work through the virtualisation of work organisation, data technologies are, thus, marketed to enhance the flexibility of work through ridesharing configurations like Uber.[25] However, as driver protests show, such use of data technologies has been exploitative. Critical literature on the theme of digital labour practices points out that these

[23] Alex Rosenblat & Luke Stark, 'Algorithmic Labor and Information Asymmetries: A Case Study of Uber's Drivers' (2016) 10 International Journal of Communication 3758

[24] McGregor et al (2016), *Supra* n. 21. *See* also, Kari Paul, 'Uber and Lyft Drivers join day-long strike over working conditions,' The Guardian, 22 July 2021 <https://www.theguardian.com/technology/2021/jul/21/uber-lyft-drivers-strike-app-based-work-gig-economy> accessed 23 September 2021; Cathy Bussewitz, 'Uber, Lyft drivers protest in cities across the nation, in Europe too', Chicago Tribune, 8 May 2019 <https://www.chicagotribune.com/business/ct-biz-uber-lyft-driver-protest-national-20190508-story.html> accessed 23 May 2021; Loni Prinsloo, Tope Alake & Bella Genga, 'Uber, Bolt Drivers in Africa Protest High Cost of Operations' Bloomberg, 19 April 2021 <https://www.bloomberg.com/news/articles/2021-04-19/uber-bolt-drivers-in-africa-protests-higher-costs-of-operations> accessed 23 May 2021; Aditi Shah, 'Uber, Ola Drivers strike in India, demanding higher fares,' Reuters, 22 October 2018 <https://www.reuters.com/article/us-uber-ola-strike-idUSKCN1MW1WZ> accessed 23 May 2021

[25] Ifeoma Ajunwa, Kate Crawford & Jason Schultz, 'Limitless Worker Surveillance' (2017) 105 California Law Review 735; Janine Berg, 'Income Insecurity in the On-Demand Economy: Findings and Policy Lessons from a Survey of Crowdworkers' (2016) 37(3) Comparative Labor Law and Policy Journal; Miriam A. Cherry, 'Beyond Misclassification: The Digital Transformation of Work' (2016) 37(3) Comparative Labor Law and Policy Journal; Lilly Irani, 'Difference and Dependence Among Digital Workers: The Case of Amazon Mechanical Turk' (2015) 114(1) South Atlantic Quarterly 225; Veena Dubal, 'The Drive to Precarity: A Political History of Work, Regulation & Labor Advocacy in San Fransisco's Taxi & Uber Economies' (2017) 38(1) Berkeley Journal of Employment & Labor Law 73

technologies are problematically deployed as tools for labour management spanning from processes of hiring and recruitment[26] to the management of day-to-day work[27] as well as making decisions about termination.[28] By utilising late 19th century Taylorist logic of scientific management to create the flexible workforce of the capitalist dreams,[29] data technologies of the 21st play a key role in disciplining the workforce of the contemporary economy.[30] Data collected through internet-connected platforms, apps, and wearables are often used to assess workers' productivity and fitness to perform particular tasks on the basis of which they may be incrementally paid or dismissed.[31]

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[26] Ifeoma Ajunwa, 'An Auditing Imperative for Automated Hiring' (2021) 34 Harvard Journal of Law and Technology 1; Javier Sánchez-Monedero, Lina Dencik & Lilian Edwards, 'What does it mean to 'solve' the problem of discrimination in hiring? Social, technical, and legal perspectives from the UK on automated hiring systems' (2020) FAT* '20: Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency 458; Cathy O'Neill, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* (Crown Books 2016)

[27] Veena Dubal, 'An Uber Ambivalence' in Deepa Das Acevedo (ed.), *Beyond the Algorithm: Qualitative Insights for Gig Work Regulation* (CUP 2020); Valerio De Stefano, '"Negotiating the algorithm": Automation, artificial intelligence, and labour protection' (2018) Employment Working Paper No. 246, International Labour Organisation, 7-10 <https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_policy/documents/publication/wcms_634157.pdf> accessed 23 September 2021; Deepa Das Acevedo, 'Unbundling Freedom in the Sharing Economy' (2018) 91 Southern California Law Review 793

[28] *Supra* n. 27. *See* also, generally, Deepa Das Acevedo (ed.), *Beyond the Algorithm: Qualitative Insights for Gig Work Regulation* (CUP 2020)

[29] *Supra*, §3.4

[30] Ajunwa, Crawford & Schultz (2017), *supra* n. 25; Phoebe Moore, Martin Upchurch & Xanthe Whittaker (eds.), *Humans and Machines at Work: Monitoring, Surveillance, and Automation in Contemporary Capitalism* (Palgrave Macmillan 2018); De Stefano (2018), *supra* n. 27

[31] Phoebe Moore, Pav Akhtar, and Martin Upchurch, 'Digitalisation of Work and Resistance' in Phoebe Moore, Martin Upchurch & Xanthe Whittaker (eds.), *Humans and Machines at Work: Monitoring, Surveillance, and Automation in Contemporary Capitalism* (Palgrave Macmillan 2018); Ajunwa, Crawford & Schultz (2017), *supra* n. 25; Ivan Manokha, 'Why the rise of wearable tech to monitor employees is worrying,' The Independent, 4 January 2017 <https://www.independent.co.uk/life-style/gadgets-and-tech/why-the-rise-of-wearable-tech-to-monitor-employees-is-worrying-a7508656.html> accessed 23 September 2021; Sian Moore and Linda J.B. Hayes, 'Taking worker productivity to a new level? Electronic Monitoring in homecare—the (re)production of unpaid labour' (2017) 32(2) New Technology, Work and Employment 101

Scholars have critiqued such practices of surveillance and disciplining of labour under the terminology of 'algorithmic management.'[32] As the latest development within the larger movement towards the virtualisation of workforce, algorithmic management refers to the remote management of labour that relies upon practices of surveillance and data collection and processing in order to enable automated or semi-automated decision-making through data technologies like machine-learning, predictive algorithms and AI.[33] In particular, such remote management is accomplished through the use of software algorithms that assume managerial functions and surrounding institutional devices, which support these algorithms in practice so that companies can oversee myriads of workers in an optimised manner at a large scale.[34]

Algorithmic management has been shown to exacerbate the precariousness of labour in the contemporary data economy. For instance, with the increasing emphasis on 'crowdwork' in the digital gig economy, management practices using data technologies are shown to have resulted in the deskilling of labour.[35] Digital platforms used as tools for algorithmic management have been argued to create asymmetric power relationships between the employer and employee through the

[32] The term 'algorithmic management' was coined by Lee, Kusbit *et al* and has been in use in studies of digital work across disciplines since. *See,* Min Kyung Lee, Daniel Kusbit, Evan Metsky & Laura Dabbish, 'Working with Machines: The Impact of Algorithmic and Data-Driven Management on Human Workers' (2015) CHI '15 Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems <https://www.researchgate.net/publication/277875720_Working_with_Machines_The_Impact_of_Algorithmic_and_Data-Driven_Management_on_Human_Workers> accessed 23 September 2021

[33] Alexandra Mateescu & Aiha Nguyen, 'Algorithmic Management in the Workplace' (2019) Data & Society, 2 <https://datasociety.net/wp-content/uploads/2019/02/DS_Algorithmic_Management_Explainer.pdf> accessed 23 September 2021. 'Crowdwork' in this context popularly refers to the outsourcing of smaller components of a bigger project to digital and platform workers. For a detailed discussion of the organisation and politics of crowdwork, *see,* M. Six Silberman, Lilly Irani & Joel Ross, 'Ethics and tactics of professional crowdwork' (2010) 17(2) XRDS: Crossroads 39

[34] *Supra* n. 32

[35] Cherry (2016), *Supra* n. 25

use of data; while offloading the risks of the market upon workers.[36] The lack of transparency about how data is gathered and processed to make decisions about workers further amplifies power asymmetries.[37]

Algorithmic management techniques are additionally used to mask the control of employees engaged in atypical work, resulting in confusion about their classification as 'worker' or 'self-employed' under labour law in several jurisdictions.[38] As companies like Uber argue for the drivers' status to be a self-employed contractor, this effectively results in the stripping away of legal protections for these workers.[39] At the same time, ever more invasive techniques of data collection and processing that monitor not just the workers' movements and location minute-by-minute, but also affective behaviour like facial expressions and tone of the voice, are deployed in the workplace.[40] Such data are combined with other datasets gathered from outside the workplace[41] to create so-called big data which are then are used to design and develop machine-learning algorithms in a bid to make management scientific, agile, and efficient by disciplining labour at micro levels.

Given all this, it has been argued that the data technologies that are used to algorithmically-manage workers constitute a core part of the promises and perils of data economy today even as they actively shape the future of work.[42] And

[36] *See* generally on this point, Nick Srnicek, *Platform Capitalism* (John Wiley & Sons 2016)
[37] De Stefano (2018), *supra* n. 27, 8; van Doorn (2017), *supra* n. 7
[38] Miriam A. Cherry & Antonio Aloisi, "Dependent Contractors' in the Gig Economy: A Comparative Approach' (2017) 66 American University Law Review 635
[39] van Doorn (2017), *supra* n. 7
[40] Phoebe Moore, *The Quantified Self in Precarity: Work, Technology and What Counts* (Routledge 2018)
[41] Frank Hendricx, 'Privacy 4.0 at Work: Regulating Employment, Technology, and Automation' (2019) 41(1) Comparative Labor Law and Policy Journal; Valerio De Stefano, 'Introduction: Automation, Artificial Intelligence, and Labour Protection' (2019) 41(1) Comparative Labor Law and Policy Journal 1
[42] Jeremias Prassl, 'What If Your Boss Was An Algorithm?: The Rise of Artificial Intelligence at Work' (2019) 41(1) Comparative Labor Law & Policy Journal 123

relatedly, that firms like Uber should be primarily understood as *platform labour intermediaries,* since *"despite their self-presentation as tech companies,* [they] *operate as new players in a dynamic temporary staffing industry whose traditional business-oriented approach is being augmented by a more austere and zero-liability peer-to-peer model that leverages software to optimise labour's flexibility, scalability, tractability, and its fragmentation."*[43] In other words, data and data technologies are conceived as tools deployed to control, discipline, and exploit labour in new accentuated ways in the critical discourse of algorithmic management.

6.2.3. Technological Deployment v. Technological Production: Limitations of the Algorithmic Management Discourse

Such an assessment of data and data technologies as tools for algorithmic management is indeed crucial for addressing the growing precariousness of the workforce that we see in contemporary data economies. This literature is vital for developing a critique of exploitation by capitalist systems, including by firms like Uber. At the same time, however, this conception of data and data technologies tells only one part of the story. The focus on *data as an instrument* for algorithmic management can tend to obscure how central the *generation of data by itself* is to Uber's business.

Consider this: From 2016 to 2019, Uber filed losses spanning 10 billion USD even as passengers have paid 79.4 billion USD for rides and drivers have barely earned the minimum wage. In fact, as of writing this Uber has never actually turned a profit because the money that Uber collects from driver fares has not been enough to pay for its overall operating costs.[44] These huge and consistent

[43] van Doorn (2017), *supra* n. 7, 901, 902

[44] Alex Wilhelm, 'Understanding Why Uber Loses Money,' Crunchbase, 26 October 2018 <https://news.crunchbase.com/news/understanding-uber-loses-money/> accessed 23 September 2021; Will Bedingfield, 'How the hell did Uber just lose $5 billion in three months?,

losses, however, did not prevent Uber from filing from an initial public offering in 2019 to open itself to public investors; where it additionally stated, "*We have incurred significant losses since inception, including in the United States and other major markets. We expect our operating expenses to increase significantly in the foreseeable future, and we may not achieve profitability.*"[45] Despite this grim self-assessment, Uber managed to raise an eye-popping 82.4 billion USD when it went public.[46] Since then, Uber has filed 8.5 billion USD in losses in 2019.[47] Yet today, it's valued at billions.[48]

Where does Uber accumulate its value when it keeps turning in losses? This question could easily be dismissed with a comment on the brazenness of capital markets and the volatility of tech bubbles; but I propose a more thoughtful reflection on it. Paying attention to ridesharing drivers' protests can be wonderfully enlightening here.

For a few years now, drivers have been protesting against ridesharing services like Uber. Their lament: Millions to bosses, poverty pay to drivers.[49] Their demands:

Wired, 10 August 2019 <https://www.wired.co.uk/article/why-is-uber-losing-money-analysis> accessed 23 September 2021

[45] United States Securities & Exchange Commission, 'Form S-1, Registration Statement under The Securities Act of 1933 by Uber Technologies, Inc.' Registration No. 333, 12 <https://www.sec.gov/Archives/edgar/data/1543151/000119312519103850/d647752ds1.htm> accessed 20 September 2021

[46] Michael J. Merced and Kate Conger, 'Uber I..P.O. Values Ride-Hailing Giant at $82.4 Billion,' The New York Times, 9 May 2019 <https://www.nytimes.com/2019/05/09/technology/uber-ipo-stock-price.html> accessed 23 September 2021

[47] Andrew J. Hawkins, 'Uber lost $8.5 billion in 2019, but it thinks it can get profitable by the end of 2020,' The Verge, 6 February 2020 <https://www.theverge.com/2020/2/6/21126965/uber-q4-earnings-report-net-loss-revenue-profit-2019> accessed 23 September 2021

[48] Ari Levy, 'Uber will soon join an ugly but exclusive club: Unprofitable companies worth more than $50 billion' CNBC, 27 April 2019 <https://www.cnbc.com/2019/04/27/uber-one-of-only-3-unprofitable-companies-worth-more-than-50-billion.html> accessed 23 September 2021

[49] Julia Kolewe, Uber Drivers Strike Over Pay and Conditions, The Guardian, 8 May 2019 <https://www.theguardian.com/technology/2019/may/08/uber-drivers-strike-over-pay-and-conditions> accessed 24 September 2021

Better pay, better working conditions[50], addressing issues with surge pricing[51], and importantly, access to their data and explanation of how it fuels Uber's business.[52] The belief that driver data pays an essential role in operationalising Uber's algorithmically-managed business model of ridesharing, as we have seen, is not unfounded. But ridesharing data collected by Uber is also deemed to be valuable for other purposes, which are not fully scoped out at the time of collection.[53]

One instance is the value of Uber's ridesharing data to determine people's restaurant and shopping preferences. Some of such data is already being monetised through the new Uber food-delivery service, Uber Eats. Launched in 2016 in Europe, this service utilises ridesharing data to personalise food services.[54] Another instance is the value that ridesharing-generated data has for mapping the city, and eventually of use in city planning. In some cities like New

[50] *Ibid.*

[51] Jay Cassano, 'How Uber Profits Even While Its Drivers Aren't Earning Money' Vice, 2 February 2016 <https://www.vice.com/en/article/wnxd84/how-uber-profits-even-while-its-drivers-arent-earning-money> accessed 24 September 2021. *See* also on the implications of the Uber surge pricing model for competition law, Ariel Ezrachi & Maurice E. Stucke, *Virtual Competition: The Promise and Perils of the Algorithm-Driven Economy* (Harvard University Press 2016) 50-51, 210-214

[52] Sarah Holder, 'For Ride-Hailing Drivers, Data Is Power,' Bloomberg, 22 August 2019 <https://www.bloomberg.com/news/articles/2019-08-22/why-uber-drivers-are-fighting-for-their-data> accessed 24 September 2021; Robert Booth, 'Uber drivers to launch legal bid to uncover app's algorithm,' The Guardian, 20 July 2020 <https://www.theguardian.com/technology/2020/jul/20/uber-drivers-to-launch-legal-bid-to-uncover-apps-algorithm> accessed 24 September 2021. *See* also, in the related context of delivery drivers, Wenlong Li & Karen Gregory, 'Restoring Gig Workers to Power: Exploring the Role of Data Portability' (2019) Proceedings of the Privacy Law Scholars Conference—Europe <https://www.ivir.nl/plsceurope2019/> accessed 24 September 2021

[53] In contrast to the 'economies of scale', this approach whereby a diversified product catalogue offering a wide scope of investment is developed in order to generate profits for a firm has been understood as 'economies of scope.' *See,* John C. Panzar & Robert D. Willig, 'Economies of Scope' (1981) 71(2) The American Papers and Proceedings of the 93rd Annual Meeting of the American Economic Association 268

[54] Elizabeth Leigh, 'You won't believe what Uber Eats is doing with your data,' Autopilot, 10 December 2018 <https://www.autopilothq.com/blog/data-driven-marketing-examples/> accessed 24 September 2021

York, Uber is already negotiating the sharing of such data with city governments; creating value from ridesharing data in contexts other than ridesharing.[55] In addition, Uber has been investing in the development of autonomous automobiles or self-driving cars through the use of ridesharing-generated data about city landscapes.[56] Given this, no wonder Uber drivers protesting against its business have a great interest in having access to their data and demanding details about how exactly it is used by Uber; not just in algorithmic management of ridesharing, but also in other contexts. Drivers know the value of data to Uber's business model. As Spencer, a former Uber driver states, "*Uber lives or dies by data. Their overall mission and their sustainability is completely dependent on how good their data is. The more data they can collect, the more information they can derive from patterns and behaviors. Their ability to increase profits is all dependent on that.*"[57](sic)

The general upward trend of market valuation of Uber also corroborates this centrality of datasets in Uber's business, not just for developing better data technologies for ridesharing management in the present; but also for other potential uses in the future. Investors invest in Uber even as it turns in losses and forecasts losses for the near-future because they prioritise Uber's growth over its profits.[58] Because the more Uber grows and dominates markets, the more data it can collect and produce for hitherto unknown uses in the future. The endgame of the continued investments in Uber is, then, not as focused on making profits from its ridesharing business as on expanding Uber's datasets; so that it can dominate the market both in the business of private transportation and other

[55] Alex Davies, 'Uber's Mildy Helpful Data Tool Could Help Cities Fix Streets,' 1 August 2017 <https://www.wired.com/2017/01/uber-movement-traffic-data-tool/> accessed 24 September 2021

[56] *Supra* n. 23

[57] Cassano (2016), *supra* n. 51

[58] Youngme Moon, 'Uber: Changing the Way the World Moves,' HBS Case Collection 9-316-101 <https://www.hbs.edu/faculty/Pages/item.aspx?num=50102> accessed 24 September 2021, 7

fields relevant to these datasets. This business model premised on data accumulation also extends to other firms in the digital gig economy. Academic scholarship, for instance, has pointed out that the digital platform-based food delivery service Deliveroo's success cannot be explained by the narrative of automated or algorithmically-managed human labour; its market worth rather relies on the presumed value of data accumulated by Deliveroo and its future applications.[59] The digitally-facilitated home rental firm Airbnb is another example of a digital business driven by data accumulation whereby it is reported to have amassed the world's largest database of domestic interior photographs.[60] This data has the potential to generate value even outside of Airbnb's home rental business for advertisers, architects, and city planners.[61]

The contemporary data economy (here particularly, the digital gig economy), which functions as an economy of casualised labour is, then, driven by an intrinsic motivation of data accumulation.[62] The digital capitalist is not so much concerned with the immediate use of a data point or any single datum but rather "*the unceasing flow of data-creating.*"[63] In this regard, data technologies researcher Andrew Ng, who has held top positions at Google, Baidu, and Coursera has commented upon the prevailing logic of data accumulation: "*At large companies, sometimes we launch products not for the revenue, but for the data. We actually do that quite often….and we monetise the data through a different product."*[64] As evident from this quote, what is important

[59] Li & Gregory (2019), *supra* n. 52, 4-5. *See* also, Rebecca Wearn, 'Does your dinner come from a 'dark kitchen'?,' BBC, 23 April 2019 <https://www.bbc.com/news/business-47978759> accessed 24 September 2021

[60] ÅYR, 'Catfish Homes: Airbnb and the Domestic Interior Photograph,' Rhizome, 12 November 2014 <https://rhizome.org/editorial/2014/nov/12/airbnb-and-domestic-interior-photography/> accessed 24 September 2021; Li & Gregory (2019), *supra* n. 52, 5

[61] Li & Gregory (2019), *supra* n. 52, 4-5

[62] Jathan Sadowski, 'When data is capital: Datafication, accumulation, and extraction' (2019) 6(1) Big Data & Society 1, 4-5

[63] *Ibid.*

[64] Supra n. 62, 5

within the logic of the data economy today is the constant production of data without any specific uses in mind. Defining uses in the present is not as important as the cycle of data creation and accumulation because the assumption is that such data will eventually constitute a valuable resource.[65] Drivers of ridesharing services like Uber are well-aware of this logic of constant data creation and accumulation of the data economy when they comment, *"If Uber is going to be true to its model and say 'we are a technology company,' then their business model needs to reflect that. And if they're going to be collecting information on how drivers are getting around while they don't have a paying customer, then any data the company receives from an independent contractor should be compensated."*[66]

Data for data's sake is then the central logic of Uber's business model. The use of data for creating and deploying data technologies for algorithmic management in the field of private transportation serves as a corollary of this central logic. This insight is significant because rather than limiting the critical examination of Uber to only its algorithmic management role (i.e. management of labour using data technologies), it redirects our focus towards a more fundamental aspect of Uber's operations viz., the agencies involved and the labour extracted in the *production of data* for Uber. In making this shift, we are also freed from the confines of intra-disciplinary boundaries that pressure the legal discourse to compartmentalise the figure of the Uber driver within the ambit of labour law and policy. Instead, this shift enables us to locate the issues raised by the ridesharing and Uber drivers' strikes as relevant for data governance law. For these reasons my argument is that Uber, along with other business models that deploy algorithmic management tools, needs to be conceptualised as an *algorithmically-managed data generation machine.*

65 Marion Fourcade and Kieran Healey, 'Seeing like a market' (2017) 15(1) Socio-Economic Review 9, 13; *Supra* n. 62

66 See quote by Spencer, former Uber driver in Cassano (2016), *supra* n. 51

For Uber functions not only as a new technologically-mediated form of the virtualisation of work organisation in the field of private transportation. Rather crucially, it also acts as a mechanism which enables the production of data in ways that serve to obscure the underlying human and unhuman agencies. Such obscuring processes lay the foundation for invisibilised forms of labour extraction by business models like Uber.

Moreover, I propose that this conception of Uber as an algorithmically-managed data generation machine is essential to critically addressing the power relations that the legal tenets of data governance enable and perpetuate in the digital Earth. This is because the conceptual framework of Uber as a data generation machine allows us to pay attention not just to the *problematics of deployment* of data for control and exploitation in ridesharing management, but also to the *politics implicit in the production of data*. As will be mapped in the later sections, such politics enable the naturalisation of data as a resource in non-law and as a commodity in law through representationalist assumptions.

By conceiving data and data technologies primarily as tools for labour management, the critical algorithmic management discourse constructs labour practices in contemporary data economies primarily as a site of problematic *deployment* of data technologies. Sites of digital gig economy labour, then, do not appear as sites of technological *production*. Relatedly, the conception of Uber as a platform labour intermediary instead of as a technology firm encourages the construction of ridesharing work as a site where data technologies are *deployed and not produced*. Uber drivers are consequently seen as passive recipients or consumers of data technologies instead of being understood as active contributors to the production of said technologies. In contrast to this approach, understanding Uber as an algorithmically-managed data generation machine frames Uber as a

mechanism for data production even as it accounts for the deployment of algorithms for management of ridesharing labour. Uber's simultaneous production and deployment of data and data technologies is made possible through the technique of agile computing.[67] As Gürses and van Hoboken argue, the development of agile computing has led to the blurring of boundaries between producers and consumers of data technologies.[68] I argue that such blurring of boundaries is as true in the context of data itself and nor entirely a novelty of the 21st century. As will be seen, this is reflected in the figure of the Uber driver who located well within the algorithmically-managed data generation machine is both consumed (and thus, controlled) by data as well as contributes to its production.

Accordingly in the following sections, I propose that as an algorithmically-managed data generation machine, Uber functions as a site for both the simultaneous production and deployment of data (and by extension, of data technologies). In other words, the processes of production and deployment of data (and data technologies) are collapsed into each other in the ridesharing practices of Uber.

Three features or perhaps implications of undertaking a countermapping that frames Uber as an algorithmically-managed data generation machine stand out: First, in this countermapping, Uber drivers appear not as passive recipients or consumers of data technologies or even mere victims of algorithmic management to be surveilled and observed passively. Instead, they are active; if unacknowledged, producers of the data which drives these technologies. By mapping the Uber driver as the observed who exercises agency in the production

[67] *Supra*, §5.2.2.2

[68] Seda Gürses and Joris van Hoboken, J., 'Privacy after the Agile Turn' in Evan Selinger, Jules Polonetsky, and Omar Tene (eds.), *The Cambridge Handbook of Consumer Privacy* (CUP 2018)

of data, one can produce an account of the crucial and active role which the observed plays in the production of data— thus disrupting representationalist assumptions both within the law and the non-law enacted by the modern legal form. Second and simultaneously, such accounting of the agency of the Uber driver in the position of the observed allows us to map the exploitation which occurs in digital Earth at the level of data *production*; and not just at the level of access or distribution of data. And lastly but importantly, through the disruption of the representationalist narrative of data, an empowered and agential account of the observed in general, and of the Uber driver in particular is produced. Such an account creates openings for imagining and enacting previously unnoticed alliances and solidarities and engineering new tactics of resistance against exploitation in the digital Earth. For once the agency of the observed in the production of data is recognised, this agency can be powerfully directed by the drivers and their allies towards dismantling the exploitative production of data.

The framing of Uber as a data generation machine alongside understanding it as an algorithmic management mechanism is crucial to developing these insights. As data generation machine, Uber acts both as a site of algorithmic management and data production simultaneously such that these two processes feed into one another. In the next two sections I detail how each of these processes function separately and in tandem with each other. In doing so, I illuminate the representationalist assumptions about data that are co-produced by non-law and law and which ultimately enable the exclusion of the agency of the driver (and consequently, of their labour) from the account of data production.

6.3. Algorithmic Management through Data Production

As demonstrated, Uber functions as a site of algorithmic management. But what enables such algorithmic management? It is the production of data. Accordingly,

the present section maps how as a data generation machine, Uber's algorithmic management is enabled by the production of data by Uber drivers. In doing so, it illustrates how exploitation of the driver is enabled by such algorithmic management through the exacerbation of labour precariousness and the affective management through performance of emotional labour at work.

Uber claims to be a platform that connects drivers and passengers in a given area and time through its smartphone-based app. The app recognises the location of the passenger and finds available drivers who are nearby. When a driver accepts a trip, the app notifies the passenger and displays the driver's profile together with an estimated fare to the destination indicated by the passenger.[69] Once the trip is completed, the fare is automatically charged to the bank card which the passenger is required to enter when signing up for Uber. Uber collects a percentage of the fare as payment of use of its services,[70] which elsewhere Uber has noted to be compensation for licensing its software.[71] This percentage of the fare earlier used to be 5% and now may rise to up to 25%.[72] In effect, this means that Uber can slash or increase the prices of rides without warning, while also taking a sizeable bite of the ride fare as commission which can be up to 20-30% depending on the service. [73] However, Uber does not pay for drivers' gasoline, insurance, maintenance costs and potential vehicle leasing costs.[74] The use of ratings system, surge pricing, and algorithmic price fixing, all illustrate the novel formats in which

[69] *Supra* n. 17
[70] *Ibid.*
[71] *O'Connor* v. *Uber Technologies Inc., Supra* n. 17, 16
[72] Yaseen Aslam & Jamie Woodcock, 'A History of Uber Organizing in the UK,' (2020) 119(2) South Atlantic Quarterly 412
[73] Antonio Aloisi, 'Commoditized Workers: Case Study Research on Labour Law Issues arising from a set of "On-Demand/Gig Economy" Platforms' (2016) 37(3) Comparative Labor Law & Policy Journal 673
[74] *Ibid.*

the relationship between the passenger, driver, and Uber is organised under the data economy.

Across this entire process, Uber represents itself as a technological or information service intermediary in a tripartite contractual relationship. This tripartite contracting on the one hand, lays down the terms for the relationship between Uber and the ridesharing passenger covered under Uber's General Terms and Conditions Agreement.[75] On the other, it also defines the terms for the relationship between Uber and the ridesharing drivers covered under the Driver Services Agreement.[76] Although its parent company Uber Technologies Inc. has its principal seat of business in San Fransisco, USA, Uber operates through a number of subsidiaries across the world. The exact terms of service under the aforementioned tripartite contractual relationship accordingly vary for different jurisdictions depending on the local laws and the kinds of services Uber offers in each.[77]

Despite such variation, the tripartite contractual agreements across jurisdictions lay down that Uber is not a provider of transport services, but serves merely as a digital platform to connect drivers to passengers. Notably, these agreements identify both the drivers and passengers as Uber 'customers.'[78] So for instance, the General Terms and Conditions Agreement of Uber BV, the EU subsidiary of Uber Technologies Inc., which has its principal seat of business in the Netherlands requires passengers to accept that Uber does not provide

[75] Uber, 'Terms and Conditions Agreement,' 16 March 2017 <https://www.uber.com/legal/en/> accessed 24 September 2017

[76] Uber, 'Driver Services Agreement,' 20 October 2015 <https://www.parliament.uk/globalassets/documents/commons-committees/work-and-pensions/Written_Evidence/Uber-BV-Driver-Services-Agreement-20-10-2015.pdf> accessed 24 September 2021

[77] Opinion of AG Szpunar, *supra* n. 17, ¶14

[78] *Supra* n. 75

transportation or logistics services and that all such services on Uber's platform are provided by independent third party contractors who are not employed by Uber or its affiliates.[79] Similarly, a clause under the Uber BV's Driver Services Agreement lays down that the relationship between Uber and the drivers is solely that of an independent contractor,[80] and that the drivers must not hold themselves out as an employee, agent or authorised representative of Uber.[81] Additionally, the Driver Services Agreement lays down that the provision of transportation services to passengers "*creates a legal and direct business relationship*" between the driver and the passenger to which neither Uber nor any of its affiliates is a party.[82]

This narrative of drivers as independent or third-party service contractors in direct contractual relationship with passengers is important to Uber's business model. This is because it enables consolidation of Uber's image as a digital technology company rather than a transportation service provider; simultaneously relieving Uber of legal accountability towards the drivers as their employer. Although this narrative has and is being contested in employment tribunals and other courts of law in many jurisdictions,[83] it is also what has enabled the creation of an app-based ridesharing market in the first place by promising independence and flexible working hours to drivers. Uber advertises itself as a platform which guarantees freedom and control to drivers. "*With Uber you have total control. Work where you want, when you want, and set your own schedule."* and "*Freedom pays weekly,*" being some of its most prominent slogans.[84] The promise

[79] *Supra* n. 75, §2
[80] *Supra* n. 76, §13.1
[81] *Supra* n. 76, §13.2
[82] *Supra* n. 76, §2.3
[83] Reuters Staff, 'Factbox: Uber's legal challenges around the world,' Reuters, 25 November 2019 <https://www.reuters.com/article/us-uber-britain-factbox-idUSKBN1XZ25F> accessed 24 September 2021
[84] Rosenblat & Stark (2016), *supra* n. 23, 3761

of "*flexible employment*" is one of the most appealing features of Uber to drivers.[85] A 2015 survey commissioned by Uber notes that 85% of the respondents agreed that flexibility was a major motivator for driving for Uber.[86] As former Uber driver and prominent London-based labour organiser Yaseen Aslam recounts, "*I wanted to find out what it would be like to work as a driver through an app. It was my first job working without a human managing me. Like many drivers, I too was lured in by the promise of making money and the working flexibility I needed— or the supposed freedom to be my own boss.*"[87] The promise of freedom, flexibility, and entrepreneurship through the grant of control of their work to drivers thus marks the rhetoric of Uber.[88]

In practice, however, this rhetoric of freedom and control of their own work to drivers is experienced by drivers as just that— empty rhetoric. Instead of creating better working conditions, the promise of flexible employment has led to the demutualisation of risk of ridesharing operations upon Uber drivers and the accentuation of precarious working conditions for them. This is because while Uber claims to treat drivers as independent contractors or entrepreneurs in their own right with control of their own work, it actually manages several aspects of their work routines through what has come to be understood as algorithmic management. The ridesharing labour of Uber drivers is shaped by Uber's deployment of a variety of software design decisions and information

[85] *Ibid*.; Chris O'Brien, 'Princeton economist explains why we should all stop worrying and learn to love Uber,' VentureBeat, 22 January 2015 <https://venturebeat.com/2015/01/22/inside-ubers-staggering-u-s-growth-40000-drivers-joined-in-december-and-average-19-per-hour/> accessed 24 September 2021

[86] Jonathan Hall & Alan Krueger, 'An Analysis of the Labor Market for Uber's Driver-Partners in the United States,' 22 January 2015 <https://s3.amazonaws.com/uber-static/comms/PDF/Uber_Driver-Partners_Hall_Kreuger_2015.pdf> accessed 24 September 2021, 11; *Supra* n. 84; *See* also, Noopur Raval, *Platform-Living: Theorizing life, work, and ethical living after the gig economy* (2020) PhD Thesis, University of California Irvine, 69-83 <https://escholarship.org/uc/item/4qc0x3mw> accessed 24 September 2021

[87] *Supra* n. 72

[88] *Supra* n. 84

asymmetries effected via its app to exercise a "soft control" over drivers.[89] As part of the larger Taylorist move towards scientific management of workers[90], the production and flows of data play a core role in making these software design decisions and developing and deploying data technologies. These technologies in turn enable algorithmic management via the Uber app. Without the generation and controlled flow of data, such data technologies would not exist. And without these data technologies, the contentious business model of Uber and similar firms would not exist. The generation and controlled flow of data thus lies at the heart of the contemporary data economy characterised by algorithmic management. Yet a discussion of the conditions of data generation and flow and their role in enabling exploitative algorithmic management does not prominently figure in the legal discourse of data governance.

Ethnographic methods have revealed how data production that results in algorithmic management is used to control the day-to-day work of Uber drivers. Rosenblat and Stark highlight three strategies based on data generation and control of data flows, which Uber uses to manage driver behaviour: Blind passenger acceptance and minimum fares, dynamic pricing, and passenger ratings.[91]

The Uber app interface is designed for blind passenger acceptance. This means that when Uber drivers are connected to the passenger requesting a ride through the app, they are not shown the details of the passenger or the destination to which the passenger wants to travel, and are expected to accept the request blindly.[92] In other words, the data about the passenger's current location as well

89 Luc Boltanski & Eve Chiapello (trans. Gregory Elliott), *The New Spirit of Capitalism* (Verso 2017); Gilles Deleuze, 'Postscript on the Societies of Control' (1992) 59 October 3
90 *Supra*, §3.4
91 Rosenblat & Stark (2016), *supra* n. 23, 3762
92 *Ibid.*

as destination remains unknown to the driver until they accept the fare. While hiding the destination before a driver chooses to accept or decline a ride request can potentially prevent destination-based discrimination,[93] it has also been responsible for fostering reduced wages for the drivers. When drivers are not shown data about passengers' locations of pick-up and drop-offs, they risk taking on unprofitable fares.[94] For instance, drivers have narrated how they have driven more to get to the passengers' pick-up location than they would to drive to drop them off, which leads to the driver spending more money and time in the ride than they make off it.[95] This is complicated by the fact that drivers risk 'deactivation' i.e., suspension or permanent removal from the Uber app system for cancelling unprofitable fares.[96] Uber's app is, thus, used to generate data about the locations of drivers and passengers in order to algorithmically 'match' them to each other. However, Uber's control over the flow of this data from the passengers to the drivers prior to ride acceptance is used to create pressure on the drivers to accept the ride, thus controlling their behaviour. These data-based operations of location data generation and controlling their flows from the passenger to the driver are core to Uber's business model.

Blind passenger acceptance is made even riskier for the drivers through the imposition of minimum fares by Uber.[97] These are rates which Uber sets as minimum wages the passenger is required to pay the driver for one ride. These minimum fares vary according to different cities and geographies. However, Uber

93 Rosanna Smart, Brad Rowe, Angela Hawken *et al,* 'Faster and Cheaper: How Ride-Sourcing Fills a Gap in Low-Income Los Angeles Neighborhoods,' BOTEC Analysis Corp, 2015 <https://nyuscholars.nyu.edu/en/publications/faster-and-cheaper-how-ride-sourcing-fills-a-gap-in-low-income-lo> accessed 23 September 2021
94 Rosenblat & Stark (2016), *supra* n. 23, 3763
95 *Supra* n. 91
96 *Ibid.*
97 *Ibid.*

also charges commissions on minimum fares which also vary constantly.[98] But even at its lowest commission, the minimum fare leaves the driver with an amount that is far from enough to account for any of the expenses of the driver.[99] At the same time, Uber has full power to control and change the base rates charged by its drivers. While Uber's contract with its drivers permits drivers to negotiate a lower fare with the passenger, it does not allow them to negotiate a higher one.[100] The control of the flow of data from passengers to drivers combined with conditions like minimum fares set by Uber, prevention of drivers to negotiate higher price from the passengers, and deactivation upon non-acceptance of rides, enables Uber to use techniques of choice architecture and nudging[101] to control and algorithmically-manage the behaviour of drivers.

Additionally, Uber drivers have only about 15 seconds to accept or reject the ride request on the Uber app interface, after which the request expires and the driver loses the possibility to access the passenger requesting the ride.[102] This means the driver has only a very short window of time to decide whether they will accept or reject the ride, while keeping in mind that the ride could be unprofitable. And yet that if they do not accept the ride, they could risk being barred from using the Uber app. All this creates unwanted stress of the driver and the expectation of unpaid emotional labour while the driver makes these decisions while negotiating the ridesharing operation through the Uber app.[103]

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[98] *Ibid.*
[99] *Ibid.*
[100] *Supra* n. 91. *See* also, *supra* n. 76
[101] Rosenblat & Stark (2016), *supra* n. 23, 3768. On the politics of choice architecture and nudging, *see* Karen Yeung, "Hypernudge': Big Data as a mode of regulation by design' (2017) 20(1) Information, Communication & Society 118
[102] Rosenblat & Stark (2016), *supra* n. 23
[103] Noopur Raval & Paul Dourish, 'Standing Out from the Crowd: Emotional Labor, Body Labor and Temporal Labor in Ridesharing' (2016) CSCW '16: Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing 97

Dynamic pricing, popularly known as 'surge pricing' is the second data-based strategy deployed by Uber to algorithmically-manage driver behaviour. Surge pricing adjusts ride prices depending on demand and supply[104]: Uber contends that its surge pricing feature prompts more drivers to get on the road when the demand for taxis is high in a particular geography by promising higher compensation for driving in these times and locations and is thus beneficial for the drivers.[105] However, evidence suggests that surge pricing primarily redistributes the existing supply of drivers rather than adding to it.[106] Surge pricing is displayed to drivers via a type of heat map visualisation showing where the demand of taxis is high and therefore temporarily higher fare prices may be obtained.[107] These surge pricing visualisations and price setting are done via data technologies that adjust the prices for each taxi ride in real time by collating historical data of location of passengers, rides hailed by different passengers with Uber accounts rather than by relying on data concerning the geolocation of Uber drivers.[108]

Based on data assessments concerning taxi demand in various locations, surge pricing is used to nudge drivers to geographies where passenger demand for taxis is high; controlling driver behaviour. Such nudging, however, creates a lot of uncertainty for the drivers. For instance, drivers may travel to surge pricing zones where the fare is advertised as 3.5x, but only receive ride requests at a lower surge

[104] *Supra* n. 23

[105] Uber Technologies Inc. (Inventors: Hungyu Henry Lin, Travis Cordell Kalanick & Emily Wang), 'System and Method for Providing Dynamic Supply Positioning for On-Demand Services,' WIPO, WO/2014/008099, 9 January 2014 <https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2014008099> accessed 24 September 2021 (Uber Patent for Surge Pricing)

[106] Nicholas Diakapoulos, 'How Uber surge pricing really works,' The Washington Post, 17 April 2015 <https://www.washingtonpost.com/news/wonk/wp/2015/04/17/how-uber-surge-pricing-really-works/> accessed 24 September 2021

[107] Rosenblat & Stark (2016), *supra* n. 23, 3765

[108] Rosenblat & Stark (2016), *supra* n. 23, 3766

rate of 1.5x, which would not profitably cover the costs of their driving to these surge pricing zones.[109] Drivers have also reported that passengers often game the surge pricing system by placing their pick-up location outside a surge zone, only to call drivers to redirect them to their actual pick-up location within the surge zone.[110] Lastly, drivers may converge in large numbers to a surge pricing area only to find that by the time they reach there, the supply is no longer too low for the demand of rides, and the surge would disappear and they would no longer be able to find passengers in these areas.[111]

These uncertainties make the work of drivers even more precarious by shifting the risk of unprofitability onto their shoulders even as they are directed by Uber's algorithms to change their locations. Uber uses algorithms to co-ordinate and manage clusters of labour in response to dynamic demand without explaining the reliability of its incentives for such clustering or guaranteeing the accuracy, validity, or error rates of its nudging to direct driver labour to surge zones.[112] Such algorithmic nudging at key moments like when drivers are about to log off the app, also enables Uber to make its drivers stay on the app and work longer and harder for same or similar fares.[113] Moreover, not only is the location of the driver sought to be controlled through algorithmic incentives like the surge, but also the times and hours of the drivers' work. A number of aspects of such algorithmic management remain opaque and protected by intellectual property law in the favour of Uber. But what remains clear is that the prices for Uber ridesharing are set by data technologies that are dependent upon the use of various datasets

[109] *Ibid.*
[110] *Ibid.*
[111] *Ibid.*
[112] A. Aneesh, 'Global Labor: Algocratic Modes of Organization' (2009) 27(4) Sociological Theory 347
[113] Tarleton Gillespie, 'The Relevance of Algorithms' in Tarleton Gillespie, Pablo J. Boczkowski & Kirsten A. Foot (eds.), *Media Technologies: Essays on Communication, Materiality, and Society* (MIT Press 2014)

extracted by Uber. Together, these are processed by data technologies which Uber has developed to forecast the demand and supply of taxis in a given locality in a given time. These data technologies then also set the market price for taxi rides and nudging driver behaviour in certain directions. The use of traffic, taxi demand, and supply data and algorithms based on such data to control and manage driver behaviour thus becomes core to Uber's day-to-day operations. Data generation and control, thus, plays a central role in facilitating the algorithmic management of labour.

Passenger ratings serve as the third major strategy of data generation and control that Uber deploys to manage driver behaviour. Although the Uber app interface enables both drivers and passengers to rate each other, it is the passenger ratings assigned to the drivers which are way more influential as they directly impact the drivers' employment eligibility including decisions about whether drivers' Uber account will be deactivated or not.[114] In this configuration, passengers surveil drivers and act as middle managers of their behaviour.[115] Such management is secured by the generation of data about driver performance through a rating system whereby each passenger evaluates the driver's performance after every ride out of 5 stars. If their average rating falls below a certain threshold (4.6 out of 5, though it may vary depending on the city), the driver could simply get 'deactivated' or lose access to the Uber app without an opportunity to respond or explain the situation.[116] Additionally, because passengers do not have the opportunity to rate their Uber in-app experience separately from their ridesharing

[114] Rosenblat & Stark (2016), *supra* n. 23, 3772

[115] Luke Stark & Karen Levy, 'The surveillant consumer' (2018) 40(8) Media, Culture & Society 1202; Linda Fuller & Vicky Smith, 'Consumers' Reports: Management by Customers in a Changing Economy' (1991) 5(1) Work, Employment & Society 1

[116]Benjamin Sachs, 'Uber and Lyft: Customer Reviews and the Right-to-Control,' On Labor, 20 May 2015 <https://onlabor.org/uber-and-lyft-customer-reviews-and-the-right-to-control/> accessed 23 September 2021

experience with the drivers, the accountability for the entire Uber booking and driving processes of Uber is offloaded upon the individual drivers.[117]

It has been noted that such redistribution of managerial oversight away from a formalised middle management and towards consumers is part of a broader trend of the demutualisation of risk and precarisation of work in contemporary economies.[118] Such demutualisation of risk also functions through the lack of transparency of the ratings system. Although the Uber app interface provides a section for the written feedback of the passenger, it is neither mandatory to fill in nor accounted for in calculating the ratings for each ride. As a result, drivers can never know for sure why they were downrated for a particular ride or if the passenger was even rating the driver performance or their own in-app experience. Low passenger literacy about these ratings systems and how they work, and what they imply for drivers further accentuates drivers' precarious experience through ratings data.[119]

Data generated about driver performance exerts significant influence upon drivers to produce a standardised Uber experience of high quality for the passengers by modifying their own behaviour.[120] Many drivers provide bottled water for passengers or offer chargers for their smartphones.[121] Additionally, because the ratings system is quite opaque, drivers are forced to anticipate the needs and moods of passengers and provide for them.[122] In their seminal study,

[117] *Supra* n. 114
[118] Manuel Castells, *The Rise of the Network Society* (John Wiley & Sons 2011); *Supra* n. 114
[119] *Supra* n. 103, 100-101
[120] Monique Girard & David Stark, 'Distributing Intelligence and Organizing Diversity in New Media Projects' (2002) 34(11) Environment and Planning A: Economy and Space 1927; Jessica Bruder, 'These Workers Have a New Demand: Stop Watching Us,' The Nation, 27 May 2015 <https://www.thenation.com/article/archive/these-workers-have-new-demand-stop-watching-us/> accessed 24 September 2021
[121] Rosenblat & Stark (2016), *supra* n. 23, 3775
[122] *Ibid.*

Raval and Dourish have drawn upon insights from Marxist-feminist approaches to the political economy to illustrate how Uber drivers are pressured to perform immaterial labour along with body work and affective labour in order to keep up their ratings and by extension, their jobs as Uber drivers.[123] Such labour includes the management of emotions— their own and that of passengers in order to ensure that they are rated well.[124]

Raval and Dourish note that although the notion that emotions must be managed as part of the service experience is not unique to the digital economy, the mode of its implementation differs.[125] In the case of Uber, such labour becomes algorithmically-managed through passenger ratings.[126] They also observe that even while their body and emotions become major assets upon which drivers rely, they are not often in control of external factors which might affect passenger ratings. For instance, drivers are not in control of the traffic or the incoming passenger's mood at the moment of encounter. Given this, the expectation imposed through the algorithmic management technique of passenger ratings is clearly that drivers use their physical and emotional assets to provide the best ridesharing experience in contexts they cannot entirely manage.[127] This exacerbates already-stressful working conditions. As a result, drivers are forced to do a lot of additional work like keeping mints, perfumes, wipes, and lipstick for passengers,[128] playing the kind of music the passenger likes[129] as well as

[123] *Supra* n. 103

[124] For the concept of 'emotional labour,' *see*, Sarah Sharma, *In the Meantime: Temporality and Cultural Politics* (Duke University Press 2014). *See* also, Arlie Russell Hochschild, *The Managed Heart: Commercialization of Human Feeling* (University of California Press 2012). Emotional labour here may be understood as labour undertaken by service workers to suppress or contain their upcoming emotions so as to present a placating and welcoming demeanour to the customer regardless of that customer's behaviour or reciprocal emotional state.

[125] *Supra* n. 103, 101

[126] *Ibid.*

[127] *Supra* n. 103, 102

[128] *Ibid.*

[129] *Supra* n. 125

anticipating whether the passenger is in a mood to talk or not during the ride and initiating and managing a conversation with them.[130] Apart from driving from one location to another, communication, thus, becomes indispensable labour that ridesharing drivers must perform[131] in order to keep their high ratings; and consequently, their employment. In many cases, this involves performance of emotional and affective labour by the driver in order to smoothly shy away from topics of potential disagreement, stick to routes agreed by the passenger even when the driver knows shorter or more efficient ways[132] as well as tolerate rude behaviour[133] and endure offensive and racist remarks[134]— all while maintaining a pleasant and welcoming demeanour. All of this labour is performed in order to ensure that the ratings data generated by passengers is in favour of the driver. In this manner, data is also used to algorithmically-manage drivers' behaviour through the use of passenger ratings.

6.4. Data Production through Algorithmic Management

Even as data and data technologies are used to manage the physical and emotional behaviour of drivers, such driver behaviour generated via algorithmic management is simultaneously used to produce data. These parallel processes of driver behaviour management and data production are central to the operation of Uber as an algorithmically-managed data production machine. However, the *production of data* in Uber operations *through control of driver behaviour* has not yet been emphasised enough either in algorithmic management literature or otherwise in the discourse of data governance. While the role of data technologies in the manipulation of driver behaviour as well as in the resulting

[130] *Supra* n. 121
[131] *Supra* n. 125
[132] *Supra* n. 107
[133] *Supra* n. 125
[134] *Ibid.*

violations of data protection and privacy principles is increasingly discussed, the relationship between the lives of drivers and the production of data remains largely marginalised in the discourse of data governance. A lot of such marginalisation can be attributed to the underlying representationalism that naturalises the concept of data as a resource and commodity in both non-legal and legal discourse.[135] In the present section, however, I seek to disrupt this representationalist narrative of data by outlining and centring the processes through which Uber's control of driver behaviour is used to *produce* data, which concomitantly generates value in our globalised capitalist data economy. In this manner, the countermap presented in this section illustrates that data does not exist naturally as a resource or commodity; rather, is produced as such through representationalist assumptions and the erasure of driver agency.

The operations of Uber result in the production of several kinds of data from various sites where both human and unhuman agencies are entangled. However, for my limited analysis, I focus on data production which is enabled by the algorithmic management of Uber drivers; centring the figure of the driver in my analysis. This choice of centring the Uber driver in this Chapter's analysis is politically strategic with respect to my agenda of countermapping the agency of the human observed in the production of data. Naturally, such a countermapping assumes a non-representationalist position. It, however, does not imply that the driver is the only actor of concern in the production of data who is invisibilised. There are several actors —human and unhuman— that are involved, enacted, and formed through the production of data. These could include for instance, passengers, vehicles, smartphones; and as will be seen in Chapter 7, the land. Nor does such a non-representationalist position assume that the driver or other implicated unhuman and human figures appear fully-formed as subjects prior the

[135] *Supra*, Chapters 3, 4, 5

process of data production.[136] Instead of assuming the existence of driver subjectivity prior to the exercise of their agency, in this countermapping, I centre the driver's entanglement with other (unhuman and human) agencies within the processes of data production.[137]

In an insightful article on the central role that data occupies in organising labour relationships today, anthropologist Biju Mathew comments on how Uber utilises data produced by driver labour to drive its business model.[138] The core of Uber's business model is, then, not simply about algorithmic control of the driver via data technologies. Rather, it is about controlling drivers to the end of generating maximum amounts of data, and data as a quantified measure. And it is this data which eventually feeds Uber's broader business model. In this narrative, Uber's business model is indeed different from that of traditional taxi services, an argument that Uber constantly deploys in courts of law to justify its exemption from labour protection regulations.[139]

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[136] In this regard, work by queerfeminist and Indigenous scholars has theorized that subjects emerge from processes of agential entanglements rather than the other way round where the former are *a priori* defined. *See* for instance, Jasbir K. Puar, 'I would rather be a cyborg than a goddess': intersectionality, assemblage, and affective politics' (2012) 2(1) PhiloSOPHIA 49; Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity* (Routledge 2006); Zoe Todd, 'Refracting the State through Human-Fish Relations: Fishing, Indigenous Legal Orders and Colonialism in North/Western Canada' (2018) 7(1) Decolonization: Indigeneity, Education & Society 60

[137] My use of the term 'figure' in this Chapter and the next is tactical and should be understood less in terms of a defined subjectivity (eg. the idea of Uber driver as a pre-defined monolithic and/or static given) and more as "*mutable and contingent forms*" that are "*temporal sedimentations and transformations*" opening up into "*spaces of relationship and resonance*." See Jennifer Gabrys, *Digital Rubbish: A Natural History of Electronics* (The University of Michigan Press 2011) 10

[138] Biju Mathew, 'Magic Wands and Monkey Brains: Is Labor Ready to Lead Society in the New Struggle Over Data?' (2020) 119(2) South Atlantic Quarterly 422. *See* also, Biju Mathew, 'The neoliberal firm and nested subsumption: Labour process transformations in the NYC taxi industry' (2015) 52(11) Urban Studies 2051. Here, I deploy Marxist theory strategically but with certain reservation for which, *see,* Kavita Philip, 'The Science Problem in Marxism,' in Benjamin Zachariah, Lutz Raphael & Brigitta Bernet (eds.), *What's Left of Marxism* (De Gruyter 2020)

[139] *See* for instance, Opinion of AG Szpunar, *Supra* n. 17

Prima facie, proposing a narrative that is also used to defend Uber's exploitative labour practices may seem like a risky proposal. And I guess it is indeed. Nevertheless, I suggest that apprehending such data from the vantage point of Uber can provide new insights into how data drives capitalist exploitation in the digital Earth, and the role of data governance law in enabling it. Examining Uber's business model from the position of Uber (while not taking on its positionality) allows us to move beyond data governance's legal classification of data as 'personal' or 'non-personal'. As illustrated in the previous Chapter, the representationalist imagination of data as public domain —in that it holds the potential to be commoditised— underlies the legal construction of both non-personal and personal data.[140] Moreover as argued, given its underlying representationalism, the classification of data as personal and non-personal does not tell us anything useful about the processes of data production, the relationship of data and capital, and related erasure of observed's agency in data production. The vantage point of Uber regarding its business operations, however, allows us to provide an account of how capital apprehends such data to produce value in the data economy via what Mathew calls a 'spatio-temporal fix.'[141]

For Mathew, in the context of Uber, said spatio-temporal fix is engineered through three broad but overlapping grids of data: (a) Current data, which refers to data which is produced through the immediate daily experience of drivers.[142] (b) Data for medium term product reorganisation, which encompasses product redefinitions or the creation of new products on a medium-term basis and (c) Inter firm data, which comprises of data collected by Uber which is shared with

[140] *Supra*, §5.3, §5.4
[141] Mathew (2020), *supra* n. 138
[142] Mathew (2020), *Supra* n. 138, 429

or enters the operations of its subsidiaries or partners.[143] These three grids of data must not be understood as a taxonomy of data or even separate data processes in the operations of Uber. I propose that instead, these three grids need to be apprehended as different layers of the same *process* of value extraction through the production of data. Or as different perspectives or vantage points operating *within a single cycle* of value extraction. In other words, different ways of narrating the same materially-manifested configuration that leads to multiple modes of agential (or labour) extraction from what becomes the figure of the Uber driver. In what follows, I build upon the basic framework of these three data grids to illustrate how the algorithmic management of drivers in the Uber machine produces data and how this data generates value at the same time.

6.4.1. Current Data Grid: Ridesharing service as commodity, driver labour (agency) as data

Mathew describes the current data grid as the process of structuring the immediate daily work experience of the driver. Mathew notes, "*The daily work experience of a driver is produced from within a cage of data the driver is structured into. Apart from the most immediately visible decisions such as where to pick up a passenger, what route to take, what rates apply, there are other decisions that are not so easily visible. These include the allocation of fares, the disciplining of the driver and the targeting of drivers for incentive programs. Building on this, a third set of decisions that also an almost daily logic includes decisions about deactivation of driver permissions and other disciplinary procedures connected to ratings. This data grid seems local that is most of the above decisions seem to be structured through local data and this data is located entirely within the firm*."[144]

My proposal that this current data grid may further be understood as *an onto-epistemological configuration of value extraction* from the entangled agencies of the

[143] *Ibid.*
[144] *Ibid.*

driver with other unhuman and human agencies. As discussed in the previous section, in this scenario, data is deployed in the form of data technologies as part of the historical process of scientific management to organise the driver's work in order to offer ridesharing services to the passenger. Data technologies serve as the tools of algorithmic management used to control and manage driver behaviour through the reorganisation of the driver's labour time. As an end product, the ridesharing service is offered as a commodity in the market to the passenger by the Uber app. Uber, through its app, takes a commission from the sale of this commodity, thus earning from each individual ride.

But there is also much more at work here. Importantly, such a commodity exchange of the ridesharing service between the Uber driver and passenger being facilitated by the current data grid also *results in the production of more data.* And this production of additional data occurs *on top of* Uber already taking a portion of the driver's wage as its commission. In other words, this production of additional data acts as an add-on to the already-occurring process whereby Uber uses its app to extract the agency of the driver as labour and transform it into surplus value or capital for itself. However, as shown earlier, once scaled, this capital earned from commission is not enough for Uber as a firm to always turn in a profit.[145] And so, enters the lynchpin of this story of the current data gridm viz., the production of more data.

This is because *in Uber's engineering of the current data grid, driver labour is made to produce surplus not just in the form of Uber commission but also in the form of more data extracted from both the driver's agency and other unhuman and human agencies like those of passengers.* But since my focus in this Chapter is the figure of the driver, I would like to emphasise that said data cannot be produced without the agency of the

[145] *Supra*, §6.2

driver in finding their way, driving around, choosing which rides to accept under the pressures of the algorithm, and waiting on, interacting, and providing for the passengers they pick and various other forms of agency which is extracted as labour through algorithmic management in various ways.[146] Here, we can only recognise the driver agency and labour implicit in the production of such data if we move away from the representationalism inherent in construction of data in data governance law. In the context of the analysis here, such movement away from representationalist assumptions demands that we refrain from treating data as an 'exhaust,' 'natural residue' or 'surplus' of the activities of life and death of the drivers.

As Karl Marx has adequately observed in the context of factory work, what is considered to be 'surplus' is in effect the theft of worker labour by the capitalist.[147] Likewise as media and garbology scholars have illustrated, what is deemed to be 'residue' actually acts as a central functionality without whose existence, the system that generates it would crumble.[148] Bringing these insights

[146] Mark Andrejevic, 'The Work of Being Watched: Interactive Media and the Exploitation of Self-Disclosure' (2002) 19(2) Critical Studies in Media Communication 230; Trebor Scholz, *Uberworked and Underpaid: How Workers Are Disrupting the Digital Economy* (Wiley 2016)

[147] In this regard, it is not just the unpaid labour time connected to wage-labour that is exploited and productive, but also the unwaged labour that contributes to the production of commodities and capital accumulation. This insight has been expressed in many fields independently of each other, amongst them, autonomist theory, socialist feminism, and audience labour theory. *See*, Christian Fuchs, 'Karl Marx in the Age of Big Data Capitalism' in David Chandler & Christian Fuchs (eds.), *Digital Objects, Digital Subjects: Interdisciplinary Perspectives on Capitalism, Labour and Politics in the Age of Big Data* (University of Westminster Press 2019) 60-61. *See* also, Hamid R. Ekbia & Bonnie A. Nardi, 'Keynes' grandchildren and Marx's gig workers: Why human labour still matters' (2019) 158(4) International Labour Review 653

[148] Gabrys (2011), *supra* n. 137. *See* also, Michael Shanks, David Platt, and William L. Rathje, 'The Perfume of Garbage: Modernity and the Archaeological' (2004) 11/1 Modernism/Modernity 72; William Rathje & Culleen Murphy, *Rubbish! The Archaeology of Garbage* (Harper Collins 1992); Michael Thompson, *Rubbish Theory: The Creation and Destruction of Value* (Pluto Press 2017); Martin O'Brien, *A Crisis of Waste?: Understanding the Rubbish Society* (Routledge 2007); Michel Serres, *The Parasite* (University of Minnesota Press 2007); Walter Moser, 'The Acculturation of Waste' in Brian Neville & Johanne Villeneuve (eds.), *Waste-Site Stories: The Recycling of Memory* (University of New York Press 2002); Gay Hawkins, *The Ethics of Waste: How We Relate to Rubbish* (Rowman &

into the Uber context, the so-called 'residue' or 'surplus' of data from ridesharing activities is not residual at all! In fact, it is actually engineered through *specific* socio-economic-scientific-legal practices and infrastructure that makes the current data grid into a reality for Uber drivers. And as will be seen in more detail, what is popularly understood as residue or exhaust here also constitutes the core of Uber's business model.[149]

A shift away from the representationalism inherent in the conceptualisation of data within data governance law can, thus, open up a new way of thinking about data while accounting for the experience of Uber drivers and other algorithmically-managed workers in the digital Earth. This begins with the first step of acknowledging that underlying data, there always lies the agency of the observed*;* which has been used, directed, channelled, managed, and extracted as labour to produce said data. Simply put, underlying numbers are people. But not in any abstract, metaphorical or remote way; rather, in palpable, material ways. For the very lives, deaths, joys and sufferings of these people, their agencies — in the Uber case, those of drivers— are extracted as labour in the form of data for Uber.

Viewed from the current data grid, data is, thus, not merely an artefact or a product generated through particular activities. Rather, data is the very political *entanglement of agential relations* which allow for the subsumption of driver agency as labour for Uber while simultaneously denying agency of the driver in the

Littlefield 2005); John Scanlon, *On Garbage* (Reaktion 2005); Walter Benjamin (trans. Howard Eiland & Kevin McLaughlin), *The Arcades Project* (Harvard University Press 2002)

[149] It has also been noted that people in digital society are made complicit in capturing and re-organization of their own behaviour and in the "*rapid development of features that are able to identify, sequence, reorder and transform human activities,*" *see* Philip E. Agre, 'Surveillance and Capture: Two Models of Privacy' (1994) 10(2) The Information Society 101. Again, this observation reinforces that the captured data is "*not a mere by-product of the digital mediation of otherwise naturally occurring activities. The data are, at least in part, evidence of the purposeful design of the system that 'happens' to generate them*," *see* Gürses & van Hoboken (2018), *supra* n. 68, 599-601

production of data. Because data is simply seen as a residue or a naturalised given under representationalism, the driver agency as the observed in its production is erased. Seen from a non-representationalist worldview, such erasure effectively creates relationship of power between Uber and the driver through which driver agency is extracted as labour. This relationship of extraction then may be understood as data.

Within the grid of current data, the Uber app extracts driver agency as labour and subsumes it into multiple kinds of data. Without seeking to offer a comprehensive account of all the data appropriated from the 'surplus' labour of drivers, I mention certain examples here. For instance, the driving labour of drivers is appropriated or subsumed into data about the drivers' locations by the Uber app. Uber notes that in the case of both drivers and passengers, it collects "*precise or approximate location data from a user's mobile device if enabled by the user to do so*."[150] However in the case of drivers, Uber also "*collects this data when the Uber app is running in the foreground (app open and on-screen) or background (app open but not on-screen) of their mobile devices*."[151] In other words, in the case of drivers, location data is constantly generated through the labour of the driver's movements and extracted by the Uber app from drivers' mobile devices.

Apart from location data, the current data grid also entails the subsumption of driver labour via processes of algorithmic management into *yet more* data around ride transactions, including the type of services requested or provided, order details, date and time the service was provided, amount charged, distance travelled, payment method and usage of promotional codes.[152] In addition,

[150] Uber, 'Uber Privacy Notice,' 10 February 2021 <https://www.uber.com/legal/en/document/?name=privacy-notice&country=united-states&lang=en#u670i5e575> accessed 25 September 2021; §2
[151] *Ibid.*
[152] *Ibid.*

algorithmic management also enables driver labour to be subsumed through cookies that capture the driver's browsing habits as labour subsumed into so-called 'demographic data.'[153] The current data grid, moreover, enables the appropriation of the driver's material and emotional labour to generate data about the usage of the app. As Uber states, "*We collect data about how users interact with our services. This includes data such as access dates and times app features of pages viewed, app crashes and other system services. In some cases, we collect this data through cookies, pixels, tags and similar tracking technologies that create and maintain unique identifiers*."[154]

The current data grid thus subsumes drivers' emotional agency as labour not only on the basis of passenger ratings but also via the Uber app into communication data about the calls, texts or other communications, including the date and time of the communications and the content of the communications made by the Uber drivers, for instance between drivers and passengers.[155] In this way, Uber reorganises the observed's agency spatially and temporally. Such spatial and temporal reorganisation is what results in the so-called 'spatio-temporal fix' which connects the drivers and passengers in ways that erase the observed's agency in order to extract labour.

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[153] Uber, 'Cookie Policy (Global)' 20 May 2021 <https://www.uber.com/legal/en/document/?name=cookie-notice&country=netherlands&lang=en> accessed 25 September 2021. For a discussion on how cookies are used to gather data within digital environments, *see* Julie E. Cohen, *Between Truth and Power: The Legal Constructions of Informational Capitalism* (OUP 2019) 54-57. For a discussion of how media and internet browsing habits are subsumed as labour within the contemporary data economy, *see* Christian Fuchs, 'Dallas Smythe Today—The Audience Commodity, the Digital Labour Debate, Marxist Political Economy and Critical Theory. Prolegomena to a Digital Labour Theory of Value' (2012) 10(2) tripleC: cognition, communication, co-operation 692; Brice Nixon, 'The Exploitation of Audience Labour: A Missing Perspective on Communication and Capital in the Digital Era' in Eran Fisher and Christian Fuchs (eds.), *Reconsidering Value and Labour in the Digital Age* (Palgrave Macmillan 2015); Andrejevic (2002), *supra* n. 146

[154] *Supra* n. 150

[155] *Ibid.*

Since labour is extracted in the form of data in this non-representationalist countermapping, data may be understood as a living and political relationship by itself. In other words, in a non-representationalist countermap of Uber that centres the driver, *data is the process of extraction and subsumption of the human agency of the Uber driver as labour*. Considering that many Uber drivers are people of colour, black and/or come from racialised immigrant backgrounds, this extraction of the agency of the Uber driver as labour enforces a racial hierarchy of work.[156]

Uber's current data grid thus plays a key role in reorganising driver labour in relation to the Uber app and the passenger not only for the conversion of drivers' surplus labour into Uber's commission (K1) but crucially, also for the appropriation or conversion of driver labour into data (K2). In what follows, my focus will be on K2 and how the subsumption of driver agency as labour into more data serves the other data grids engineered by Uber.

6.4.2. Data Grid for Medium-Term Product Reorganisation: Algorithmic service as commodity, data as capital

The second data grid which Mathew defines in the context of Uber operations is data for medium-term product reorganisation (MTPR data grid). It refers to a data grid which "*is connected to product redefinitions or the creation of new products on a medium-term basis*,"[157] and may operate locally, regionally, and sometimes globally. Mathew characterises this data grid as key to developing new Uber products in the medium-term. So, for instance, data from Uber's ridesharing service was used to offer a new Uber product or commodity viz., UberEats.[158] This creates what

[156] Ifeoma Ajunwa, 'Race, Labor, and the Future of Work' in Khiara M. Bridges, Devon Carbado, Emily Hough (eds.), *Oxford Handbook of Race and Law in the United States* (OUP 2021, forthcoming); Veena Dubal, 'The New Racial Wage Code' (2021) Comparative Political Economy Regulation
[157] Mathew (2020), *supra* n. 138, 429
[158] *Ibid.*

has been termed as economies of scope.[159] In Mathew's words, "*Data produced (or value created and subsumed) in one labor/production process enters, as if it were capital, in an entirely different production/labor process. The key shift here is to understand data as value/latent capital that can enter any number of product reorganisations or new commodity forms. Thus an infinite cycle of value appropriation that moves spatially and temporally is at play.*"[160] (sic)

From the vantage point of the MTPR data grid then, data begins to act exactly like capital. In other words, data is capital (K2) which is reinvested into new production processes to produce yet more capital, yet more data. But how may we understand the MTPR data grid in relation to the figure of the Uber driver?

As seen in the last subsection, from the perspective of the current data grid, data is the *process of* subsumption of driver labour. From the perspective of the MTPR data grid, however, the same data appears as a form of capital which can be re-used to develop new types of commodities. Based on these two understandings, I argue *that the perception and use of data as capital in the contemporary data economy cannot be divorced from the processes of appropriation of labour of the observed for the generation of that data.* In other words, the functioning of data as capital in the data economy is made possible *only through an unrecognised appropriation of erased labour of the observed in creating said data.* This erasure happens through the invisibilisation of the data-making labour of the observed; enabled by the underlying representationalist assumptions about data including the idea that data constitutes a 'surplus' or a 'residue' of the observed's life and death. And as we have seen in Chapter 5, the concept of data in data governance law is founded exactly on such representationalist assumptions. But more on law's complicity later. For now, it is

[159] *Supra* n. 53

[160] *Ibid.* This observation is also echoed in the quote from Andrew Ng earlier in this Chapter, *supra*, §6.2. *See* also *supra* n. 63

important to note that the use of data as capital in our data economy, including by Uber, could not happen without representationalist assumptions about data that erase the labour of the observed or the Uber driver in making said data.

Having made clear this extractive relation between the MTPR data grid and the current data grid as well as the Uber driver, we may now examine Uber's operations from the perspective of the MTPR grid. As already stated, the MTPR data grid builds upon the current data grid. The current data grid subsumes the driver's (observed's) agency as labour into order to generate more data (K2). Parallel to this, the MTPR grid utilises this data (K2) as capital: K2 is re-invested into engineering and programming activities in order to upgrade and create Uber's data technologies for various purposes. Said data technologies are then marketed as new Uber products in the medium-term.

In other words, from the vantage point of the MTPR data grid, the data capital invested is K2, and the labour harnessed is that of Uber's engineers, programmers, design workers and the entire infrastructure which is built to 'support' them. This labour is then used to manufacture the commodity that is marketed as Uber's data technologies or as new features (ridesharing, UberEats, upfront pricing etc.). As discussed, these data technologies in turn result in problematic algorithmic management of the Uber driver.

Uber commoditises data technologies in order to sell them as a service. This commodity exchange takes place in the current data grid, whereby in exchange for this data technology service, Uber receives K1 (commission taken by Uber on each ride) and K2.' Here K2' signifies even more data than the K2 of before. Thus, Uber's data cache or capital increases from K2 to K2'. The difference between K2' and K2 is made up of the surplus labour of Uber's engineering and design teams as well as the invisibilised labour of the Uber driver from the current

data grid. This is because from the perspective of the MTPR data grid, labour extraction happens not just relative to the current data grid and the Uber driver, but also in relation to the employees of Uber Engineering. In this manner, a sophisticated spiral or nested relationship of extraction and labour subsumption functions between the MTPR and current data grids, and between Uber's exploitation of its engineering staff and of its drivers.[161] All this, for the generation and accumulation of more data.

As mentioned earlier,[162] in their work outlining the recent technological and legal history of computing, Gürses and van Hoboken have noted 'the agile turn' in computing, mapping the fundamental transformative shift that has occurred since the turn of the millennium regarding how the production process of (non-critical) software is organised.[163] They further identify the collapse of "*the distinction between the production and use phase of digital functionality"* as one of the implications of these transformative shifts in software (data technology) production organisation.[164] I suggest that the relationship between Uber's current data and MTPR data grids needs to be understood as an example of a similar collapse, but in the context of data production and use.

In their work, Gürses and van Hoboken not only map the collapse of this distinction between the production and use phases as having serious implications for privacy governance, but also underscore the importance of accounting for "*users being enlisted as labour in the production of services"* through the 'capture' of data.[165] I propose that in a similar manner, the spirally-nested relationship of

[161]Mathew (2015), *supra* n. 138
[162]*Supra*, §6.2
[163] Gürses & van Hoboken (2018), *supra* n. 68, 584
[164] Gürses & van Hoboken (2018), *supra* n. 68, 596
[165] Gürses & van Hoboken (2018), *supra* n. 68, 598-600

extraction operating between the MTPR and current data grids should be understood as an implication of the labour reorganisation that happens through the blurring of the distinction between the production and use of data. The collapse of the distinction between producers and consumers in the production of both data allows data technologies to manifest as a commoditised service for data production and extraction.[166] This is a system where, on the one hand, the observed is used to generate data essential to the production and development of data technologies. But simultaneously, on the other, the observed is also only understood as a mere user or consumer of said technology and their agency and labour in the production of data is erased.

In this way, the MTPR grid is also devised as a part of the spatio-temporal fix by extracting labour in one space-time to apply it to another. Geographical and racialised hierarchies of labour and racial capitalism may be reflected through this grid such that the labour of certain racialised groups of people using Uber is invisibilised in order to serve not just Uber; but also, other racialised groups of Uber users. One example of this is Uber's upfront pricing product whereby evidence suggests that experimental trials for the product were first run amongst Indian users of the app before the release of the product in US.[167] In other words, the data and the underlying labour of producing said data of Uber users in the Global South was used to develop the product that was then marketed for the Global North users. But even as it is extracted as labour, within the political economy of representationalism, the agency of the observed/driver is erased and invisibilised as 'surplus', as 'exhaust,' and as 'data.'

166 The processes of the collapse of the distinction between consumers and producers on the one hand and that of the manifestation of data technologies as a commoditised service for the production of data however should not be understood as existing within a relationship of linear cause-and-effect, but rather as parallel and concomitant, as part of a broader ecology that is the digital Earth.

167 Mathew (2020), *supra* n. 138

6.4.3. Inter-Firm Data Grid: Diversified products as commodity, data as capital

The last data grid which Mathew identifies is the inter-firm data grid. The logic for value-extraction in this grid is similar to that of the MTPR grid, with the exception that this grid is not limited to only Uber but is actually spread across several firms.[168] As a result, the inter-firm data grid is implicated in the generation of a number diversified products as part of economies of scope. These diversified products are then either sold as commodity by firms outside of Uber or are developed further by Uber or its various subsidiaries and partners to be sold as commodity. These real or potential commodities in the form of current or future diversified products prominently includes the Uber autonomous car project (officially known as the Advanced Technologies Group, which is now being conducted in partnership with the Amazon-backed Aurora Innovations[169]).

In addition, such diversified commodities may be made available as automobile insurance that is sold by several insurance companies in partnership with Uber,[170] or as road infrastructure and traffic management data technologies, which are being developed by Uber in partnership with many governments around the world.[171] These commodities may further include products as diverse as hotel and

[168] Such diversification may also be understood as part of the economies of scope rather than the economies of scale, *supra* n. 53

[169] Heather Sommerville, 'Uber Sells Self-Driving-Car Unit to Autonomous-Driving Startup' The Wall Street Journal, 7 December 2020 <https://www.wsj.com/articles/uber-sells-self-driving-car-unit-to-autonomous-driving-startup-11607380167> accessed 25 September 2021

[170] Uber, 'Every trip is insured,' 2021 <https://www.uber.com/py/en/drive/insurance/> accessed 25 September 2021; Danni Santana, 'Auto insurers mining data to develop ridesharing and autonomous vehicles,' Digital Insurance, 12 March 2018 <https://www.dig-in.com/news/auto-insurers-mining-data-to-develop-ridesharing-and-autonomous-products> accessed 25 September 2021

[171] Uber, 'Building the future of public transit together' 2021 <https://www.uber.com/de/de/transit/agency/> accessed 25 September 2021; Uber, 'Uber joins with Infrastructure Partnerships Australia to show how cities move,' Uber Blog, 10 October 2016 <https://www.uber.com/en-AU/blog/uber-ipa-commute/> accessed 25 September 2021

accommodation services,[172] airline services,[173] credit card and payment services,[174] to name just a few.

Despite such product diversification, the relationship of the inter-firm data grid with the figure of the driver presents a similar account of invisibilisation and subsumption of driver labour into data production as engineered by the previous two grid formulations. From the perspective of the inter-firm data grid, data is generated via Uber's ridesharing operations (K2) and other medium-term products (K2') through the algorithmic management of the driver's labour as by data technologies. This data (K2+K2') together or in parts, then enters any number of Uber subsidiaries and partners; serving as input-capital in the completely different and diverse commodity production processes outlined before.[175] The subsumption of algorithmically-managed driver labour into data thus powers multiple production processes that are spread across numerous geographies and timelines. As Mathew observes, "[The] *value/data produced by workers moves simultaneously spatially and temporally across firms and is arguably part of the calculus of surplus appropriation that privaze equity/venture capital is making.*"[176] The spatio-temporal fix offered by Uber's current data grid, thus, comes full circle.

By using data technologies to manage drivers algorithmically in order to generate yet more data, Uber essentially acts as a data generation machine designed to

[172] Annie Sciacca, 'Hilton taps 'sharing economy' with Uber partnership,' San Fransisco Business Times, 1st September 2015 <https://www.bizjournals.com/sanfrancisco/blog/2015/09/hilton-taps-sharing-economy-with-uber-partnership.html> accessed 25 September 2021
[173] Becky Yerak, 'Uber, American Airlines form partnership at O'Hare, 10 other airports,' Chicago Tribune, 11 February 2016 <https://www.chicagotribune.com/business/ct-american-airlines-uber-0212-biz-20160211-story.html> accessed 25 September 2021
[174] Donna Tam, 'Uber adds ability to pay for rides, earn points with Amex rewards,' CNET, 9 June 2014 <https://www.cnet.com/tech/mobile/uber-adds-ability-to-pay-for-rides-earn-points-with-amex-rewards/> accessed 25 September 2021
[175]Mathew (2020), *supra* n. 138
[176]*Ibid.*

extract value from erased labour in unprecedentedly sophisticated ways. Circulating seamlessly between the current, MTPR and inter-firm grids, data acquires seemingly contradictory but mutually productive relations. For one, data becomes 'free.' By this, I mean that data appears to be both free-flowing and freed of the labour and infrastructure used to produce it. In other words, it becomes alienable. Freed of the conditions of its own production, data manifests as pure epistemology that has transcended the ontological power relations of its production.

Implicit to this narrative of data which supports Uber's model is, of course, the assumption of representationalism. For without the implicit representationalist assumption about data being epistemological artefact that is distinct and separable from the ontological realm of its production, the labour of the observed in producing said data could scarcely be made invisible or 'surplus.' And irrespective of whether it were personal or non-personal, data could scarcely flow so 'free'ly without representationalism. But even as it becomes 'free,' said data also becomes valuable to a certain elite class of human society by behaving as-if capital. Which is simply to say that data is appropriated from the 'surplus' labour of the observed/Uber drivers and reinvested into Uber to develop new medium-term commodities. So, what makes data 'free' is exactly also what allows its 'capture.' The openness and closedness of data, its freedom and captivity are thus two sides of the same representationalist coin. It is this apparent contradiction within representationalism that facilitates the exploitation of the drivers as the observed and the erasure of their agency and labour from the data production process.

By contrast, a non-representationalist counter-narrative is a narrative of data production that prevents us from presenting data as an *a priori* given, naturalised resource or commodity. Instead, it enables us to perceive data produced within

the Uber machine as an extractive relationship between the observer and the observed. Under such a relationship, the agency of the observed is erased and extracted as surplus 'labour' that remains invisibilised. As seen throughout this section, a non-representationalist countermapping thus allows us to reveal how the extractive relationship of power which is fueled by representationalist assumptions is necessary to the functioning of Uber as a (algorithmically-managed) data generation machine.

6.5. Data Governance Law and the Politics of Erasure

So far, I have argued for the examination of Uber as an algorithmically-managed data-generation machine by centring its logic of value-generation through the production of data. And I have illustrated that such generation of value does not happen without the erasure of the agency and by extension, labour of the drivers in generating data, and the representationalist assumptions about data which enable such erasure. What is the role of data governance law in this scenario? Importantly, what kind of response-ability does data governance law take on in this value extractive setup which is operationalised via the invibilised agency/labour of the observed in data production? In the present section, I would like to make three points in this regard.

First, that through its representationalist co-production of the concept of data, data governance law along with the modern legal form plays a complicit role in the aforementioned extractive setup of data economy. In this context, the previous Chapters have outlined how representationalism is well-embedded into the mode of construction of 'data' under data governance law across the categories of personal and non-personal data. As illustrated, this is achieved through the co-production of the concept of 'data' by constructing the boundary between non-law and law within the modern legal form of Selbstreflektion. Due

to the representationalist assumptions underlying this process, data is naturalised as an epistemological resource that is given as a resource in non-law and as public domain in law, and is 'collected' and commodified by the efforts of the observer i.e., data economy enterprises like Uber. What becomes invisibilised in this representationalist narrative is labour of the observed; for instance, that of Uber app users (drivers and passengers) in creating said data. Uber is constructed as the active observer that lies in a hierarchical relationship with the passive observed who is denied agency. In the present Chapter, I have limited my analysis to the figure of the Uber driver and through a non-representationalist countermapping, have illustrated how their agency is extracted as labour under algorithmic management in order to generate said data.

As seen, representationalism is embedded in one of the most fundamental concepts of data governance law viz., the legal form of 'data,' and it is a necessary ingredient for the production and exploitation of surplus labour in the form of data through the erasure of the observed's agency; so, we cannot, by any stretch, say that data governance law has no role to play or is not concerned with the actual modes of value extraction in the digital Earth. In fact, even as data governance law structures the various flows and rights concerning data, it also becomes complicit in the erasure of the data-making agency and labour of the observed/the surveilled of the digital Earth.

This complicity is made most evident by data governance law's absolute silence on the processes of value extraction via the production of data.[177] For silence here means invisibilisation. And indispensable to the production and extraction of data in the digital Earth is the invisibilisation of the observed's agency in data

[177] For a parallel analysis of law's similar silence in the context of labour law, see Emily Rose, 'Reinterpreting Law's Silence: Examining the Interconnections between Legal Doctrine and the Rise of Immaterial Labour' (2020) 47(4) Journal of Law and Society 588

production and the extraction of labour in this process. Silence here also means erasure and exclusion. When data governance law does not provide a language to interrogate one of its most fundamental assumptions about data viz., representationalism —an assumption so fundamental that it remains only implicit within legislations, case law, legal texts or discourse— then, said body of law can hardly be understood as inclusive; especially, when data governance law simultaneously uses this assumption to structure relations in the digital Earth in a way that enables the constant exploitation of the observed through data production. In its silence then, data governance law is hardly innocent. In fact, it is in its silent deployment of the representationalist concept of data that data governance law does most of its damage.

Second, the point I would like to make is that the representationalist construction of data through the modern legal form enables the delinking of the legal discourses of agency and knowledge production in the context of the individualised data subject (and by extension, the discourse of fundamental and human rights concerning data, data access, data protection) from the legal discourses concerning exploitation within the political economy of the digital Earth. Promising new work in the field of the political economy of data tends to be framed in separation from the discourse on the data subject (the observed's) agency in the contexts of surveillance in modern society.[178] The result is that questions about data's political economy, on the one hand, and on the other, about data-oriented governance (including protection of the data subject) appear as two distinct spheres of concern that are largely unrelated. Such delinking or separation is not merely coincidental; it flows directly from the logic of representationalism, which erases the observed's agency and extraction of the observed's labour for the purpose of data production.

[178] *Supra*, §1.5

Part II of this book has illustrated how the modern Western legal form enacts representationalism in its construction of data at the boundary of the non-law and the law. This representationalism separates the spheres of ontology and epistemology such that the observed appears as an object with passive agency; lying in a hierarchical relationship with the observer with active agency; within the processes of data production, or the epistemological sphere. Such separation enables the data subject to be constructed as a passive agent in the processes of data production. So, for instance, it is proposed that data is merely 'collected' from this data subject/observed by the observer instead of being actively produced through the agential entanglements of the observer and the observed. In such a representationalist formulation, data is the mere 'exhaust' of the observed's activities in the ontological sphere; and therefore, a passive production.

Bringing this analysis to the case of Uber ridesharing service, the driver is a data subject whose actions enable ridesharing activities to be construed within the ontological sphere. This includes, but is not limited to the algorithimically-managed activities of opening the app, browsing on smartphones, choosing to respond affirmatively or negatively to a ride request as well as actively driving around to pick up and drop off passengers. *However, when considering the processes of producing data about these ridesharing activities, the driver is construed as the observed devoid of agency in the generation of data.* The active agency for knowledge production broadly and therefore for data production in this representationalist formulation is supposed to lie with Uber which surveils, extracts, and 'collects' data or knowledge about the driver's ridesharing activities.

So, while data is construed as a resource and as a negotiation between legal person and thing within the legal form of data governance law, the observed/driver's labour in producing that data is rendered invisible. Data is divorced and alienated from the ontological conditions of its production and relegated to a separate

epistemological sphere. This allows for the erasure of the driver's activities in the ontological sphere; preventing it from being relevant to the concept of data. These *legal formal assumptions about data thus shape the dichotomy between ontological and epistemological spheres; strengthening a representationalist perspective on the universe*. Laying these foundational representationalist assumptions, data governance law then concerns itself with how to govern the epistemological sphere. Following this, even progressive scholarship on the political economy on data governance will concern itself with questions of control and utilisation of this data resource or questions of distribution and access;[179] but the underlying representationalist assumption about such data being a resource or naturalised public domain to be utilised and harnessed as a result of the hierarchical observer/observed relationship remains unquestioned. Construed as separate from the epistemological processes of 'gathering' data *about* ridesharing activities, the ontological sphere where ridesharing activities actually take place is, then, perceived to be immaterial to the concerns of data governance law. True to the representationalist worldview, the material sphere of ridesharing activities is cleanly separated from the epistemological sphere of creating knowledge about these activities. Relatedly, the governance of data in ridesharing is understood as an issue delinked and decontextualised from the governance of ridesharing activities.

I would argue that this representationalist separation of the ontological and epistemological spheres results in the separation of the legal themes of structural political economy and of the human/fundamental rights discourse relating to the protection of data subject's agency within data governance discussions. And

[179] *See* for instance, Salome Viljoen, 'Democratic Data: A Relational Theory for Data Governance' (2021, forthcoming) Yale Law Journal <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3727562> accessed 15 September 2021; Julie E. Cohen, 'The Biopolitical Public Domain: The Legal Construction of the Surveillance Economy' (2018) 31 Philosophy and Technology 213

through this severance, representationalism hides power relations; preventing legal redress.

Questions of political economy in the digital Earth and the data subject's agency and related rights that flow through it are fundamentally connected. For without the labour of each observed/data subject/Uber driver, data could not be produced in the first place. And without data, the political economy of data could neither be built nor function. The labour of the data subject figure (and not just of the worker figure or the observer figure, eg. of Uber data technologies or software engineers) is, thus, indispensable to the political economy of data. Without the agency of the data subject (the observed) extracted as labour, the contemporary political economy of data would simply not exist. When the agency of the observed in data production is accounted for within a non-representationalist countermapping, the individualised protection of the data subject logically would also mean appropriate representation and recognition via the protection of this data subject's agency and labour in creating data. This issue would, then, be inherently linked to the question of exploitation in the political economy of data. The questions of agency of the data subject in the face of surveillance data technologies on the one hand, and that of exploitation within the political economy of data, on the other, would not then appear as severable or delinked concerns. This is because under the non-representationalist narrative, the recognition of the agency of the data subject or the observed in the production of data allows us to construe the data subject also as a labouring subject inherently implicated within the political economy of data. This is a connection that current data governance law, given its inherent representationalism, fails to make.

What exactly a non-representationalist regime of protection would comprehensively look like is beyond the scope of this book. What I do, however,

want to emphasise is that a recognition of the data subject's agency in producing data within our digital Earth would open up and centre an entirely different set of questions and frameworks than what the data governance discourse deals with today. Such a recognition would entail a decisive shift away from conceptualising data as an artefactual resource or as a commodity. Instead, such a shift would demand understanding data as a knowledge production process that involves the agencies of the observer, the observed, and several (unhuman and human) others. In this, it would hark a shift away from representationalism to understanding data as a set of power relationships. It would allow for the discourse to shift and pose questions of what it means to create and maintain good, responsible, and reciprocal relations in the context of knowledge and data production.

As discussed, this is an approach that Indigenous movements on data sovereignty and much of Indigenous scholarship on data already undertakes.[180] Western law on data governance could benefit vastly from engaging with these literatures so as to account for the exploitation within the processes of production; and not just the distribution or access to data. Such an approach would allow data to no longer be construed merely as an exhaust or surplus of the observed's life and death; but rather as a contextualised onto-epistemological relationship that involves a myriad of agencies (entangled human and unhuman agencies) at work. The hierarchical distinction between the observer and the observed would be questioned and unsettled. This would allow for the centring of questions about how to create good, responsible, and reciprocal relations with these other unhuman and human agencies for the production of responsible data and knowledges. In such a scenario, data governance law would have to radically reconsider its understanding of data while confronting its implicit representationalist assumptions and its exploitative consequences.

[180] *See* for instance, *supra* n. 2; *See* also, *supra* §5.3 and *infra*, Chapter 7 generally

The representationalist erasure of the observed labour in producing data and knowledge currently allows for the delinking of the legal discourses of agency, knowledge production, data protection and privacy from that of exploitation within the political economy of data. This separation will persist as long as we refuse to consider the question of the observed's agency in the production of data i.e., as long as we choose to stick to representationalist assumptions about knowledge and data. This delinking, in fact, reinforces all the implicit representationalist assumptions made by the law and policy community about data. Thus, such delinking of the legal discourses of data subject, their agency, and knowledge production from that of the extractive relations within the political economy of data is not an innocent move. In fact, it is inherently political for it ensures the erasure of the observed's agency in the creation of data. The politics of erasure and exclusion are thus enacted through such delinking.

How may we respond to such politics of erasure and exclusion? In recent times, legal scholars —especially those working either with racialised and marginalised people or in the global South in neocolonial contexts of the digital divide— have demanded a shift in the data governance discourse. In particular, there has been a call to move from discussions focusing on how the *deployment* of data technologies enacts discrimination towards a critical enquiry into the power relations embedded within the processes of *production* of data technologies.[181] A sizeable literature discussing exploitation in the digital economy today focuses

[181] Vidushi Marda, 'Introduction to Global Information Society Watch 2019 on Artificial Intelligence: human rights, social justice and development" (APC, ARTICLE 19, and Swedish International Development Cooperation Agency (SIDA), 2019) <*https://giswatch.org/sites/default/files/gisw2019_web_intro_0.pdf*> accessed 20 September 2021; Amba Kak, '"The Global South is everywhere, but also always somewhere": National Policy Narratives and AI Justice' (2020) AIES '20: Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society 307; Uma Rani & Parminder Jeet Singh, 'Digital Platforms, Data, and Development: Implications for Workers in Developing Economies' (2019) 41(1) Comparative Labor Law & Policy Journal

upon the unequal power exercised by digital monopolies.[182] While combating digital monopolies is important, the power relations that perpetuate in the data economy today are not only about a monopolistic capture of the data economy. Which is to say it is not merely a question about the distribution of data, or who accumulates the most data to earn value from it, and shields others from doing the same. Nor is it only a question about who gets to manipulate others' behaviour using data technologies.

This is not to say these questions are not relevant. To the contrary, these are very important concerns indeed. But having said this, the stakes are also much higher than just these questions concerning the distribution of data. As argued, one of the biggest stakes lies in the politics of data production alongside the politics of data distribution. Here, the stakes concern who gets completely erased from the process of knowledge-making, data production and technologies based on such data and knowledges. This is a question that encompasses more than just the digital. And as shown in Chapter 3, this is a question inherently linked to the politics of White colonist imperialism and racialised capitalism. It is linked to the continuing colonial histories of Science and the Empire.

So, while in general, I do propose supporting the call by Global South scholars for the making the discursive shift from the politics of deployment towards the politics of production of data technologies, I would also go further: I propose that in order to adequately account for the exploitative power relations in the digital Earth (including in the context of Uber drivers), any analysis of the

[182] For some recent prominent examples, *see*, Soshana Zuboff, *The Age of Surveillance Capitalism* (Profile Books 2019); Nick Couldry & Ulises A. Mejias, *The Costs of Connection: How Data is Colonising Human Life and Appropriating it for Capitalism* (Stanford University Press 2019); Viljoen (2021), *supra* n. 179; Jim Thatcher, David O' Sullivan, Dillon Mahmoudi, 'Data colonialism through accumulation by dispossession: New metaphors for daily data' (2016) 34(6) Environment and Planning D: Society and Space 990

production processes of data technologies must (1) acknowledge data itself as a politically constructed onto-epistemological agential relation; not as a naturalised or given resource. Such analysis of the production of data technologies must further (2) visibilise and account for the erased agency and extraction of labour of the observed for the production of data.

The *third* and last point I want to make concerns the question of who does data governance law and its discourse serve when it delinks and stays silent about politics of the data production process? Considering that data governance law seeks to govern data at the broadest level, the exclusion from this field of law, of the agencies, actors, and politics involved in the production processes of data, is interesting to say the least. As I have argued, such exclusion is the obvious consequence of the conceptualisation of data as a given or natural resource by data governance law. For when data appears as given, natural, pervasive or obvious to a field of legal study and application, there seems no need to examine how it becomes data in the first place. Hence, no account of the lives, agencies, and labour used to produce said data is sought. This impaired spot of data governance law with regard to production processes of data is certainly not merely incidental nor is it inconsequential. It definitely hurts the observed, like Uber drivers, who are invisibilised and whose agency and labour in data production is erased and then appropriated as surplus by others. By excluding the agency of the observed, data governance law can produce only a representationalist and labour-exclusionary account of the data subject. And such an account of the data subject prevents it from being fully accountable or responsive to the exploitative working conditions experienced by the Uber drivers.

The strategy of invisibilisation of labour and its appropriation has a long gendered and racialised history. Globalisation and automation have emerged as modes for outsourcing 'dirty work,' which is depoliticised through terms like

'routine work,' 'unskilled work' or 'non-creative work.'[183] But these new hierarchies of work are only the products of older hierarchies of work along the lines of race, caste, and gender.

I have already illustrated before how the logic of race and colonisation has historically worked to invisibilise the agency of the observed in the process of knowledge and data production within the non-law.[184] Chapters 4 and 5 have also illustrated how such representationalist erasure of the observed's agency in co-produced by the law through the modern legal form. From such mapping, it is clear that the politics of erasure in the production of data is not all that new; and not limited to the digital turn. Such politics of erasure in fact has a much longer history as illustrated through the gendered, racialised and casteised constructions of labour and the political economy. Considering the histories and presents of automation, Atanasoski and Vora have pointed out that structures of contemporary digital economy "*retain the degraded categories of labour formerly done by racialised others."*[185] Similar arguments could be made in the context of gender and caste.[186] For instance, media scholar Kylie Jarrett has posited that digital labour is best understood through the history and framework of domestic work, which much like the former offers both the productive and reproductive capacity demanded by capitalism and blurs the distinction between the private and public,

[183] Vora (2015), *supra* n. 8; Hamid Ekbia & Bonnie Nardi, 'Heteromation and its (dis)contents: The invisible division of labor between humans and machines' (2014) 19(6) First Monday <https://doi.org/10.5210/fm.v19i6.5331 > accessed 25 September 2021

[184]Supra, §3.2

[185] Neda Atanasoski & Kalindi Vora, *Surrogate Humanity: Race, Robots, and the Politics of Technological Futures* (Duke University Press 2019) 20

[186] *See* in this regard, Raval (2020), *supra* n. 86; Murali Shanmugavelan, 'Decolonising Media, Communication, and Technology Studies: An Anti-Caste Perspective,' Association for Progressive Communications Lecture Series, 6 August 2021 <https://www.apc.org/en/news/challenging-hate-lecture-series-will-focus-decolonising-media-communication-and-technology> accessed 25 September 2021

cultural and economic.[187] Similarly, it has been noted that the history of the low-waged labour of women and immigrant workers used to drive temporary staffing agencies finds its logic extended into the digital world.[188] As STS scholars Starr and Strauss have pointed out, "*Work does not disappear with technological aid. Rather, it is displaced — sometimes onto the machine, as often, onto other workers. To the extent that some people's work is ignored as they are perceived as non-persons, more "shadow work" or invisible work is generated, as well as the (sometimes) obvious social justice and inequity issues. In the creation of large-scale networked systems, this process may cascade.*"[189]

Given this, I propose that the erasure of the observed's agency; and, therefore, the erasure of the process of extraction of such agency *as labour* in the data production process should be contextualised against these broader racialised and gendered histories of the invisibilisation of work. Such contextualisation allows us to make visible the larger politics of data governance law and its underlying representationalism. Such politics consists not merely of an abstract erasure of the agency of the observed; but is deeply intertwined with the gendered and racialised constructions of the categories of 'unskilled' and 'routine' work. The political exclusion of the observed and their agency from the production of data is, thus, intersectional and needs to be understood as entangled with other older categories of exclusion like race, caste, and gender.[190]

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[187] Kylie Jarrett, 'Through the Reproductive Lens: Labour and struggle at the intersection of culture and economy' in David Chandler & Christian Fuchs (eds.), *Digital Objects, Digital Subjects: Interdisciplinary Perspectives on Capitalism, Labour and Politics in the Age of Big Data* (University of Westminster Press 2019) 103-104

[188] van Doorn (2017), *supra* n. 7

[189] Susan Leigh Starr & Anselm Strauss, 'Layers of Silence, Arenas of Voice' (1999) 8 Computer Supported Cooperative Work 9, 19-20

[190] Seeta Peña Gangadharan & Jędrzej Niklas, 'Decentering technology in discourse on discrimination' (2019) 22(7) Information, Communication & Society 882

6.6. Conclusion

In the present Chapter I have provided a non-representationalist countermapping of the production of data within the political economy of the digital Earth by centring the figure of the Uber driver. To do this, I have proposed understanding Uber as an algorithmically-managed data generation machine. Such a machine not only manages drivers through the production of data that are used to develop algorithmic data technologies; but importantly, also uses algorithmic management to produce even more data. I have argued that this logic of data production and accumulation lies at the heart of the contemporary globalised data economy.

In doing so, I have unpacked how algorithmic management of Uber drivers is used to produce even more data within the global value chains of data production by building upon the insights provided by anthropologist Biju Mathew concerning the Current, the Medium-Term Product Reorganisation (MTPR) and the Inter-firm data grids. I have illustrated how these networks of data flow allow for the extraction of driver agency as labour, to produce data within the onto-epistemological political relationship between the driver and Uber. Such extraction enables the availability of data not only as a commodity; but also as capital which flows into non-ridesharing production processes of Uber, thus enabling Uber to increase its value while exploiting the drivers through the invisibilisation of their agency/labour in processes of data production.

Finally, I have outlined how representationalism embedded within the modern legal form of data governance enables the exploitation of Uber drivers through (1) the erasure of the politics of data production from the legal discourse of data governance, (2) through the delinking of the legal discourses of data protection, privacy, and the human agency of the data subject from the discourse on socio-

economic exploitation in the political economy of data, and (3) through the erasure of the agency and labour of the Uber drivers as the observed, as part of the broader processes of racialised, gendered, and casteised erasure of work. In this manner through a non-representationalist countermapping of the contextualised example of Uber via the figure of the Uber driver, I have sought to illustrate that the representationalist co-production of data through law and non-law within the modern legal form is rooted in the erasure of the human agency of the observed.

CHAPTER 7

DATA AND THE ERASURE OF UNHUMAN AGENCY

"…So I draw my own picture, and invent my own grammar,
I make my own tools to fight my own battle,
For me, my people, my world, and my Adivasi self!" [1]

7.1. Entangled Human and Unhuman Agencies in Data Production

A non-representationalist countermapping can yield an account of data as multiple entangled agencies, including those of the observer and observed. In this sense, data may be understood as a lived onto-epistemological relationship. The previous Chapter has outlined such an account of data by highlighting the human agencies underlying data through the human figure of the Uber driver. Through this, it has been illustrated how the agencies of the human 'observed' are necessarily implicated in the creation of data in relationship with the 'observer' data technology controlled by Big Tech companies. The 'human' is implicated in data, however, does not exist in isolation; it is entangled with the not-human, or the 'unhuman.' In the present Chapter, I seek to unpack this claim by presenting

[1] Abhay Flavian Xaxa, 'I am not your data' (2011) <https://www.roundtableindia.co.in/i-am-not-your-data-nor-am-i-your-vote-bank-in-memoriam-sociologist-and-activist-abhay-xaxa-2> accessed 19 February 2021

a non-representationalist countermapping of data through the figure of the unhuman land.

Much like the categories of the 'observer' and the 'observed,' the categories of 'human' and 'unhuman' are not given; rather, they are created through boundary work and specific ways of subject formation across different modes of agential interactions.[2] Human or unhuman, thus, should not be understood as natural categories; but as contingently constructed.[3] In this regard, the formulation of the 'human' within the Western cultural archive in particular has been brought into question. It has been noted that the concept of 'man' or 'human' was created and deployed by the European humanists during the Renaissance continuing into the Enlightenment as an instrument of colonialism to signify the universal authority to define others not like them, without being defined in return.[4] This is understood as the process of Othering.[5] Black feminist scholar Sylvia Wynter critiques this idea of the 'human' embedded across the Western cultural archive including within contemporary academic disciplines as "*one that defines us biocentrically on the model of a natural organism, with this a priori definition serving to orient and motivate the individual and collective behaviors by means of which our contemporary Western world-system or civilization, together with its nation-state sub-units, are stably produced and reproduced. This at the same time as it ensures that we, as Western and westernized*

[2] *See* for instance, Jasbir K. Puar, "I would rather be a cyborg than a goddess': intersectionality, assemblage, and affective politics' (2012) 2(1) PhiloSOPHIA 49; Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity* (Routledge 2006)

[3] Jasbir K. Puar (ed.), 'Precarity Talk: A Virtual Roundtable with Lauren Berlant, Judith Butler, Bojana Cvejić, Isabell Lorey, Jasbir Puar, and Ana Vujanović' (2012) 56(4) TDR: The Drama Review 163, 169

[4] Ratna Kapur, 'The Citizen and the Migrant: Postcolonial anxieties, law, and the politics of exclusion/inclusion' (2007) 8(2) Theoretical Inquiries in Law 537; Walter D. 'Who Speaks for the "Human" in Human Rights' (2009) 5(1) Hispanic Issues On line: Human Rights in Latin American and Iberian Cultures 7 <https://conservancy.umn.edu/handle/11299/182855> accessed 5 July 2021

[5] *See* generally, Gayatri Chakravorty Spivak, 'The Rani of Sirmur: An Essay in Reading the Archives' (1985) 24(3) History and Theory 247; Homi K. Bhabha, The Location of Culture (Routledge 1994)

intellectuals, continue to articulate, in however radically oppositional a manner, the rules of the social order and its sanctioned theories."[6]

The overrepresentation of the cis White property-holding male in the historical construction of the 'human' within the Western cultural archive serves to manifest the human subject as a disembodied abstract agent of Enlightenment rationality even today.[7] Postcolonial, queer, and feminist literatures have used these arguments to critique contemporary human rights regimes.[8] So, for instance, it has been argued that the Universal Declaration of Human Rights employs the "*male experience as the norm, and the achievement of women's human rights is seen as relative to the rights that men have already achieved*," thus, failing to take account in practice the differences between men's and women's lived experiences.[9] The central point

[6] Sylvia Wynter, 'Unsettling the Coloniality of Being/Power/Truth/Freedom': Towards the Human, After Man, Its Overrepresentation—An Argument' (2003) 3(3) CR: The New Centennial Review 257, 270-271. *See* also Alexander G. Weheliye, *Habeas Viscus: Racialising Assemblages, Biopolitics, and Black Feminist Theories of the Human* (Duke University Press 2014)

[7] Kapur (2007), *supra* n. 4; Ngaire Naffine, 'The nature of legal personality' in Margaret Jane Davis & Ngaire Naffine (eds.), *Are Persons Property?: Legal Debates about Property and Personality* (Ashgate 2001) 69; Anna Grear, 'Legal Imaginaries and the Anthropocene: 'Of' and 'For'" (2020) 31 Law and Critique 351

[8] *See* for instance, Kapur, *supra* n. 4; Denise Ferreira da Silva, 'Towards a Critique of the Socio-Logos of Justice: The Analytics of Raciality and the Production of Universality' (2001) 7(3) Social Identities 421; Sumi Madhok, *Vernacular Rights Cultures* (CUP 2021); Eva Brems, 'Enemies or Allies? Feminism and Cultural Relativism as Dissident Voices in Human Rights Discourse' (1997) 19(1) Human Rights Quarterly 136; Wayne Morgan, 'Queering International Human Rights Law' in Carl Stychin and Didi Herman (eds.), *Law and Sexuality: The Global Arena* (University of Minnesota Press 2001) 208; Arati Rao, 'The Politics of Gender and Culture in International Human Rights Discourse' in Julie Peters and Andrea Wolper (eds.), *Women's Rights Human Rights: International Feminist Perspectives* (Routledge 1995) 167; Julie Mertus, 'The Rejection of Human Rights Framings: The Case of LGBT Advocacy in the US' (2007) 29 Human Rights Quarterly 1036; Nicole LaViolette & Sandra Whitworth, 'No Safe Haven: Sexuality as a Universal Human Right and Gay and Lesbian Activism in International Politics' (1994) 23(3) Millenium: Journal of International Studies 563. See also, Upendra Baxi, *The Future of Human Rights* (OUP 2008); José-Manuel Barreto (ed.), *Human Rights from a Third World Perspective: critique, history, and international law* (Cambridge Scholars Publishing 2013); Makau wa Mutua, 'Savages, Victims, and Saviors: The Metaphor of Human Rights (2001) 42 Harvard International Law Journal 201

[9] Laura Parisi, 'Feminist Perspectives on Human Rights' in Robert A. Denemark and Renée Marlin-Bennett (eds.), *The International Studies Encyclopaedia* (Wiley-Blackwell 2010) 24. *See* also, Sara Ahmed, *Differences That Matter: Feminist Theory and Postmodernism* (CUP 1998) 37-42

in these critiques is not to deny that rights have empowering or emancipatory potential. But rather, it is to underline that while human rights operate through a universalised subjectivity termed as 'human,' such universalisation actually veils the rational subject of European Enlightenment viz., the cis White property-holding man. And in doing so, it excludes the experiences of the Other, thus, conforming to the logic of heteronormativity and racialisation.[10] The struggle for rights then implies a quest for emancipation within cisnormative and racialised logics.

Given these contestations about what constitutes the 'human,' the distinction between human and unhuman should be understood not as obvious or given; but rather as something that is created through political boundary work. As a result, the understanding of 'human' and 'unhuman' agency needs to be problematised. Although I have deployed the term 'human' agency in the context of Uber driver, such usage needs to be understood tactically.[11] By which I mean that I use the terms 'human' and 'unhuman' in order to refer to classically *assumed* subjectivities in a particular context through the lens of the Western cultural archive. Underlying such tactical usage, the problematic of defining what constitutes human and unhuman agencies, however, does not go away. The so-called human and unhuman agencies are inherently intertwined and their boundaries fundamentally blurry in a non-representationalist account informed by the Indigenous theory-method outlined in Chapter 1.[12] This is because in contrast to

[10] *Supra*, §1.4, §3.2, §4.4. For a detailed discussion of how the racialised logics of hierarchy are reproduced in the contemporary data society, *see* Neda Atanasoski & Kalindi Vora, *Surrogate Humanity: Race, Robots, and the Politics of Technological Futures* (Duke University Press 2019)

[11] Here, I refer to the idea of tactics not as an "*absolute escape from ideology*" or an all-fixing 'solution', but rather as a "[contingent] *bag of tools*" that assists in the "*continual, careful, collective, and always partial reinscriptions of a cultural–technical situation in which we all find ourselves.*" Kavita Philip, Lilly Irani & Paul Dourish, 'Postcolonial Computing: A Tactical Survey' (2012) 37(1) Science, Technology & Human Values 3, 5

[12] *Supra*, §1.5. In this context, Indigenous knowledges, movements, and scholarship in particular have constantly engaged with the agential entanglements of the 'human' and the 'unhuman' by

the Western cultural archive, Indigenous knowledges do not assume the subject as pre-given and fully-formed prior to the exercise of agencies.

Consider for instance, the case of the Uber driver discussed in the last Chapter. As illustrated, the agency of the driver (observed) which is extracted as labour by Uber (observer) is absolutely necessary for the production of data as part of the global value chain of data. But simultaneously, nor is it the driver's agency alone which produces data in Uber's global value chain of data. The driver's agency is, in fact, intertwined with multiple other agencies, which make their activities possible and create that specific relationship of power with Uber; which can be understood as data. One such agency is that of the smartphone or the mobile device on which the driver uses the Uber app, and with which the exercise of their agency is inherently intertwined. Without the smartphone measuring the movements of the driver, for instance, the specific political configuration of the driver and Uber, which we understand as data could not be established. There are many other complex agential flows in this relationship which are beyond the scope of discussion here.[13] But what is important to remark is that there is a not-human or 'unhuman' element to the creation of data in this context; even if the boundaries of where the 'human' ends and the 'unhuman' begins may not be clearly distinguished. In many ways, the driver and smartphone act as a singular system in this scenario in order to navigate, move around the city landscape, interact with passengers and create data.[14]

invoking the idea of spirituality and spiritual relationships with the land. *See* for instance, Barbara Deloria, Kristen Foehner & Sam Scinta (eds.), *Spirit & Reason: The Vine Deloria, Jr. Reader* (Fulcrum Publishing 1999). *See* also, Brian Martin, 'Methodology is content: Indigenous approaches to research and knowledge' (2017) 49(14) Educational Philosophy and Theory 1392

[13] For an in-depth discussion on this point however, *see* for example, Heather Horst & Daniel Miller, *The Cell Phone: An Anthropology of Communication* (Routledge 2006)

[14] Noopur Raval, 'Hisaab-Kitaab in Big Data: Finding Relief from Calculative Logics' in Sandeep Mertia (ed.), *Lives of Data: Essays on Computational Cultures from India* (Institute of Network Cultures, Amsterdam 2020)

How may we then provide an account of these intertwined agencies of the unhuman and human in a non-representationalist countermapping of data? It is in this context that I deploy the term 'unhuman' tactically to unravel the figure of the smartphone to reveal the agency of the land present in the production of data. While in recent times, emerging scholarship has focused on the agency of 'posthuman' technologies, including data technologies which operate in the contemporary data society, it has failed to account for the underlying human-unhuman agential formations of data itself.[15] Additionally, given its unexamined representationalist assumptions, such literature often examines data technologies as epistemological formations at the level of deployment, without providing an account of their embodied production in real-world contexts. Against this background, it is not only necessary to shift our focus to the agencies underlying data; but also to provide a non-representationalist account, which does not fracture data along the lines of ontology and epistemology. Here, approaching the smartphone as an unhuman figure can evoke such an onto-epistemological data relationship.

Much like the Uber driver, the smartphone, however, does not exist as a given or pre-formed subject/object within the onto-epistemological data relationship; it is created and placed in the specific configuration of Uber which allows for the production of data as commodity and capital by constructing it as a resource under representationalism. Importantly, the smartphone is constructed of materials which are mined from the land and are resourced into the production

[15] *See* for instance, Mireille Hildebrandt, 'The Artificial Intelligence of European Union Law' (2020) 21(1) German Law Journal 74; Matilda Arvidsson, 'The swarm that we already are: artificially intelligent (AI) swarming 'insect drones', targeting and international humanitarian law in a posthuman ecology' (2020) 11(1) Journal of Human Rights and the Environment 114; Jannice Käll, *Converging Human and Digital Bodies. Posthumanism, Property, Law* (2017), PhD Thesis, Gothenburg University <http://hdl.handle.net/2077/52295> accessed 15 September 2021; Emily Jones, 'A Posthuman-Xenofeminist Analysis of the Discourse on Autonomous Weapons Systems and Other Killing Machines' (2018) 44(1) Australian Feminist Law Journal 93

of microchips, screens, batteries and other parts of the phone. In total, these include a hundred different minerals sourced from various regions of the Earth.[16] These include cobalt and rare earth minerals which are employed in the manufacturing of phone screen and batteries.[17] In Chapter 1, I have outlined how cobalt and rare earth mining for electronics production like smartphones has disastrous consequences for the environment.[18] If such mining is necessary for the large-scale production of data for the functioning of contemporary data economies, then one cannot responsibly exclude an account of these relationships of exploitation from the account of data.

To countermap data as an onto-epistemological relation then, it is not just the political relationship of the Uber driver with Uber which needs to be examined. The political relationships between the Uber driver, Uber, and the land that must be necessarily mined for the production of data for Uber, also need to be considered in order to provide a non-representationalist countermapping of data. The present Chapter undertakes such countermapping. In doing so, it is argued that the mined land, which is entangled with the Uber driver and indispensable for the production of data for Uber, must be understood as having agency. In this sense, the agencies of the Uber driver and the mined land are intertwined; and neither the subjectivity of the Uber driver nor that of the land appear as *a priori* subjects. To aid comprehension and ease of understanding, however, I nevertheless use the terms 'human' and 'unhuman' agencies in this nonrepresentationalist countermapping; all the while emphasising the centrality of agential entanglements and interactions instead of the centrality of the subject.

[16] United States Geological Survey, 'A World of Minerals in Your Mobile Device' (2016) 167 General Information Product <https://pubs.usgs.gov/gip/0167/gip167.pdf> accessed 27 September 2021
[17] *Ibid.*
[18] *Supra*, §1.7

As has been argued in the previous Chapters, the representationalist worldview denies the agency of the observed in the process of data production. In contrast, this Chapter proposes that *a non-representationalist countermapping of data rooted in Indigenous theory-method would apprehend data as an onto-epistemological entanglement of human and unhuman agencies*. So, for instance, while a non-representationalist countermapping would illustrate that the Uber driver (in their position as the observed) exercises agency in the production of data; it would also go further. It would contend that such agency is entangled with the unhuman agencies of the smartphone; and by extension, with that of the land.

To make this argument, I draw upon non-representationalist understandings of knowledge production and their relationship to the land within Indigenous learning and scholarship to argue that instead of being naturalised as a resource, object, and thing, the land must be acknowledged as active agent in the production of data. Following this, I illustrate how the agency of the land is appropriated within processes of data production at large scales in contemporary data economies, and thereafter erased under representationalist assumptions about data, knowledge production, and the land. The Chapter concludes by highlighting how the acknowledgement of the agency of the land within processes of data and knowledge production can enable a conceptualisation of data within data governance law that addresses the hierarchical power relations between the observer and the observed. Such a conception of data would be responsive to the environmental damage that representationalist data production entails.

7.2. The Land as Agential

The present section argues for understanding unhuman land as an animate actor at par with the human. In doing so, it challenges the representationalist worldview about the hierarchy between the observer and observed agencies. I draw upon the Indigenous cosmology of Haudenosaunee peoples as outlined by Anishinaabe and Haudenosaunee scholar Vanessa Watts, whereby she outlines the relationship of land and knowledge through the framework of 'Place-Thought.' Contrasting this entanglement of land and knowledge (and by extension, data) as Place-Thought with the representationalist assumptions which separate knowledge and the land, it is illustrated how the understanding of land as a natural resource is shaped within the Western cultural archive by erasing the agencies of the land.

Within the Western cultural archive, the land is constituted as a resource. In Chapter 2, I have outlined how data acts as a resourcing instrument under the representationalist Western cultural archive in order to create the depoliticised category of Nature which acts as a resource for human. Land needs to be understood as part of this depoliticised Nature under representationalist cultures. In such a worldview, data is created 'about' the land; and not as part of human/land relationships. Like other modes of knowledge, data, then, appears as a distinct epistemological claim which is separate from the existence of the land as an ontological claim.

It is in this context that Anishinaabe and Haudenosaunee scholar Vanessa Watts poses the concept of 'frameworks.' She notes, "*Frameworks are designs of understanding and interpretation. They are the basis for how human organise politically,*

philosophically, etc."[19] Having outlined this, she observes regarding the frameworks of the Western cultural archive, "*Frameworks in a Euro-Western sense exist in the abstract. How they are articulated in action or behaviour brings this abstraction into praxis; hence a division of epistemological/theoretical versus ontological/praxis.'*[20] This division of the epistemological and ontological constitutes a prominent feature of what I have termed representationalism in this book. Per representationalism, land as ontology is understood to be distinct from data/knowledge which constitutes the epistemological realm under the representationalist Western cultural archive or Euro-Western frameworks.

This separation of the land from data, of ontology from epistemology is also what enables the ontological hierarchy under representationalism between the observer human and the observed unhuman land. Watts notes, "*The epistemological-ontological removes the how and why out of the what. The what is left empty, ready for inscription. Epistemology has many representations: there is Science, Christianity, Eurocentricism, Marxism, communism etc. Ontology too contains many variables: do objects have an essence? What is in the world and how do its parts formulate a society? All of these concerns are by their very nature pursuits of human quandary and based on a capacity for reason. These distinct domains provide evidence that humans are assumed to be separate from the world they are in, in order to have a perception of it. This is one theoretical structure to understand the world and its constituents. It necessitates a separation of not only human and non-human, but a hierarchy of beings in terms of how beings are able to think as well.*"[21]

Representationalism, thus, allows for the recognition of the agency of the human while erasing the agency of the unhuman land. Through the creation of data or

[19] Vanessa Watts, 'Indigenous Place-Thought and Agency Amongst Humans and Non-Humans (First Woman and Sky Woman Go on a European World Tour!)' (2013) 2(1) Decolonisation, Indigeneity, Education & Society 21, 22
[20] *Ibid.*
[21] *Supra* n. 19, 24

knowledge about it, the latter is understood as a resource, without agency. The unhuman land is therefore devoid of agency in the representationalist worldview. The delinking of land from the production of knowledge, on the one hand; and the construction of the land without agency on the other together constitute the hallmark of the representationalist understanding of the relationship between knowledge and the land.[22]

By contrast, Indigenous cultures assume the land not only as animate and saturated with agency; but also as a key participant in the production of knowledge. It is in this regard that Watt outlines the framework of Place-Thought. According to Watts, "*Place-Thought is the non-distinctive space where place and thought were never separated because they never could or can be separated. Place-Thought is based upon the premise that land is alive and thinking and that humans and non-humans derive agency through the extensions of these thoughts*."[23]

Place-Thought emerges from a non-representationalist understanding of the world whereby ontology and epistemology are inherently entangled and inseparable from each other. By referencing both the ontological 'place' and the epistemological 'thought' of the representationalist Western cultural archive within an uninterrupted fabric, the framework of Place-Thought presents a radically alternative approach for apprehending processes of knowledge production. Under such an approach, knowledge and the land have never been separable from each other for one does not exist without the other.

[22] Even though 'the land' and 'knowledge' are used as separate terms here such that a relationship between them can be implied, under Indigenous non-representationalist thinking, knowledge is understood as the relationship to the land itself, and not as something which can possibly exist outside of its relationship to the land.
[23] *Supra* n. 19, 21

In other words, within the Place-Thought framework, knowledge and the land cannot be understood as distinct entities. Because of the limitations of English as of other European and settler languages, I must use separate words for the land and for knowledge, as if they are distinct entities that can be 'othered' or externalised in relationship to one another and as a result, may or may not be linked to each other. Against this background, what is radical about the Place-Thought framework is that it challenges this exact assumption of inherent distinction between the land and knowledge. In doing this, it necessarily refuses the understanding of land as commodity.

At a more fundamental level, Place-Thought rejects approaching a depoliticised resource,[24] which is so inherent to representationalist thinking across opposing sides on the spectrum of Western political thought. As Indigenous political science scholar Sandy Grande points out, "[B]*oth Marxists and capitalists view land and natural resources as commodities to be exploited, in the first instance, by capitalists for personal gain, and in the second by Marxists for the good of all.*" [25] The non-representationalist Place-Thought framework by contrast takes a third approach: It unsettles this idea of the land both as a commodity and as a depoliticised resource amongst other ways; infusing land with agency that is necessary for the production of knowledge. Here, the agency of the land, is, of course, not a

[24] I use the distinction between 'commodity' and 'resource' here in the way outlined in Chapter 4, *supra*, §4.4. This distinction I make between the two is however not the akin to that followed in Grande's work quoted here, Grande, *infra* n. 25, which seems to assume a concurrence between 'commodity' and 'resource' in a way that aligns with the sense of 'resource' I outline in Chapter 3.

[25] Sandy Grande, *Red Pedagogy: Native American Social and Political Thought* (Rowman & Littlefield 2004) 27. Given this, colonialism should be understood as not just a symptom of capitalism. Rather capitalism and the State should be understood as technologies of colonialism, developed over time to further colonial projects. Racism is then an invention of colonialism, whereby the current colonial era may be traced back to 1492, when colonial imaginary goes global. *See* in this regard, Denise Ferreira da Silva, *Toward a Global Idea of Race* (University of Minnesota Press 2007). *See* also Eve Tuck, & K. Wayne Yang, 'Decolonisation is not a metaphor' (2012) 1(1) Decolonisation: Indigeneity, Education & Society 1, 4

singularly located to one part of the land, but is a term used to point to varied and differentiated combination of agencies of all the trees, rivers, rocks, plants, fish, birds, sky, animals, etc. which constitute the land specific to any area.

It is in this context that the Indigenous relationship to the land needs to be presented; for such relationship also incurs the Indigenous 'understanding' of the land. Providing a comprehensive definition of the land here would perhaps be a superfluous task in settler self-indulgence because a definition assumes fixation of land as a static entity or even a settled concept. In this settler sense, the land has been understood as a reflection of a physical space or a specific location, which is related to the concept of space.[26] Building on this, notions of land as resource, as property, and as commodity may be and have indeed been constructed in Western law.[27] In all such definitions however, the land appears as an abstraction, which can not only be separated from the human and unhuman creatures who live upon it, but also as 'non-living' and without agency; devoid of its own specific history in the absence of human action *upon*; as opposed to *with* it.[28]

For these reasons, I refrain from attempting to define the land, and instead draw upon Indigenous scholarship which understands the land as part of fragile (and hence, unsettled and agential) relations that are context-specific. Land, in this

[26] Mishuana Goeman, 'From Place to Territories and Back Again: Centering Storied Land in the discussion of Indigenous Nation-building' (2008) 1(1) International Journal of Critical Indigenous Studies 23

[27] A discussion on the construction of land as Nature and as resource through the resourcing instrument of data is provided in Chapter 2 of this book, *supra* n. §3.2. A detailed account of such construction of land from resource to commodity and property in law is outside of the scope of this book. But for discussions engaging these aspects, *see*, Brenna Bhandar, *Colonial Lives of Property: Law, Land, and Racial Regimes of Ownership* (Duke University Press 2018); *infra* n. 88

[28] *See* on this point, Graham (2011), *infra* n. 88. *See* also Foucault's comment that Western scholars largely conceive of space as "*the dead, the fixed, the undialectical*" in Michel Foucault (Colin Gordon, ed.) (trans. Colin Gordon, Leo Marshall, John Mepham, Kate Soper), *Power/Knowledge: Selected Interviews & Other Writings 1972-1977* (Pantheon Books 1980) 70

sense, is not mere space or territory but rather is Earth-based material-spiritual agency to make meaning and generate knowledge through relationships with humans amongst others. Indigenous Kiowa writer N. Scott Momaday observes, "*I am interested in the way a man looks at a landscape and takes possession of it in his blood and brain. For this happens, I am certain, in the ordinary motion of life. None of us lives apart from the land entirely; such an isolation is unimaginable.*"[29]

Indigenous (Tonawanda Band of Seneca) scholar Mishuana Goeman echoes, "*We do not act upon a stagnant landscape, but instead are part of it. Place is created in the process of remembering and telling stories and the ability for the receiver to understand the meanings of place encapsulated in language. Key to both the spiritual and political 'aspirations' of Indigenous people are the stories and imaginative acts that are dynamic interfaces, rather than methods of claiming land as a stagnant location.*"[30] Land is thus "*more than a site upon which humans make history or* [a] *location that accumulates history*."[31] Rather, it is an active participant in the making of history and of meaning. Humans, thus, engage in conversations with the land; and on the land in a physical, social and spiritual sense.[32] This approach to the land is central in understanding its role as an agent of meaning-making and knowledge production within the Place-Thought framework.

An example of the manifestation of the Place-Thought framework is the Haudenosaunee cosmology that Watts describes in her work.[33] According to the

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29 N. Scott Momaday, 'The Man Made of Words' in Geary Hobson (ed.), *The Remembered Earth* (University of New Mexico Press 1981)

30 *Supra* n. 26, 24-25

31 *Supra* n. 26, 24

32 Mathew Wildcat, Mandee McDonald, Stephanie Irlbacher-Fox, & Glen Coulthard, 'Learning from the Land: Indigenous land-based pedagogy and decolonization' (2014) 3(3) Decolonization: Indigeneity, Education & Society I, II-III

33 Watts' work proposing the Place-Thought framework in the context of Haudenosaunee life is just one example amongst several Indigenous cosmologies of approaching the land as an active participant in the creation of history, knowledge and meaning. Other Indigneous peples around

Haudenosaunee, their land was created by the falling of the Sky Woman from a hole in the sky through clouds and air to the waters below.[34] As she was falling, birds who saw that she could not fly decided to help by lowering her slowly to the waters beneath her. The birds also told the Turtle that she must need a place to land since she had no water legs. So, the Turtle rose up from beneath the waters breaking Sky Woman's fall who landed on the Turtle's back. Together, Sky Woman and Turtle thus formed the Haudenosaunee land. In this sense, land, at its core, is a relation which exists prior to humans or human society.

Watts urges that this brief synopsis of the Haudenosaunee creation story, which often takes days to describe must not be dismissed as 'literature', mere story or myth; which remains the typical settler-colonial response to it. Rather, this narrative should be understood as a telling of the history of the animate land of Turtle Island. Formed out of the meeting of Turtle and Sky Woman, the land here is essentially their living bodies. As a result, the land is animate and sentient. It thinks, feels, desires, suffers, and has agency.[35] Watts writes, "*To be animate goes*

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the world have theorised similar conceptions of the Place-Thought framework, *see* for instance, Marisol de la Cadena, *Earth Beings: Ecologies of Practices Across Andean Worlds* (Duke University Press 2015), which details how Andean Indigenous communities summon sentient entities such as mountains, animals, and water in anti-mining protests. In this way, land is understood to be an inherent part of the creation of history, events, and knowledges, and the Nature/Culture binary exemplified by the representationalist assumptions of the Western cultural archive is challenged. Similarly, *see* also, Ram Dayal Munda, *Adi-dharam: Religious beliefs of the Adivasis of India* (adivaani 2014), detailing the land-based practices of knowledge production amongst the Indigenous peoples in eastern India.

[34] John Mohawk, *Iroquois Creation Story: John Arthur Gibson and J.N.B. Hewitt's Myth of the Earth Grasper* (Mohawk Publications 2005). *See* also *supra* n. 19, 21

[35] Here, the notion of land's agency should be contrasted with how influenced by new materialist literatures, object-oriented ontology, and posthuman theory, the idea of 'posthuman' agency is being deployed in many recent legal discussions on Artificial Intelligence and other data technologies and elsewhere: In the posthuman narrative, agency is understood purely in mechanical terms and unlike or lacking as compared to human agency. This reinforces a human-centric/anthropocentric view of the world. *See* for instance, Mireille Hildebrandt, 'The Artificial Intelligence of European Union Law' (2020) 21(1) German Law Journal 74 and others discussed in *supra* §1.4, §1.5. Indigenous conceptions of unhuman agency must be distinguished from this for it is not the kind of agency being suggested by Indigenous scholars in context of the land.

beyond being alive or acting, it is to be full of thought, desire, contemplation and will. It is the literal embodiment of the feminine, of First Woman, by which many Indigenous origin stories find their inception. When Sky Woman falls from the sky and lies on the back of a turtle, she is not only able to create land but becomes territory itself. Therefore, Place-Thought is an extension of her circumstance, desire, and communication with the water and animals — her agency. Through this communication she is able to become the basis by which all future societies will be built upon— land."[36]

In contrast to the representationalist ontology/epistemology dichotomy, within the Place-Thought framework humans and other beings erupt from this land as an extension of the Sky Woman and Turtle.[37] Watts argues that the aforementioned creation story is *not* mythological, but a historical account, which speaks to "*the common intersections of the female, animals, the spirit world, and the mineral and plant world."*[38]

The understanding of 'society' in such a framework revolves around interactions between these worlds rather than solely as interactions amongst humans. All these

Rather it is animate agency which is being suggested in the context of the land by Indigenous writers.

To be clear, my suggestion is not that the same animate concept of agency that is used by Indigenous peoples in the context of the land should be deployed in the context of AI and data technologies. Quite to the contrary, I am proposing that we examine (a) how *data* which is used to create data technologies including AI is conceptualised in law and (b) whether such conceptualisation of data underlying AI reinforces anthropocentric frameworks by erasing the agency of the land in creation of knowledge/data. For a proposal towards enacting Indigenous practices in the context of data technologies like AI, *see,* Jason Edward Lewis, Noelani Arista, Archer Pechawis, and Suzanne Kite, 'Making Kin with the Machines' (2018) Journal of Design and Science <https://doi.org/10.21428/bfafd97b> accessed 28 September 2021

[36] *Supra* n. 19, 23

[37] *Ibid.* In this context, Watts further writes, "*Human thought and action are therefore derived from a literal expression of particular places and historical events in Haudenosaunee and Anishnaabe cosmologies. The agency that place possesses can be thought of in a similar way that Western thinkers locate agency in human beings.*"

[38] *Supra* n. 19, 21

worlds are, nevertheless, rooted in the land which is alive and thinking. Further, human agencies are derived as an extension of these thoughts of the land.[39]

In the Place-Thought framework, the land's agency is thus articulated in very specific ways. Watts describes it as following:

"*In becoming land or territory,* [Sky Woman] *becomes the designator of how living beings will organise upon her. Where waters flow and pool, where mountains rise and turn into valley, all*

[39] *Supra* n. 19, 21. This proposal to understand the land through the Place-Thought framework as historical and imbued with meaning and knowledges from its own thoughtful agency even prior to the appearance of the human may appear preposterous to many Western legal scholars. This is perhaps not least because of the indebtedness of Western law to Judeo-Christian theology, which is largely anthropocentric. Following this, the development of Western Science and secularisation in recent centuries contributed to such anthropocentrism. Here, Indigenous scholar Vine Deloria points out the inherent racism/speciesism that is inherent to such an assumption about the preposterousness of the Place-Thought framework: "*One reason that scientists examine non-Western knowledge on an ad hoc basis is the persistent belief held by Western intellectuals that non-Western peoples represent an earlier stage of their own cultural evolution— often that tribal cultures represent failed efforts to understand the natural world (the Incas had wheels, why didn't they make cars?). Non-western knowledge is believed to originate from primitive efforts to explain a mysterious universe. In this view the alleged failure of primitive/tribal man to control nature mechanically is evidence of his ignorance and his inability to conceive of abstract general principles and concepts. Tribal methodologies for gathering information are believed to be 'pre-scientific' in the sense that they are pre-causal and incapable of objective symbolic thought. This belief, as we shall see, is a dreadful stereotypical reading of the knowledge of non-Western peoples, and wholly incorrect. In fact, tribal peoples are as systematic and philosophical as Western scientists in their efforts to understand the world around them. They simply use other kinds of data and have goals other than determining the mechanical functioning of things.*" Deloria *et al* (1999), *supra* n. 12, 41

The other anxiety amongst well-meaning Western (especially, Western legal) scholars about accepting a framework like the Place-Thought is that by recognising agency of unhuman, the concerns of the human and their responsibility is sidelined and/or a fatalism promoted. This anxiety operates on the plane of the fundamental dichotomies of the Western cultural archive, eg. On the assumption of Ecocentric v. Anthropocentric, Nature v. Culture etc. as binary/dichotomous categories. The Indigenous framing of the Place-Thought however does not operate with or assume these binaries typical of the Western cultural archive as well as many non-Western Settler societies, especially perhaps those influenced by Abrahamic theology. Recognition of the agency of the land in the Place-Thought framework therefore does not constitute the erasure of human agency or the abdication of corresponding human responsibility as feared by many settler societies. Rather, the opposite: It provokes deep reflection on individual and community's responsibilities in entanglements with unhuman agency of the land. As Vine Deloria notes, "*This idea that everything in the universe is alive, and that the universe itself is alive, is knowledge as useful as anything that Western science has discovered or hypothesized. When understood and made operative by serious and sensitive individuals, it is as reliable a means of making predictions as anything suggested by mathematical formulas or projected by computer programs. There are, however substantial differences in the manner in which predictions are made. Because the universe is alive, there is choice for all things and the future is always indeterminate.*" Deloria *et al* (1999), *supra* n. 12, 41. See also, on this point, Simpson (2014), *infra* n. 49

of these become demarcations of who will reside where, how they will live, and how their behaviours toward one another are determined. Scientists refer to this as ecosystems or habitats. However, if we accept the idea that all living things contain spirit, then this extends beyond complex structures within an ecosystem. It means that non-human beings choose how they reside, interact and develop relationships with other non-humans. So, all elements of nature possess agency, and this agency is not limited to innate action or causal relationships. […] *Thus, habitats and ecosystems are better understood as societies from an Indigenous point of view; meaning that they have ethical structures, inter-species treaties and agreements, and further their ability to interpret, understand and implement. Non-human beings are active members of society. Not only are they active, they also directly influence how humans organise themselves into that society."*[40]

Through such acknowledgement of the unhuman agency of the land, the Place-Thought framework thus radically challenges foundational assumptions within the Western cultural archive at several levels. Here, I would however, like to limit my discussion to highlight two pertinent implications of encountering the Place-Thought framework in the context of the modern data governance law:

First, because the Place-Thought framework recognises the full unhuman agency of the land, it fundamentally unsettles the anthropocentric assumption that something can be known solely by human agency acting upon a passive world; Place-Thought, thus, challenges and unsettles the notion whereby data, or even more broadly, knowledge can be 'discovered' or 'gathered' through human enterprise.

This has implications for the Person/Thing dichotomy in Western law and the construction of data through negotiation between the categories of legal person

[40] *Supra* n. 19, 23

or thing. As discussed in Chapters 4 and 5, within the Western cultural archive, it is the category of the legal person which is deemed to have agency to know and act upon passive elements of the world understood within the category of the legal thing. The land, in this instance, would fall under the category of the legal thing and understood to be devoid of thinking agency of its own. In addition, under this configuration, the land would be deemed relevant neither for the understanding of data under data governance law nor for the production of knowledge, in general. This is because in the anthropocentric representationalism of Western law, the land and ways of knowing —in other words, ontology and epistemology— are deemed to be distinct and separate spheres of existence, whereby the latter is enabled only by human action. It is this very assumption of modern data governance law —which separates the production of data and knowledge from the land— that the Place-Thought framework radically challenges, when it proposes understanding the land as agential; and, in fact, as the very history of agency on Earth.[41]

[41] While alien to most Western legal scholars, the idea that nature has its own agency has been increasingly recognised by feminist science studies scholars. As noted by Judith Butler, *"concept of nature has a history, and the figuring of nature as the blank and lifeless page, as that which is, as it were, always already dead, is decidedly modern, linked perhaps to the emergence of the technological means of domination"* Judith Butler, *Bodies That Matter: On the Discursive Limits of Sex* (Routledge 1996) 4, 10. See also, the comments of media scholar Jennifer Gabrys building on this: *"This natural history does not describe a commodity world operating alongside a more essential nature (where commodities, histories, and economies become naturalized); instead, it transforms nature and culture, staging their collision and revealing their shared conditions of transience. Shifting definitions of 'nature' can be identified through the different ways in which fossils have been interpreted throughout time. Fossils operate as indicators of changes in the 'interrelated conception of nature, culture, and history.' At one time, these encrusted forms might be read for proof of the Deluge; at another, they were evidence of the progress of life. From these readings it is possible to develop an understanding of nature not as an essential or original reference point but as historical matter. Nature is no longer a stable ground against which it is possible to describe the progressions of culture. Benjamin put forward a neat summation of this approach in The Arcades Project: "No historical category without its natural substance, no natural category without its historical filtration.""* Jennifer Gabrys, *Digital Rubbish: A Natural History of Electronics* (The University of Michigan Press 2011) 8-9. *See* also, Sarah Franklin, Celia Lury & Jackie Stacey, *Global Nature, Global Culture* (Sage 2000) 59; Walter Benjamin (trans. Howard Eiland & Kevin McLaughlin), *The Arcades Project* (Harvard University Press 2002) 864; Sara Ahmed, 'Orientations Matter' in Diana H. Coole & Samantha Frost (eds.), *New Materialisms: Ontology, Agency, and Politics* (Duke University Press 2010)

Unlike representationalism, Place-Thought, thus, provides the theoretical framework to account for the participation of the unhuman land in knowledge-making processes through its full (and not merely mechanical) agency shaped by the land that thinks, feels, and experiences. The 'theory' (or rather, theory-method) proposed here, however, is neither opposed to nor distinct from practice. Theory here is not solely epistemology or way of knowing abstracted from the context of its production. Rather, it is embedded in the land as Place-Thought, which does not recognise the distinction between ontology and epistemology.[42] As a result, the theoretical framework of Place-Thought offers a radically different way of experiencing knowledge. As Watts notes, "[Our] *cosmological frameworks are not an abstraction but rather a literal and animate extension of Sky Woman's and First Woman's thoughts; it is impossible to separate theory from praxis if we believe in the original historical events of Sky Woman and First Woman. So it is not that Indigenous people do not theorize, but that these complex theories are not distinct from place*."[43]

The narration of creation stories and cosmological frameworks from the lens of Place-Thought is, thus, not literature in the dominant Western sense; or mere storied words with morals or principles that have little impact on how the world actually is.[44] Rather, these stories and words are embedded in the land in a very real and physical way; and have implications for human relations with the land.

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[42] As Kwakwaka'wakw scholar Sarah Hunt has noted in their critique of the Western theorization of Indigeneity, "*Indigeneity is not just an idea. It is not just words on a screen, theorizations, discourse analysis or a series of case studies. Indigeneity is also lived, practiced, and relational. Yet Indigenous knowledge is rarely seen as legitimate on its own terms, but must be negotiated in relation to pre-established modes of inquiry. The heterogeneity of Indigenous voices and worldviews can easily become lost in efforts to under-stand Indigeneity in ways that fix Indigenous knowledge, suppressing its dynamic nature.*" Sarah Hunt, 'Ontologies of Indigeneity: the politics of embodying a concept' (2014) 21(1) cultural geographies 27, 29

[43] *Supra* n. 19, 22

[44] In her work, Watts critiques how mythologisation and literary readings have become the dominant way of reading/understanding Indigenous stories and creation stories by Settler communities especially those within the traditions of the academy/university, "*These types of historical Indigenous events (i.e. Sky Woman, the Three Sisters) are increasingly becoming not only accepted by Western frameworks of understanding, but sought after in terms of non-oppressive and provocative or interesting interfaces of accessing the real. This traces Indigenous peoples not only as epistemologically distinct but also as a*

In contrast to the representationalist understanding of knowledge and data that is embedded within modern data governance law, the Place-Thought framework proposes an embedded view of knowledge production by immersing the act of knowing in the land. As we have seen in the previous Chapters, the representationalist construction of data understands it in terms of epistemology; divorcing and abstracting it from ontological conditions of its production. Unlike such separation and abstraction, within the non-representationalist Place-Thought framework, knowledge or data is not so much a noun as a verb.

Unlike the prescription of the modern legal form of data governance, data, then, is not a given that exists in an apolitical manner as 'non-law' prior to the appearance of the 'law.' Rather knowledge —and by extension data— within the Place-Thought framework is an *act* of knowing and meaning-making, while maintaining respectful relations with the agential and animate land. Given this, the concerns of exploitation of the Earth and environmental destruction for the production of data at large scales via mobile devices and smartphones is very relevant to the conceptualisation of data; and not separate from it. This is because the unhuman agency of the land is entangled with the exercise of human agency for production of knowledge and data on the land. It is in this context of highlighting the political implications of the unhuman agency of the land that Watts writes: *"When thinking about agency with reference to Place-Thought, where can it be located? I find it in animals, in humans, in plants, in rocks, etc. How did I come to think that these different entities and beings had agency in the first place? From stories/histories. For example, an event took place, perhaps between a bear and a young woman and from this meeting an idea about a clan system came to be. Or maybe Three Sisters, named Corn, Bean and*

gateway for non-Indigenous thinkers to reimagine their world. In this, our stories are often distilled to simply that — words, principles, morals to imagine the world and imagine ourselves in the world. In reading stories this way, non-Indigenous peoples also keep control over what agency is and how it is dispersed in the hands of humans." *Supra* n. 19, 26

Squash decided to make an arrangement about how they would live together. Maybe it seems like I am telling stories but really I am commenting on two examples of historical events that took place in a particular location, at a particular time, where consciousness, thought, desire, and the imagination of all individuals is in action. In an epistemological-ontological frame, Indigenous cosmologies would be examples of a symbolic interconnectedness — an abstraction of a moral code. It would be a way in which to view the world — the basis for an epistemological stance. From a Haudenosaunee worldview, this is what happened. Further, Haudenosaunee systems, peoples, territories etc. are affected by this relationship between the Three Sisters. It is more than a lesson, a teaching, or even an historical account. Their conscious and knowing agreement directly extends to our philosophies, thoughts and actions as Haudenosaunee peoples."[45]

By recognising these far-reaching implications of unhuman agency of the land in the production of knowledge, the Place-Thought framework offers an alternative to the anthropocentrism of representationalist Western law; and its conceptualisation of data within data governance law. It does this by enabling an accounting for not just human but also unhuman agency of the land in the creation of knowledge and the production of data.

This brings me to my second point regarding the understanding of data and knowledge production as *living relationship* (and not a static artefact) negotiated by the unhuman agency of the land and the agency of humans under the Place-Thought framework. This understanding of data and knowledge production as a relationship negotiated through the agencies of humans and the land challenges the dichotomy of the observer and observed under representationalism, which characterises modern data governance law. By recognising human agency as an extension of the unhuman agency of the land, the Place-Thought framework

[45] *Supra* n. 19, 26

muddies and unsettles the distinctions between the agential observer (human) and the non-agential observed (eg. the land) that are made within the representationalist Western cultural archive. The full recognition of both human and unhuman agencies in the production of knowledge, including data, shifts the discourse of data production away from being articulated in terms of the assumed hierarchy between the observer and the observed; such recognition shifts the discourse towards acknowledgement and respect for all the entangled human and unhuman agencies involved in the process of data production.

This opens up a new field of questions while problematising the politics of data production in a manner that is not limited to the activities of the 'observer' and the 'observed.' In this sense, the unhuman agency of the land need not be understood simply as the agency of the unhuman observed; but rather as the unhuman agency that participates in multiple scenarios of data production in the digital Earth. I shall expand on how the unhuman agency of the land participates in data production in the digital Earth in the following section. For now, it is, however, crucial to note the theoretical implication of the Place-Thought framework — Place-Thought not only enables accounting for unhuman agency of the land; but also unsettles the assumption that knowledge and data production involve the participation of only the observer and the observed. Moving beyond the dichotomous observer/observed distinction, the Place-Thought framework rather encourages an accounting of the differently-situated, yet manifold entangled thought-full agencies that are implicated in data and knowledge production.

The previous Chapters have mapped how under representationalism, the hierarchy of the observer/observed relationship created through the erasure of the observed's agency enables a relationship of extraction and exploitation between the observer and the observed within processes of data production. By

contrast, the Place-Thought framework offers a non-representationalist alternative whereby multiple (unhuman and human-attributable) agencies that are not limited to that of the observer and observed are recognised and participate in the creation of data. Through such framing of data as agential relations, the extractive relationship of the observer and the observed is de-centred. This leads to the possibility of communication, reciprocity, and 'good relations' in the production of data and of knowledge in general. *Since the Place-Thought framework recognises the myriad unhuman and human agencies implicated within knowledge production in any given context, it opens up the space for questions about how to create responsible relationships and conditions for data production that account for not just human agencies but also unhuman agencies of the land.* As a result, the scholarship and discourse on Indigenous data and Indigenous data sovereignty offers a varied set of questions about obligations to marginalised communities and to the land in the context of knowing through data.[46] These include questions about how to frame reciprocal relationships with the land and its peoples as one creates knowledge with it,[47] how to communicate

[46] Maggie Walter, Tahu Kukutai, Stephanie Russo Carroll & Desi Rodriguez-Lonebear (eds.) *Indigenous Data Sovereignty and Policy* (Routledge 2020); Tahu Kukutai & John Taylor (eds.), *Indigenous Data Sovereignty: Towards an Agenda* (Australian National University Press 2016); Maggie Walter & Michelle Suina, 'Indigenous data, Indigenous methodologies, and Indigenous data sovereignty' (2019) 22(3) International Journal of Social Research Methodology 233; Stephanie Carroll Rainie, Tahu Kukutai, Maggie Walter, Oscar Luis Figueroa-Rodríguez, Jennifer Walker & Per Axelsson, 'Indigenous Data Sovereignty' in Tim Davies, Stephen B. Walker, Mor Rubinstein & Fernando Perini (eds.), *The State of Open Data: Histories and Horizons* (African Minds & International Development Research Centre 2019); Raymond Lovett, Vanessa Lee, Tahu Kukutai, Donna Cormack, Stephanie Carroll Rainie & Jennifer Walker, 'Good Data Practices for Indigenous Data Sovereignty and Governance' in Angela Daly, S. Kate Devitt & Monique Mann (eds.), *Good Data* (Institute of Network Cultures, Amsterdam 2019)

[47] For examples and concrete manifestations of such approaches which illustrate that reciprocity in Indigenous-led research comprises not just of financial reciprocity but also relational reciprocity *see*, Walter & Suina (2019), *supra* n. 46; Janelle Baker, 'Research as Reciprocity: Northern Cree Community-Based and Community-Engaged Research on Wild Food Contamination in Alberta's Oil Sands Region' (2016) 2(1) Engaging with Indigenous Communities 109, 113-114; Shawn Wilson, *Research is Ceremony: Indigenous Research Methods* (Fernwood Publishing 2008) 7; Margaret Kovach, *Indigenous Methodologies: Characteristics, Conversations, and Contexts* (University of Toronto Press 2009) 149; Linda Tuhiwai Smith, *Decolonising Methodologies: Research and Indigenous Peoples* (Zed Books 1999)

accountably with the land and its communities in the creation of knowledge,[48] how to responsibly share such knowledge,[49] and how to resist the appropriation of the land and its peoples by settler agenda that seeks to deny the sentient agency of the land in knowledge production and elsewhere.[50]

These set of questions are very different from those centred by the legal discourse of modern data governance which is steeped within the representationalist Western cultural archive. As I have illustrated in the previous Chapters, the erasure of the agency of the observed by representationalist assumptions enacted through modern data governance's legal form allows for the delinking of questions of agency and knowledge production from questions concerning the political economy of data.[51] Such delinking is implicated in the lack of responsiveness to land and labour exploitation in the production

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[48] Leanne Betasamosake Simpson, 'Land as Pedagogy: Nishnaabeg Intelligence and Rebellious Transformation' (2014) 3(3) Decolonization, Indigeneity, Education and Society 1; John Borrows, 'Outsider Education: Indigenous Law and Land-Based Learning' (2016) 33 Windsor Yearbook of Access to Justice 1; Mathew Wildcat, Mandee McDonald, Stephanie Irlbacher-Fox, & Glen Coulthard, 'Learning from the Land: Indigenous land based pedagogy and decolonization' (2014) 3(3) Decolonization: Indigeneity, Education & Society I; Janet Mawhinney, *'Giving Up the Ghost': Disrupting the (Re)Production of White Privilege in Anti-Racist Pedagogy and Organisation Change* (1998), Master Thesis, Ontario Institute for studies in Education, University of Toronto <*https://www.collectionscanada.gc.ca/obj/s4/f2/dsk2/tape15/PQDD_0008/MQ33991.pdf*> accessed 7 July 2021

[49] Walter, Kukutai et al (2020), *supra* n. 46. *See* also, Simpson on the obligation to share amongst the Nishinaabeg. She writes, "*Meaning then is derived not through content or data or even theory in a western context, which by nature is decontextualized knowledge, but through a compassionate web of interdependent relationships that are different and valuable because of that difference. Individuals carry the responsibility for generating meaning within their own lives—they carry the responsibility for engaging their minds, bodies and spirits in a practice of generating meaning. Within Nishnaabewin, I am responsible for my thoughts and ideas. I am responsible for my own interpretations and that is why you'll always hear from our Elders what appears to be them 'qualifying' their teachings with statements that position them as learners, that position their ideas as their own understandings, and place their teachings within the context of their own lived experience. This is deliberate, ethical and profoundly careful within Nishnaabewin because to do otherwise is considered arrogant and intrusive with the potential to interfere with other beings' life pathways. Although individuals have the responsibility to self-actualize within this system, intelligence in this context is not an individual's property to own; once an individual has carried a particular teaching around to the point where they can easily embody that teaching, they, then, also become responsible for sharing it according to the ethics and protocols of the system. This is primarily done by modelling the teaching or, as Elder Edna Manitowabi says, 'wearing your teachings.*"' Simpson (2014), *supra* n. 48, 11

[50] *See* generally, *supra* n. 19; Tuck & Yang (2012), *supra* n. 25, Grande (2004), *supra* n. 25

[51] *Supra*, §5.4, §6.5

processes of data. This happens even as new Western legal discourses on the political economy of data focus on the issues of distribution and access to data, assuming such data to be a depoliticised and given resource;[52] and eventually, a commodity.[53] This means that the political relations implicated in the production of data are almost entirely absent from the Western legal discourse of data governance because its representationalist assumptions enable data to be construed as an epistemological artefact that is distinct and separated from its ontological conditions of production.

The Place-Thought framework, on the other hand, allows us to centre the power relations implicated in the process of data production (and not merely distribution); while accounting for both human and unhuman agencies of the land that are implicated in such data production. In effect, it provides a more inclusive theoretical-methodological framework to make sense of the relationship of human and unhuman agencies to the political economy of data including the production of data in global value chains. Additionally, by centring questions about how to create accountable and responsible relationships between differentiated human and unhuman agencies, between the land and its peoples, Place-Thought opens up a constructive space to examine power relations in data production processes and the possibility of effective interventions by data governance law on these matters.

I propose that it is against this background of the need to create accountable relationships between unhuman and human agencies in various contexts (including that of knowledge production) that Indigenous legal systems and their

[52] *Supra*, §3.4, §4.4
[53] *Supra*, §5.2

centring of the land need to be understood.[54] Knowledge (and, by extension, data) in the Place-Thought framework is always created in relationship with the land. In effect, data (as well as knowledge) is a process, not a product. It is a living relation, not a dead artefact. Like Indigenous Michi Saagiig Nishnaabeg scholar Leanne Betasamosake Simpson observes, "*Coming to know is a mirroring or a re-enactment process where we understand Nishnaabeg epistemology to be concerned with embodied knowledge animated, collectively, and lived out in a way in which our reality, nationhood and existence is continually reborn through both time and space. This requires a union of both emotional knowledge and intellectual knowledge in a profoundly personal and intimate spiritual context. Coming to know is an intimate process, the unfolding of relationship with the spiritual world. Coming to know also requires complex, committed, consensual engagement. Relationships within Nishnaabewin are based upon the consent — the informed (honest) consent — of all beings involved. The word consensual here is key because if children learn to normalize dominance and non-consent within the context of education, then non-consent becomes a normalized part of the 'tool kit' of those who have and wield power.*"[55]

Importantly, to be accountable to the power relations between different communities of humans as well as between humans and the land, knowledge and

[54] Val Napoleon, 'Thinking about Indigenous Legal Orders' in Colleen Shepard & Kirsten Anker (eds.), *Dialogues on Human Rights and Legal Pluralism* (Springer 2012); C.F. Black, *The Land is the Source of the Law: A Dialogic Encounter with Indigenous Jurisprudence* (Routledge 2011); Val Napoleon, *Ayook: Gitksan Legal Order, Law, and Legal Theory'* (2009) PhD Thesis, University of Victoria <https://dspace.library.uvic.ca/bitstream/handle/1828/1392/napoleon%20dissertation%20April%2026-09.pdf?sequence=1> accessed 23 September 2021; John Borrows, *Freedom and Indigenous Constitutionalism* (University of Toronto Press 2016); Aaron Mills, *Miinigowiziwin: All That Has Been Given for Living Well Together—One Vision of Anishinaabe Constitutionalism* (2019) PhD Thesis, University of Victoria <http://hdl.handle.net/1828/10985> accessed 4 April 2021

[55] Simpson (2014), *supra* n. 48, 15. It should be noted here that the use of the term 'consent' in Simpson's comments is not akin to liberal conceptions of consent. The concept of Indigenous consent promulgated here may be differented from the liberal idea of consent in two key ways: One, in the liberal discourse, the ability to consent is not limited to humans, by contrast Indigenous consent includes unhuman and human entities. Second, unlike liberal consent, Indigenous modes of consent don't appear in contractual forms of binding (example, social contract), but rather are rooted in the ethics of communication and reciprocity. For a detailed discussion on how Indigenous ideas of consent may differ from liberal notions of consent, see Mills (2019), *supra* n. 54

data production (or more broadly, the act of knowing) needs to be accountable to the various unhuman and human agencies that are implicated in knowing. Unlike representationalism, such a framing enables an alternative possibility for data and knowledge production— one where they do not manifest as an extractive relationship of power between the observer and the observed.

Instead, the non-representationalist approach of Place-Thought creates an opening for imagining and reconstructing knowledge and data production as inclusive and responsible relations (or 'good relations'[56]) between different communities comprising of both unhuman and human agencies. If the ability to know by exercising human agency is only enabled by the participation of the land's agency, then humans have a responsibility to communicate with the land, ask for the land's consent, and reciprocate. As Indigenous Potawatomi scholar Robin Wall Kimmerer observes, "*Gifts from the earth or from each other establish a particular relationship, an obligation of sorts to give, to receive, and to reciprocate*."[57] This principle concerning rootedness of knowledge and life within the land; and consequently, the duty of being in a communicative and reciprocal relationship with the land lies at the heart of Indigenous legal systems.[58] In effect, such an approach disrupts the distinction between the ontological and epistemological spheres that is promoted by the representationalism of the Western cultural archive; and corollarily, by modern data governance law.

By contrast, in settler societies, the prevalence of representationalism denies the agency of the human observed as well as the unhuman land in processes of data

[56] On creating good (data) relations, see for instance, Lovett, Lee *et al* (2019), *supra* n. 46; Kukutai & Taylor (2016), *supra* n. 46; Walter & Suina (2019), *supra* n. 46. In this context, Indigenous scholar Janelle Baker has also noted, "*Individuals are not research subjects; they are people with whom we have relations.*"Baker (2016), *supra* n. 47, 120

[57] Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants* (Milkweed Editions 2015) 129. *See* also, Baker (2016), *supra* n. 47, 112

[58] Mills (2019), *supra* n. 54

and knowledge production. As a result, data is constructed as depoliticised resource within the non-law and within the law while being negotiated between the dichotomy of the legal person/thing. Such constructions of data deny its possibility as a living relation; freezing data as a commodity within the law, while obscuring the extractive power relations underlying its construction. Through such denial of data as a lived relation of knowing with the land, representationalism denies and disrupts the possibility of communication and reciprocal duties to the land which is inherent within the Place-Thought framework. It is this precise disruption of communication and reciprocity through the dispossession of the land from Indigenous peoples that Watts identifies as the imposition of violence and colonisation.[59] In the context of knowledge and data production, representationalism, thus, perpetuates colonial relations to the land; and by extension, to peoples of the land viz., Indigenous peoples who refuse to treat land as non-agential object or resource.

The non-representationalist theoretical framework of Place-Thought, thus, enables us to acknowledge the sentient agency of the land and to illuminate the colonial relations shaped by representationalism through the denial of such agency. In the following section, I seek to map how representationalist assumptions of data governance law deny the agency of the land in the context of data production in the globalised data economy today.

7.3. Erasure of the Land's Agency in Big Data Production

It should be noted that the globalised data economy of today would not be possible without the proliferation of mobile devices and electronic gadgets. Smartphones occupy a central position in this proliferation. In 2017, the OECD

[59] *Supra* n. 19, 24

estimated that a majority of its population accesses the internet through a smartphone.[60] In the data economy where Uber drivers participate, the hardware of smartphones occupies a central place in the production of data. Without the smartphone, data from the Uber driver could not be captured nor could it be transmitted to Uber's software operations.

Data and data technologies however are often divorced from the hardware on which they are operationalised. As I have argued in throughout this book, due to representationalism of the Western cultural archive, there is a tendency to understand these data as belonging to the epistemological realm; which is considered to be distinct from the ontological especially in the law and policy discourse on data governance. As a result, both data and data technologies are often considered to be ephemeral or immaterial in nature.[61]

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[60] Organisation for Economic Co-operation and Development, 'OECD Science, Technology and Industry Scoreboard 2017' (2017) <https://doi.org/10.1787/9789264268821-en> accessed 26 September 2021, 196-197. *See* also, Andy Wyckoff, 'Digital economy: Why a brighter future could be in our pocket,' (2016) OECD Yearbook <http://www.oecd.org/digital/digital-economy-a-brighter-future-could-be-in-our-pocket.htm> accessed 26 September 2021

[61] The tendency to understand data technologies are ephemeral or immaterial may be traced as a continuity in the longer history of understanding software as ephemeral. For an account of the latter, see Wendy Hui Kyong Chun, *Programmed Visions: Software and Memory* (MIT Press 2011) 3. Not only popular and industrial discourses but several prominent academic discourses have understood software (and by extension, data technologies) as immaterial. *See* for instance, so-called software 'pioneers' Goldstine & von Neumann who defined programming in the context of software as "*the technique of providing a dynamic background to control the automatic evolution of a meaning,*" thus affixing it as a meaning-making/knowledge production process removed from material relations of production and consumption, Hermann H. Goldstine & John von Neumann, 'Planning and Coding of Problems for an Electronic Computing Instrument' (1947) I(II) Report on the Mathematical and Logical Aspects of an Electronic Computing Instrument, Princeton Institute for Advanced Study 2. *See* also for instance, computer scientist Manfred Broy who describes software as "*almost intangible, generally invisible, complex, vast and difficult to comprehend,*" Manfred Broy, 'Software Engineering—From Auxiliary to Key Technology' in Manfred Broy & Ernst Denert (eds.), *Software Pioneers: Contributions to Software Engineering* (Springer 2002) 11-12; cultural theorist Adrian Mackenzie who understands software as "a neighborhood of relations" which through code and coding are "*assembled, dismantled, bundled, and dispersed within and across contexts*" Adrian Mackenzie, *Cutting Code: Software and Sociality* (Peter Lang 2006) 169; and historian of science Michael Mahoney, who notes that software is "*elusively intangible. In essence, it is the behaviour of the machines when running. It is what converts their architecture to action, and it is constructed with action in mind; the programmer aims to make something happen,*" Michael Mahoney, 'The History of

In response to this dominant understanding of data and data technologies as immaterial, work in media and software studies over the last two decades has shown that the virtual cannot be wholly understood without accounting for the material infrastructure.[62] In particular, it has emphasised that media technologies (including data technologies) cannot be understood without accounting for their material embodiment viz., the hardware. So, for instance, in their pioneering work on the politics of software, media scholar Wendy Chun has argued for understanding software and data technologies associated with it as an embodied practice that accounts for the hardware needed for its functioning.[63] Parallel to this, sociologist Jennifer Gabrys has illustrated how 'waste' used in the production of data technologies can actually provide a rich account of the material rootedness of seemingly immaterial data technologies.[64] In their work on media archaeologies, media theorist Jussi Parikka has also offered an account of how the Earth's environments (or what this Chapter terms 'the land') actively enables and hosts media as part of our cultural world;[65] challenging the Nature/Culture

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[62] In this context, data and data technologies, much like other media technologies, should be understood as part of the extractive material infrastructures that enable their production and functioning. For work which enables this conceptualisation of media and data technologies, *see*, Paula Chakravartty & Yuezi Zhao (eds.), Global Communications: Towards a Transcultural Political Economy (Rowman & Littlefield 2008); Miriam Aouragh & Paula Chakravartty, 'Infrastructures of empire: towards a critical geopolitics of media and information studies' (2016) 38 (4) Media, Culture & Society 559; Manuela Bojadžijev & Sandro Mezzadra, 'Debating Platform Capitalism' (2020) 7 Notas Y Discusiones, Soft Power. Revista euro-americana de teoría e historia del apolitical y del derecho 237; Kalindi Vora, *Life Support: Biocapital and the New History of Outsourced Labour* (University of Minnesota Press 2015); Ashwin Jacob Mathew, *Where in the World is the Internet? Locating Political Power in Internet Infrastructure* (2014), PhD Thesis, University of California Berkeley <https://www.ischool.berkeley.edu/research/publications/2014/where-world-internet-locating-political-power-internet-infrastructure> accessed 28 September 2021. Given this, the separation of the meaning-making/knowledge production processes in which data technologies are implicated and the political economic entanglements of these data technologies is itself a political move. *See* discussion in *supra,* §1.5, §1.6, §5.4, §6.5

[63] *See* generally, Chun (2011), *supra* n. 61

[64] Gabrys (2011), *supra* n. 41

[65] Jussi Parikka, *A Geology of Media* (University of Minnesota Press 2015)

dichotomy. The environmental history of computing has further been outlined, thus illustrating that computing is not an ephemeral but material activity.[66]

Across such work, the argument has been that media and computing technologies cannot be understood while divorced from their material environments. In arguing this, it has been emphasised that while data technologies should not be reduced to the hardware that operationalises them, the relevance of simultaneously accounting for the materiality of what are understood as mostly ephemeral data technologies cannot be denied.[67] As Chun remarks, "*Understanding software as a thing does not mean denigrating software or dismissing it as an ideological construction that covers the 'truth' of hardware. It means engaging its odd materialisations and visualisations closely and refusing to reduce software to codes and algorithms —readily readable objects— by grappling with its simultaneous ambiguity and specificity*."[68] In this accounting of hardware as part of media and computing technologies, I propose that the land is implicated as a central participant.

It can be useful to bring these understandings that challenge the discourse of immaterial media and computing technologies from software and media studies to the law and policy discourse on data governance in order to locate the agency of the land in the production of data today. We have seen in the previous Chapter how Uber as an algorithmically-managed data generation machine functions as a participant in the data economy to deploy data technologies like AI and machine-learning algorithms to produce data.[69] In this account I have moved away from the understanding of data as an exhaust; instead framing data as the core logic driving the digital economy. As discussed before, in this entire process of data

[66] Nathan Ensmenger, 'The Environmental History of Computing' (2018) 59(4) Technology and Culture 7
[67] Chun (2011), *supra* n. 61, 3-4
[68] Chun (2011), *supra* n. 61, 11
[69] *Supra*, §6.2, §6.3, §6.4

production, the smartphone plays a critical role. For without it, data may never be generated at the scale it is; for instance, in the Uber context. In addition to the dichotomy of the observer and the observed that is enforced by representationalism, the smartphone in its embodied hardware form is, thus, an important participant in the production of data. So, in the present section I map how the agency of the land is implicated in the production of data in the digital Earth today through the use of the smartphone. It is argued that the representationalism of modern data governance law obscures or erases this agency of the land in data production; thus, construing the land as a depoliticised resource. Within the representationalist cultural archives of settler societies, such depoliticised resourcing operationalises the exploitation of the land through the anthropocentric denial of obligations of communication, and maintenance of reciprocal relationships with the land.

In this regard, it should be noted that the land is a major participant and actor in the realisation of contemporary data economies. Without electronic products like smartphones, data production in globalised value chains of data today cannot be fathomed. Such electronic products can contain up to 60 elements which include mercury, lead, cobalt, cadmium, barium and beryllium.[70] Additionally, according to the global multistakeholder Solving the e-Waste Problem (StEP) Initiative, 44.7 million metric tonnes of electronic waste was created through the use of electronic devices in 2017,[71] which requires the participate of the land to be enforced in the context of mining and dumping activities.

[70] United Nations Environment Programme, 'Recycling—From E-Waste to Resources' (2009) Sustainable Innovation and Technology Transfer Industrial Sector Studies <https://wedocs.unep.org/handle/20.500.11822/33112> accessed 28 September 2021, 6; Marisol Sandoval, 'The Hands and Brains of Digital Culture: Arguments for an Inclusive Approach to Cultural Labour' in Eran Fisher and Christian Fuchs (eds.), *Reconsidering Value and Labour in the Digital Age* (Palgrave Macmillan 2015) 48

[71] StEP, 'Overview of e-Waste Related Information' (2015), Solving the E-Waste Problem Official Website <https://www.step-initiative.org/e-waste-challenge.html> last accessed 29 August 2021; Sandoval (2015), *supra* n. 70

In addition, the seemingly immaterial cloud computing technologies consume huge amounts of energy worldwide. In 2011, the aggregate electricity demand of cloud computing already amounted to 684 billion kWh, which is more than the annual national energy consumption of countries such as Germany, Canada or Brazil.[72] Recent studies have outlined the increasing environmental costs of data technologies like AI.[73] In their pioneering work on the social and environmental costs of developing Large Language Models in the context of natural language processing used in Generative AI, for instance, Bender, Gebru *et al* have pointed out that the development of a single model of such data technologies emits 284 tonne of carbon dioxide; while consuming as much energy as a trans-American flight.[74] Much of such energy consumption is based on non-renewable and non-carbon neutral sources.[75] Even when renewable energy sources are used, they are nevertheless still costly to the environment.[76]

Meanwhile, large data centres necessary for the operation of contemporary data technologies, which have increasing computational requirements, take away from other potential uses of both energy and land; often actively harming local

[72] Sandoval (2015), *supra* n. 70

[73] *See* for instance, Miriam Aouragh, Seda Gürses, Helen Pritchard & Femke Snelting, 'The extractive infrastructures of contact tracing apps' (2020) 1(Supplement) Journal of Environmental Media 9.1; Theodora Dryer, 'A Digital and Green Transition Series: Will Artificial Intelligence Foster or Hamper the Green New Deal?' AI Now Institute, New York, April 22, 2021 <https://medium.com/@AINowInstitute/a-digital-and-green-transition-series-will-artificial-intelligence-foster-or-hamper-the-green-new-bccbe8f779ec> accessed 28 September 2021; Helen Pritchard, Jara Rocha & Femke Snelting, 'Figurations of Timely Extraction' (2020) 4(2) Media Theory 159

[74] Emily M. Bender, Timnit Gebru, Angelina McMillan-Major & Shmargaret Shmitchell, 'On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?'(2021) FaccT '21: Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency, 610, 612

[75] *Supra* n. 74, 613

[76] David Bol, '14 million trees have been cut down in Scotland to make way for wind farms,' The Herald Scotland, 29 February 2020 <https://www.heraldscotland.com/news/18270734.14m-trees-cut-scotland-make-way-wind-farms/> accessed 29 September 2021

communities through pollution, water deprivation, and excessive energy usage.[77] These activities harness the agency of the land even further for the production of said energy and water sources. Much of the energy necessary for the operation of data technologies for the production of data as well the elements necessary for production of electronic gadgets and hardware to enable these technologies are sourced through mining and other practices exploiting the land which actively produces these elements. Through its role in the production of these minerals that are necessary for the production of data at large scales, a non-representationalist countermapping should understand the land as an active agent in the data economy today.

The agency of the land in the production of data through globalised value chains can further be illustrated by accounting for the hardware of data technologies through the ubiquitous figures of the screen as well as the microchip in the digital Earth. In her work documenting the life of technology through fossils of electronic waste, Jennifer Gabrys has described how the screen is produced as an interface which renders the sense of immateriality to data technologies, but whose production requires the exploitation of the land at various levels.[78] Similarly, the microchip, which today is indispensable for the functioning of all data technologies, including smartphones, requires resourcing of the unhuman matter of the Earth to be operationalised. In this regard, Gabrys details the process of conversion of raw silicon into microchips that are utilised for the

[77] *See, for example,* Ana Valdivia, 'The Supply Chain Capitalism of AI': a call to rethink algorithmic harms and resistance through environmental lens' (2025) 28(12) Information, Communication, Society 2118; Tung-Hui Hu, *A Prehistory of the Cloud* (MIT Press 2015); Mel Hogan, 'Data flows and water woes: The Utah Data Centre' (2015) 2(2) Big Data and Society 1; Microsoft, 'Microsoft announces one of the largest wind deals in the Netherlands with Vattenfall,' Microsoft News Center, 2 November 2017 <https://news.microsoft.com/2017/11/02/microsoft-announces-one-of-the-largest-wind-deals-in-the-netherlands-with-vattenfall/> accessed 29 September 2021

[78] Gabrys (2011), *supra* n. 41, 45-52

functioning of data technologies and mobile devices amongst other uses. She writes:

"From silicon to microchip and from microchip to underground contamination, a complex set of mutations occurs to enable the development of electronic technologies. In the process of microchip manufacture, silicon does not long remain in its raw state but is transformed from ingots of silicon into thin wafers and finally into minute electrical assemblages. These assemblages, microchips, are the hardware that facilitates the transfer of information in the form of electrical signals, or on-off signals. The transmission of information into bits, or binary units that correspond to electrical pulses, requires this composite of silicon, chemicals, metals, plastics, and energy. It would be impossible to separate the zeros and ones of information from the firing of these electrical pulses and the processed silicon through which they course. A miniature device that performs seemingly immaterial operations, the chip, in fact, requires a wealth of material inputs."[79]

Gabrys, thus, describes how the manufacture of a typical microchip relies on silicon. But the process of conversion of raw silicon into a microchip requires a complex set of material and chemical inputs even as many of these inputs are not discarded as waste as part of the process of hidden resource flows underlying mobile electronic devices like smartphones.[80] In this process, raw silicon first needs to be converted into a conducting or insulating medium. This is achieved through a process of chemical purification. The processed silicon is, then, transformed into a silicon ingot and sliced into thin wafers; the surface of which is further altered through a chemical and material procedure of insulating and coating, masking, etching, adding layers, doping, creating contacts, adding metal until the silicon wafer is rendered into the desired usable form for industrial use. This process, of course, requires huge amounts of human labour and time, which

[79] Gabrys (2011), *supra* n. 41, 24
[80] Gabrys (2011), *supra* n. 41, 26

is often extracted through gendered and migrant bodies.[81] But simultaneously, this process also requires the agency of the land, in the form of the wealth of unhuman material inputs derived through mining practices. In general, chemical, gaseous, light, and other material inputs that are generated through the agency of the land can require up to 300 phases to convert the unhuman silicon to a complete chip.[82] Many of these inputs and discarded materials into the microchip production process are toxic; and have resulted not just in health hazards to the mostly migrant women of colour who work to process it,[83] but also in the contamination of water tables and other parts of the land.[84]

Here, we may note the entanglement of the agencies of the land that makes silicon for microchips along with the agencies of the migrant women of colour who contribute to the making of these microchips; these entangled agencies are crucial to the production of data in global value chains through mobile electronic devices. As Donna Haraway has remarked, "*Out of the chip you can in fact untangle the entire planet, on which the subjects and objects are sedimented*."[85] Yet unlike the Place-Thought framework, under representationalist legal framework, there is no duty of communication with the land or a duty to maintain reciprocal relationships between human agencies and the unhuman land. In fact, under representationalism, it is a relationship of exploitation which dominates the dynamics between unhuman and human agencies in the processes of extraction from the land that are indispensable for the production of data at large and continuous scales. In effect, data evokes this exploitative relationship between the human systems of data production and the land. In the case of Uber for instance,

[81] Gabrys (2011), *supra* n. 41, 26-27
[82] Intel, 'From Sand to Circuits-Silicon Chips', Intel Inc. Official Website, 2005 <https://www.intel.com/content/www/us/en/history/museum-making-silicon.html> accessed 24 September 2021. *See* also, *supra* n. 76
[83] Gabrys (2011), *supra* n. 41, 27
[84] Gabrys (2011), *supra* n. 41, 1-2, 20-24
[85] Gabrys (2011), *supra* n. 41, 20

the production of data involves not only the extraction of the agency of the observed Uber driver as labour; but also, the exploitation of the unhuman agency of the land which creates 'raw' silicon and the gendered and racialised agencies of workers that are involved in processing it into silicon wafers for microchips.

Data, thus, appears as a set of entangled relationships of unaccountable power that cannot be limited merely to that of the observer and the observed. Instead, operationalised through the global value chains of data, these entangled relationships of hierarchical power operate at a planetary level. In contrast to the Place-Thought framework, data, under representationalism, appears as the settler enactment of colonial (as opposed to good or reciprocal) relations to the land and its people.[86] The failure to acknowledge and account for the agency of the land in data production therefore has disastrous consequences for the planet through the creation and normalisation of exploitative relations with the land.

7.4. Data Governance Law and the Land's Agency in Data Production

What is the role of modern data governance law in the failure to account for the unhuman agency of the land in data production? Relatedly, what are the implications of such erasure of the unhuman agency of the land in context of data production? Two points need to be made here.

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86 On how the settler enactment of colonial relations construes its own freedom through the subjugation of the land eg. via property as well as master/slave relations has a history entangled with the relationship of the liberal human subject with data technology and its implicit racialised Othering. Atanasoski & Vora have illuminated this connection and the centrality of racial logics to it. They provide an overview of this connection in the following manner: "*We argue that racial logics of categorisation, differentiation, incorporation, and elimination are constitutive of the very concept of technology and technological innovation. Technology thus steps into what we call a surrogate relation to human spheres of life, labor, and sociality that enables the function and differential formation and consolidation of the liberal subject—a subject whose freedom is possible only through the racial unfreedom of the surrogate. Yet there is no liberal subject outside of the surrogate-self relation through which the human, a moving target, is fixed and established. In other words, the liberal subject is an effect of the surrogate relation. The surrogate human effect, in this sense, is the racial "grammar" of technoliberalism. By grammar here we mean a symbolic order, following Hortense Spiller's use of the term, that establishes "feeling human" as a project of racial engineering.*"" Atanasoski & Vora (2019), *supra* n. 10, 5

First, that the representationalism of the modern legal form erases the unhuman agency of the land by constructing it as resource. Chapter 3 has outlined how the use of data as a resourcing instrument under the non-law of the modern legal form enables the construction of a depoliticised category of Nature that has no agency and can be exploited as a resource.[87] The land should be understood to fall under this category of Nature. In effect, this means that the land, like Nature, is understood to be devoid of agency under the representationalist modern legal form of data.

Such erasure of the land's agency implies that the land is constructed as an apolitical entity or resource. The extraction of minerals from the land is, then, considered to be an apolitical process in relation to the land. As a result, the processes of mineral extraction from the land to create data without reciprocal obligations to the land is understood simply as the use of depoliticised or natural resources *and not as the political exploitation of the land's agency*. So, for instance, the process for the manufacture of the microchip or the screen as the mere transfer of 'raw materials' into electronic hardware like smartphones, which then go on to produce data within the global value chains. Representationalism, here, casts the land as the 'raw material' or resource. Similar to the Uber drivers whose lives and deaths are treated as 'resource' for the production of data in the data economy instead of being treated as a lived relation, land is also resourced for the production of data. In other words, the land is depoliticised and rendered 'natural' by the representationalism of the modern legal form; while simultaneously being converted into a legal thing that contributes to transforming the land into a resource for human use.[88]

[87] On the twofold process of naturalisation through which data is constructed as a resource, *see, supra,* §3.4

[88] For further discussion on the politics of land as legal thing *see* Nicole Graham, *Lawscape: Property, Environment, Law* (Routledge 2011); Alain Pottage, 'Instituting Property' (1998) 18(2) Oxford Journal of Legal Studies 331; Alain Pottage, 'The Measure of Land' 53(2) Modern Law Review

Much like the erasure of the agency of the Uber driver in the process of data production, the agency of the land is, thus, erased by the representationalist modern legal form of data governance. Consequently, similar to the naturalisation of the hierarchical relationship of the Uber driver to the data generation machine that is Uber, the exploitative relationship between Uber and the land in data production processes is naturalised. But in the case of the land, this naturalisation is perhaps even more sedimented because the history of apprehending land as an apolitical resource runs older. Exploitative and hierarchical power relations through the erasure of human and unhuman agencies are operationalised here through the representationalist legal form of data governance.

The second and related avenue through which the representationalist legal form of modern data governance erases the unhuman agency of the land in the production of data is through the distinction it makes between ontological and epistemological spheres. Considered to be a part of the epistemological sphere in this arrangement, data is separated from the ontological conditions of its production; which, as we have seen, are fundamentally rooted in the land. By separating ontology and epistemology and divorcing the land from the processes of knowledge production, representationalism co-produced by the legal form of data governance results in the abstraction of data from its material origins. In contrast to the Place-Thought framework that theorises the relationship between

259. *See* also, discussion in Chapter 2 about how data is used as a resourcing instrument to convert land into a natural resource, in the process, depoliticising it, *supra* §3.2. To be clear my argument here is not so much for the recognition of the land as having legal personality, which is an entirely separate matter of discussion. No, instead my argument here tries to unravel how the acknowledgment of the land as an active participant with agency could challenge and help us reimagine our conception of data as well as serve to rethink power relations in the context of the digital Earth. Neither is this an expansionist argument seeking to argue that data governance as a field of law should govern all aspects of life including the environment. An expansionist argument would require clear assumption of distinctions between different fields of law. By contrast, in my argument in this book, I try to challenge these very assumptions.

the land and knowledge as inherently intertwined, in the representationalist legal form, data, then, appears as an abstract artefact with no direct relationship to the land. This exclusion of the land from the conceptualisation of data enables data governance law to conceal, obscure, and maintain silence over the exploitative power relations that are created with the land and which sanction violence against it through the removal of obligations and reciprocity with the land.

To be fair, it should be noted that modern law does to some extent acknowledge the exploitation of the land through the field of environmental law. Moreover, it would be a fallacy to assume that legal professionals working in the field of data governance are ignorant of the connection between large-scale environmental degradation and the demanding operations of the globalised data economy. My point, however, is that (a) in neither of these formulations is the sentient agency of land recognised; and (b) nor is the inseparable entanglement of the land's agency in the processes of *production of the data* acknowledged.

Both environmental law and data governance law understand data as a resource or commodity, which is a given rather than constructed. As a result, the accounting of environmental degradation and violence against the land is delinked from the *legal conceptualisation of data*. For under representationalism, while the Earth and the land and issues of its exploitation are deemed to fall under the ontological sphere, issues concerning data, knowledge production, data subject's agency and rights are deemed to belong to the epistemological realm. Consequently, environmental law and/or related fields of property law that deal with the land limit themselves to the governance of the ontological realm; while areas and principles of data governance law in seeking to govern data are deemed to be concerned with the epistemological realm.[89]

[89] This division is mirrored in the tendency to separate data technologies used to produce data from their hardware. The tendency to separate the data technology from its hardware is driven

One may remark that while a valid area of study, the exploitation of land has little to do with the data governance and the issues of power therein. While land may be depoliticised, naturalised and resourced for the production of mobile electronic devices, one may say that this is a process entirely separate (and separable) from the production of data and its use as a resource in the data economy.

To such objectors, it may be said that this assumption of separable processes, which are understood to be connected but nevertheless distinct is exactly a product of the representationalist separation of ontology and epistemology that we see in the Western cultural archive. And it is precisely this separation between the land and the concept of data (and by implication between ontology and epistemology) that this book seeks to critique. Under representationalism, as part of the sphere of ontology, the naturalisation and resourcing of land and the production of smartphones is treated as one process. Whereas, on the other hand, as a production of knowledge, data is seen as a part of the epistemological sphere is treated as another process. Although these processes are recognised as connected to some extent, nevertheless, they are seen as largely distinct or separable. In other words, they are not perceived to be the one and the same process. Consequently, we see in law the separation of the fields of environmental and data governance law; whereby the former purports to deal within the ontological sphere at the exploitation of the unhuman Earth, and the latter seeks to address the epistemological sphere. Such an intradisciplinary division of labour is not innocent, for it serves to hold and reinforce the

by representationalism i.e., the separation of ontology from epistemology. Under this representationalist settlement, data technologies like algorithms and AI signify knowledge-production techniques and therefore understood as epistemology, and hardware signifies the ontology, acting as the 'container' for the operationalisation of said technology. That is why in order to provide a non-representationalist account of data, it is important to not divorce data technologies like AI, Machine learning and predictive algorithms and ubiquitous computing from one of the most critical hardware they need to operate i.e., the smartphone.

representationalist separation of ontology and epistemology which characterises the Western cultural archive.

What such intradisciplinary division of labour in legal studies conceals is that the land does exercise unhuman agency in the production of data. And the ontological and epistemological are not distinct spheres that may or may not be connected but are, in fact, inherently entangled. In other words, *on the one hand, the subjugation of the unhuman agency of the land for mining to feed processes of data production within globalised value chains, and on the other, the legal construction of data which conceptualises it as an epistemological abstraction are, in fact, one and the same process.* For without the legal conceptualisation of data as an abstraction, the exploitative conditions of its production including the relentless exploitation of the land could not be unproblematically sanctioned by data governance law. In other words, the silence of the law over such exploitation of the land and its agency would be broken. The legal conceptualisation of data, thus, has a direct relationship to the exploitation of the land and its agency because, as we have seen, unlike representationalist assumptions, ontology and epistemology are not distinct realms of operation. *How we conceptualise data and how we make the intradisciplinary (along with disciplinary) division of labour through separation of legal fields are not innocent matters.* Rather, they directly create structures which enable violence and exploitation of the land.

Such intradisciplinary separation in legal studies also serves to obscure the twofold naturalisation of data.[90] While it may highlight how data is distributed unevenly as a resource within the data economy,[91] it simultaneously also serves to

[90] *Supra,* §3.4

[91] Julie E. Cohen, *Between Truth and Power: The Legal Constructions of Informational Capitalism* (Oxford University Press 2019); Salome 'Democratic Data: A Relational Theory for Data Governance' (2021, forthcoming) Yale Law Journal <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3727562> accessed 15 September 2021;

conceal how the resourcing of data is built upon a second kind of resourcing viz. the resourcing of the land. *In other words, the construction of data as an innocent, apolitical resource and commodity amongst others within the legal form of data governance is dependent upon the construction of the land as a naturalised resource.* As a result, the formulation and articulation of exploitative power relations in the data economy stays rather limited to so-called 'epistemological' concerns relating to the politics of knowledge production and its impact on human agencies.

Even when political economic concerns are recognised, they are limited to the political economy of the 'immaterial' or the epistemic, because of the sharp division between ontology and epistemology.[92] So, they will concern the political economy of, say, the knowledge industry, with a focus on monopolies, competition; and in best-case scenarios, on the resourcing of data and how data governance law in conjugation with laws of contracts and intellectual property enables it. However, because the land is deemed to lie within the sphere of ontology, the more fundamental politics of resourcing of the land are not considered to be a part of this discourse. The representationalism of the legal form of data governance, thus, separates the discourses of knowledge

Mark Andrejevic, 'Privacy, Exploitation, and the Digital Enclosure' (2009) 1(4) Amsterdam Law Forum 47; Soshana Zuboff, *The Age of Surveillance Capitalism* (Profile Books 2019); Nick Srnicek, *Platform Capitalism* (John Wiley & Sons 2016); María Soledad Segura & Silvio Waisbord, 'Between Data Capitalism and Data Citizenship' (2019) 20(4) Television & New Media 412

[92] The manifestation of representationalism in this manner is evident in the Marxist discourse on digital labour which tends to separate immaterial and material labour, identifying them as distinct categories along the lines of the Mind/Body dichotomy of the Western cultural archive. While the latter is attributed to sites like traditional factory labour, the former is related to the cultural industry etc. *See* for instance, Maurizio Lazzarato, 'Immaterial Labour' in Paolo Virno & Michael Hardt (eds.), *Radical Thought in Italy: A Potential Politics* (University of New Minnesota 2006); Christian Fuchs, *Digital Labour and Karl Marx* (Routledge 2014). An exception in this regard, however, may be seen in the Marxist-feminist literature of digital labour, which tends to acknowledge its (materially) embodied nature. *See* for instance, Kylie Jarrett, *Feminism, Labour and Digital Media: The Digital Housewife* (Routledge 2016); Noopur Raval & Paul Dourish, 'Standing Out from the Crowd: Emotional Labor, Body Labor and Temporal Labor in Ridesharing' (2016) CSCW '16: Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing 97. It is, however, debatable whether Marxist-feminist literatures also do not enact representationalism in other ways.

production and agency (eg. of the data subject, the data worker, the land etc.) from the political economy of data production. In effect, this serves to obscure and conceal the processes of *production* of data and the agency of the land, which is implicated and exploited in such data production.

7.5. Conclusion

In the present Chapter, I have mapped how the unhuman agency of the land plays an active role in the production of data within the data economy and its global value chains. Using the Indigenous Place-Thought framework proposed by Vanessa Watts, I have attempted to offer an understanding of the land as sentient and agential; and highlight corresponding Indigenous obligations to maintain communication as well as good and reciprocal relations with the land. Through this, it is argued that data needs to be understood as a lived relation that cannot be limited merely to the power dynamics between the categories of the observer and the observed; rather, it involves entangled configurations of both human and unhuman agencies beyond these two categories. Understanding the land as harbouring full agency, the Chapter has mapped how said agency is exploited in the global value chains of data through processes of mining and refining minerals for production of mobile electronic devices like smartphones that create data. These processes are exploitative because they are undertaken without communication and maintenance of good and reciprocal relations with the land; leading to large-scale labour exploitation and ecological ruin.

Through its non-representationalist countermapping, the Chapter has attempted to illuminate the role that modern data governance law plays in the exploitation of the land within the global value chain of data. Here, I have argued that representationalism of the modern legal form of data governance is significant in two senses. First, the representationalist legal form of modern data governance

erases the agency of the land in data production processes by constructing it as a depoliticised natural resource. As a result, the hierarchical and exploitative power relations between privileged human actors like Uber and the land is naturalised.

Second, the representationalist legal form of data governance contributes to the delinking of the legal discourses of knowledge production and data subject agency on the one hand from the political economy of data production on the other. This serves to conceal not just the agency of the land in data production; but the processes of production of data altogether. It is enacted through the separation of the ontological and epistemological spheres of discursive action under representationalism. Such delinking further perpetuates the unaccountable and exploitative exercise of power within the global value chains of data by enabling data governance law to obscure and remain unresponsive in the face of exploitation in the global value chains of data.

Unlike the non-representationalist Place-Thought framework that allows us to work alongside the land while centring issues of good and reciprocal relations of communication with it, representationalism reproduces colonial forms of human control and domination of the land and the Earth. This is achieved through the elevation of the human above the land by casting the former as being capable of full agency; while the latter is denied agency and constructed as a depoliticised natural resource. Such anthropocentrism feeds into the Western imperial and settler aspiration towards creating the 'Human Empire,' which has been a continuous thread in Europe since at least the 16th century.[93] As seen, through its co-production of representationalism, modern data governance law reinforces

[93] Francis Bacon, *The new Atlantis* [1626] (CUP 1990) 34-35, cited in Graham (2011), *supra* n. 88. *See* also, Peter Linebaugh & Markus Rediker, *The Many-headed Hydra: Sailors, Slaves, Commoners, and the Hidden History of the Revolutionary Atlantic* (Beacon Press 2000) 37-41, 136

this colonial-imperial agenda. In this regard, Western(ised) data governance law has much to learn from Indigenous legal theory and knowledges about the land, which clearly warn us that how we conceptualise data in law is, in fact, not neutral; but deeply political.

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Epilogue

The understanding of data as a lived relationship and as a political process has been increasingly recognised by scholars working in the humanities and in social sciences action-research. 'Raw data' is an oxymoron, it has been proclaimed.[1] Work in these fields has argued that data is never given; but is always made, produced, created, reworked, with implications for relationships of power in society.[2] Data as a concept has never been innocent, digitised data even less so. Scholars and activists —Indigenous or otherwise— working in close collaboration with marginalised communities have always understood this.[3]

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[1] Lisa Gitelman (ed.), *Raw Data is an Oxymoron* (MIT Press 2013)

[2] *Ibid.;* Rob Kitchin, *The Data Revolution: Big Data, Open Data, Data Infrastructures and Their Consequences* (Sage 2014); Geoffrey C. Bowker, *Memory Practices in the Sciences* (MIT Press 2008); Anna Lauren Hoffmann, 'Terms of inclusion: Data, Discourse, Violence' (2020) new media & society 1; Linda Tuhiwai Smith, *Decolonising Methodologies: Research and Indigenous Peoples* (Zed Books 1999); Patricia Clough, Karen Gregory *et al*, 'The Datalogical Turn' in Philipp Vannini (ed.), *Non-Representational Methodologies: Re-envisioning Research* (Routledge 2015)

[3] *See* for instance, Maggie Walter, Tahu Kukutai *et al* (eds.)*, Indigenous Data Sovereignty & Policy* (Routledge 2020); Bhuvaneshwari Raman, 'The Rhetoric of Transparency and its Reality: Transparent Territories, Opaque Power and Empowerment' (2012) 8(2) The Journal of Community Informatics; Maggie Walter & Michele Suina, 'Indigenous data, Indigenous methodologies, and Indigenous data sovereignty' (2019) 22(3) International Journal of Social Research Methodology 233; Tahu Kukutai & John Taylor, *Indigenous Data Sovereignty: Toward an Agenda* (ANU Press 2016); Michael Gurstein, 'Open Data: Empowering the Empowered or Effective Data Use for Everyone?' (2011) 16(2) First Monday; Chih-Hsing Ho & Tyng-Ruey Chuang, 'Governance of Communal Data Sharing' in Angela Daly, S. Kate Devitt & Monique Mann (eds.), *Good Data* (Institute of Network Cultures, Amsterdam 2019); Nithya V. Raman, 'Collecting data in Chennai City and the limits of openness' (2012) 8(2) Community Informatics and Open Government Data <*https://doi.org/10.15353/joci.v8i2*> accessed 20 September 2021; Tim G. Davies & Zainab Ashraf Bawa, 'The Promises and Perils of Open Government Data' (2012) 8(2) The Journal of Community Informatics 1; Solomon Benjamin, R. Bhuvaneswari, P. Rajan, and Manjunatha, 'Bhoomi: "E–governance', or, an anti–politics machine necessary to globalize Bangalore?' (2007) *CASUM–m Working Paper* <*http://casumm.files.wordpress.com/2008/09/bhoomi-e-governance.pdf*> accessed 20 September 2021; Decolonising Data Relations: On the Moral Economy of Data Sharing in Palestinian Refugee Camps' 44(3) Canadian Journal of Communication 317

Despite the existence of this excellently astute body of work that is informed by the lived experiences of marginalised communities from various geographies and walks of life, legal practitioners and scholars have struggled to bring its insights into the law on data governance. Instead, we in the legal community have often reverted to old implicit and unproblematised tropes about data as a depoliticised resource even as we shift our attention to new-fangled data technologies like AI, ubiquitous computing, machine learning and neural networks, to name a few.

As a member of the legal community, what does it mean to say that raw data is an oxymoron or that data is a lived relationship? Even as these understandings of data are increasingly accepted within critical data and algorithmic studies, their implications for modern legal theory and practice have not been so clear. This book has been an effort to remedy this gap between the law and policy work, on the one hand; and humanities scholarship and action-research on the politics of data, on the other. In doing this, it has been my attempt to centre the politics of the *production* of data in the global value chains of the data economies or the supply chains of data today. The point is that in addition to the issues of access to and/or distribution of data, coming to terms with the full implications of data as lived relationship will require the legal community to pay close attention to the power relations in production of knowledge, in general; and the production of data, in particular.

I believe this work is important and urgent, especially in a world that sees the proliferation of both problematic data technologies and the climate crisis. As legal scholars and practitioners, we cannot hope to the understand or respond to the power relations that are enacted through these new data technologies and their human, unhuman and planetary entanglements without making sense of the core conceptual assumptions which drive their appearance. At a broad level, these

are assumptions within the Western cultural archive about the nature of knowledge, and its relationship to the world. At a more immediate level, these are narratives about data, especially the narratives that modern Western law itself creates. Without apprehending these legal narratives about data, their implications, and politics, our legal and political analyses about data technologies remain sterile.

In order to apprehend these legal narratives about data and their political significance, this book has developed the analytical framework of 'representationalism' by drawing upon scholarship in the fields of Indigenous and feminist science studies. Outlining the framework of representationalism, I have alluded to three crucial assumptions that are characteristic of the Western cultural archive. First, the assumption that there exist two distinct realms —that of ontology and epistemology— which are dichotomous and distinct from each other. Like all knowledge, data, in this sense, is understood to belong to the epistemological realm. Second, the assumption that this separation of the ontological and epistemological is enacted by the dichotomy of the observer and the observed in the ontological realm. And third, the presumption that the observer exercises agency in the production of knowledge and data, whereas the observed is devoid of agency in the processes of knowledge production.

This book has mapped how the modern legal form in produces and conceals representationalism within the context of data governance. Drawing upon Christoph Menke's work, I have traced the conceptualisation of data within the modern legal form of data governance co-produced by the formal legal categories of 'non-law' and 'law,' and the relationship between them. In doing this, it has been argued that the modern legal form of data governance conceptualises data as resourcing instrument, number, and resource within the

'non-law' of data governance. On the other hand, data is negotiated between the dichotomous categories of the legal person and thing within the category of 'law' as part of data governance's legal form; and constructed as commons as well as commodity through the legal principles of Open Data, Free Flow of Data, and Data Protection. I have argued that all these narratives or conceptualisations of data are rooted within the representationalism inherent in the modern legal form of data governance.

Following this, the book has illustrated how the representationalist legal form enables the erasure of the agency of the observed in data production. It has mapped the erasure of the agency; and by the extension, the labour of the observed through the figure of the Uber driver in the contemporary data economy. I have illustrated how the Uber driver is construed as the observed; and how their agency is extracted as 'surplus' labour and converted into capital through the complex arrangements of the global value chains of data.

The argument here has been that representationalism of the modern legal form enable the silence or unresponsiveness of data governance law with regard to the hierarchical and exploitative power relations that are perpetuated between the observer and the observed. Moreover, the representationalist legal form actively enable the erasure of the agency of the observed; obscuring the (human) agency and labour of the Uber driver in the production of data within the global value chains or the supply chains of the contemporary data economy. The importance of accounting for the political relations at play in the production of data, alongside the context of distribution and access to data within the global value chains as been emphasised here. Because of representationalist assumptions of modern legal form that separate the realm of epistemology from ontology, and divorce the existence of data from the conditions of its production, such

accounting, unfortunately, is completely amiss from the legal conceptualisation of data in data governance discourses today.

The last Chapter of this book has offered an account of how the unhuman agency of the land is implicated in the production of knowledge generally, and of in the production of data in the contemporary globalised data economy particularly, by evoking the Indigenous framework of Place-Thought. In doing so, an alternative to the representationalism of the modern legal form of data governance, which constructs data as a resource or commodity, has been offered. The presentation of this alternative entails understanding data as a lived relationship that demands the obligations of communication as well as reciprocal and good relations with the land and its peoples.

Following this, it has been mapped how the representationalist legal form of data erases the agency of the unhuman land; enabling large-scale destruction of the environment for the production of data. The acknowledgement of anthropocentrism embedded in the representationalist framework of data is then necessary if we seek to combat the destruction of the land and the violation of its agency through unaccountable production of data. Such an undertaking requires humility on our part to decentre humanist and anthropocentric assumptions (that are, in any case, inherently racialised, gendered, heteronormative, Eurocentric and abled[4]) to listen and communicate with the land and develop reciprocal and good relations with it. In addition, it requires humility on our part as a legal community to acknowledge that modern law is complicit in creating exploitative relations of power in ways that often go unnoticed and unacknowledged within legal scholarship and practice.

[4] Alexander G. Weheliye, Habeas Viscus: Racialising Assemblages, Biopolitics, and Black Feminist Theories of the Human (Duke University Press 2014)

More fundamentally, a shift away from the representationalist legal form would require an acknowledgement of the full agency and sentience of the land in Western law and society instead of its erasure. This demands a radical change in our settler thinking about the relationship between the land and knowledge as well as data production. As Lakota scholar Vine Deloria, Jr. has remarked, "*Coming last, human beings were the 'younger brothers' of the other life-forms and therefore had to learn everything from these creatures. Thus, human activities resembled bird and animal behavior in many ways and brought the unity of conscious life to an objective consistency.*"[5] Such humility needs to enthuse our understanding of data as a web of lived relationships between humans and the Earth, and structure our reciprocal obligations for data's production.

In undertaking its ambitious task, the hope of this book has been to challenge and unsettle the existing law and policy discourse around data governance, which typically (a) does not attend to the politics of data production processes in digital Earth and (b) separates questions of knowledge production and data subject agency in the context of the digital and new data technologies from questions about the political economy and the data. This book has illustrated that both of these tendencies within the legal discourse of data governance are symptomatic of the representationalism of the legal form of modern data governance; and its problematic conceptualisation of data within the law. Such representationalism is, additionally, not innocent; but perpetuates inequalities in the digital Earth through the concealment and exploitation of various human and unhuman agencies (eg. that of Uber drivers and the land), which are implicated in the production of data. As a co-producer of representationalism, modern law is also complicit in perpetuating these inequalities, exploitation, and erasure.

[5] Vine Deloria, Jr., 'If You Think About It, You Will See That It Is True' in Barbara Deloria, Kristen Foehner & Sam Scinta (eds.), *Spirit & Reason: The Vine Deloria, Jr. Reader* (Fulcrum Publishing 1999) 50

Avenues for further research

Given the ubiquity and long-held internalisation of representationalism in the Western cultural archive, moving away and carving real alternatives to it within the scholarship and practice of data governance will not be an easy task. Yet it must be undertaken if we are to be effectively responsive to the call for justice against exploitation in the digital Earth; and accountable to human and unhuman agencies that participate in the production of knowledge and of data.

With such belief, this book offers some initial avenues for further research. As outlined, Indigenous knowledges and the alternative frameworks which they offer can be one rich direction for developing concrete legal and theoretical frameworks for an inclusive conceptualisation of data, which understands data as a lived relation; and accounts for all the unhuman and human agencies which participate in its creation. The framework of Place-Thought can be especially useful here, and further research in this direction towards learning from Indigenous legal theory is warranted.

Another promising area of research perhaps lies in the area of collaborative and participatory action research with gig economy workers and ridesharing drivers. Work in this area has largely emerged from the field of labour and employment law, with some intersections with privacy, data protection and algorithmic regulation; focusing largely on issues of employment status and privacy, algorithmic management, data protection and data access by gig workers in the data economy. While important, what such research also glosses over is the exploited agency of the gig economy workers underlying the production of data. To remedy this, legal scholarship needs to account for and respond to the exploitation of drivers and other gig and data economy workers as the observed; accounting for the erasure of their agencies and labour in the production of data.

In many ways, drivers working in these contexts already recognise that the stakes of their resistance are not limited to questions of privacy, data access, and protection; but also the recognition of their labour in data production.[6] Instead of trying to reduce and assimilate these stakes into established concepts of privacy, data protection rights or even rights against discrimination, the legal community then needs to actually listen to these lived experiences; undertaking the hard work of generating new legal vocabulary and language that can adequately address the hierarchical power relations implicated in the production of data. While work in the areas of data trusts, data co-operatives, and even data abolition may be useful in this regard, all of these avenues will necessarily require the problematisation of data and its representationalist legal form. Here, the most crucial takeaway of this book remains that there is nothing innocent about the legal conceptualisation, form or aesthetic of data; it is inherently political and has myriad implications concerning power relationships.

Law's representationalism and its politics of obscuring, concealment, and erasure of the observed's agency are not simple problems to tackle which can be simply 'solved' through policy changes or legal reform. Rather, any real alternative to law's representationalism will require sustained self-reflection by the legal community over a long period of time. This reflection needs to interrogate how we perceive data, beyond the contemporary distinctions of personal and non-personal data. The crucial question to ask here is what does our conceptualisation of data enable us to do, and what does it not? Change will require sustained reflection about the stakes in such conceptualisation of data; and our politics both at an individual level, and as a community.

[6] Biju Mathew, 'Magic Wands and Monkey Brains: Is Labor Ready to Lead Society in the New Struggle Over Data?' (2020) 119(2) South Atlantic Quarterly 422

With this book, I have outlined some of these stakes. The aforementioned avenues for further research are some of my limited suggestions in wake of the recognition of the politics of representationalism in the specific context of data governance law. My hope, however, is that this book generates self-interrogation amongst members of settler legal communities in Europe and beyond; building broader reflection upon the politics of law. It is hoped that the discussion undertaken here will create interest in transdisciplinary and participatory action research in the field of data governance that is informed by the lived experiences of marginalised communities in field of data governance. It would be critical to create shifts in the discourse within the legal community to account for the obscured and entangled human and unhuman agencies in data and knowledge production; shifts that recognise the political function of ostensibly innocent legal forms, grammar, or aesthetics.

Beyond Representationalism: Divinatory Play Projects

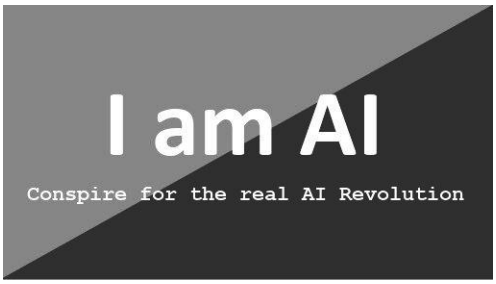
In writing this book, I have been keen to imagine the forms or aesthetics that tech and legal discourses could take in moving beyond representationalism. Here, divinatory play has emerged as a crucial exploration of one possibility of non-representationalist forms. Combining divinatory or magical elements with games, divinatory play enables critically generative imaginaries by understanding randomness as an entanglement of human and unhuman agencies. In creating the space for collaborative meaning-making between human and non-humans, randomness transforms into synchronicity; opening the space to challenge representationalism by accounting for more-than-human agencies.

To explore divinatory play in practice in the context of law and data technologies, I have been able to work alongside some amazing people to develop divinatory play projects like Bewitching Technologies and Posthuman Art Wars (supported by funding from the Economic and Social Research Council (ESRC, UK)) and I am AI (supported by funding from the Mozilla Foundation and Divij Joshi). I am sharing a little about these projects here in case they may be of interest to the readers of this book. More needs to be written about divinatory play. As an unsettling witch, I am interested in exploring divinatory play as a material-spiritual practice, alongside its potential for liberation. Information about this practice may be found on my website www.theunsettlingwitch.com/synchronicity

Bewitching Technologies (2024) is a tarot-inspired oracle card game and play environment that provokes players to rethink and unsettle the real-world impacts of computational tech like AI and the legal frameworks governing them. It takes a decolonising and queerfeminist approach that centres questions of power, inequality and justice to spark conversations and collaborations for advocacy, education, and research. The game positions computation and law in their social and political contexts, and asks players to examine their individual or collective participation and resistance against them. Resources on how to play and use the

game in community settings are provided. Explore more at www.bewitchingtechnologies.link and https://linktr.ee/bewitchingtechnologies.

Posthuman Art Wars or, P.A.W. (2025) is a tabletop roleplaying game that seeks to provoke discussions and reveal connections between artistic labour and environmental devastation in light of new digital technologies like generative AI. P.A.W. is intended primarily for artists, who are often marginalised as policy stakeholders in the governance of new digital and computational tech. It may also be useful for media, tech or legal and policy researchers and advocates, academics, philosophers, and students, or generally, to start engagements with artistic communities. Print, play, and learn more at www.pawrpg.link.



I am AI (2022) is a magical game that combines elements of roleplaying and strategy through a narrative driven by shuffling and picking cards. Taking cue from the history of science fiction and its anti-capitalist roots, the game acknowledges human and Earth labour which drives the supply chain of AI, reimagining these labouring bodies as bodies of AI. The agenda is to challenge the narrative of Machine v. Humans v. Nature. How do we remember and co-create the connections between labour struggles, robot revolutions, and "natural disasters" re-Sourced as Earth's resistance? I am AI intends to provoke these themes to birth alternate pasts-presents-futures. Its open-ended narrative bolsters the possibility of uneasy but productive solidarities. Discover more at https://linktr.ee/iamaithegame

Beyond Representationalism: Tactics of Earthy Data

In 2024, I could publish a peer-reviewed article that reflected upon the consequences of a representationalist assumption for data governance viz., the separation of the material from the epistemological. In doing so, the article proposed the imaginary of earthy data as a way to move beyond this assumption and thus, beyond representationalism. To deepen this non-representationalist imaginary of data, the article presents a set of questions for collaborative discussion that may be of interest to the readers of this book. It was published under an older name as part of a Special Issue on Data, Law, and Decolonisation in *Technology & Regulation*, and can be downloaded here: https://doi.org/10.71265/rg0jc930

Abstract

This article presents that decolonising cannot happen without acknowledging the role of land relations in constituting data and radically reconstituting what we are governing when we claim to govern 'data.' To this end, it reflects upon how the juxtaposition of the 'data colonialism' and the 'Anthropocene' discourses can be productive by highlighting their common settler colonial impulses in understanding the categories of the 'material' and the 'epistemological' as distinctive. Next, the article draws upon the Place-Thought framework proposed by Anishinaabe-Haudenosaunee scholar Vanessa Watts and others to argue that in addition to being a demand for giving land titles to Indigenous peoples, #LandBack movements should be understood as a decolonising call for realizing the seamless coherence of the material-epistemological, both outside and within Europe. The last section proposes earthy data as decolonising tactics against the settler understandings of data.