THE SILICON DOCTRINE

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Abstract

This thesis analyses what here I call as the silicon doctrine, that is, the legal-political ideology underpinning digital capitalism. The thesis flows between the theoretical and empirical analysis of contemporary socio-legal problematic related to the rise of the silicon doctrine. Drawing on the works of critical scholars from legal, political and communications studies, I provide academics and the public alike with a solid theoretical apparatus, useful to dissect and understand digital capitalism. Relying on legal, sociological and political research techniques, I have extensively scrutinised legal instruments and public and private policy documents, providing researchers with a comprehensive picture of what digital capitalism represents in political, sociological and legal terms. The thesis has been structured around three questions: What is the logic behind the criminal behaviour of digital corporations such as Google or Facebook? Which sociotechnical instruments are they using to ground and expand their dominance? What are their thoughts and future plans over user's data, workers' rights and democratic institutions and values? These research questions are unpacked and answered throughout the thesis six chapters. The thesis defends that an interdisciplinary critique of the silicon doctrine is necessary in order to grasp the complexities and social impact of contemporary digital capitalism. For instance, I analyse the private and public increasing use of algorithmic governance and surveillance technologies, and how those automated decision making technologies are reshaping the relation between capital and labour. To sum, this thesis not only outlines but demonstrates the relation between technology, capitalism and ideology through a thorough and contextualised socio-legal analysis of digital capitalism.

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The last few years have been pretty intense, which I like. One day I was in Auckland knowing no one besides Gala and Nuño, dazed and confused in a weird city, and the next I was with some of my favourite people in the world. So sudden, so abrupt, so radical. I love it. I have crossed paths with so many interesting people there, in art galleries, in punk gigs, in pseudo-raves, at the office, in the classrooms, on meetings and struggles. I lost the count of the comics I've read with my son at the Auckland Central Library, or the hikes I did with my partner Gala. I got to know what is like to be late at Whammy's and early at Campbell's office (which is as bad for your body as good for your mind). I ended up missing Wolfe Street and the James vibe surrounding it. I will never forget the first time I met the crew at Strange Haven, people with whom I've taught, fought against capitalism, partied hard and enjoyed academic discussions on endless nights of joy and friendship, as Idles says, 'Joy as an act of resistance'. This thesis is made of academic works as much as of the described above.

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Introduction

1. Whose Digital Present?

We live in a world governed by corporate algorithms about which we know little: most of the time we don't even realise their existence (Finn, 2017). They suggest to us jobs, friends and lovers, what to see, where to eat at lunch or have a drink at night. They tell us where to travel. How to get there. They remind us of birthdays and 'friendship anniversaries'. They know, even before you realise it, that you are ill or even pregnant (Pasquale, 2015). They know how sad or happy you feel. They recommend movies you will love, music to which you won't refuse to listen. They know what you want; they know your darkest desires. They were there, mute witnesses of your love declaration, your tears and your compulsive masturbation. They know about that frustrated travel, that time when you stared obsessively at that Instagram profile (Palmer, 2020). They also code and produce creative content or reply to your calls in a way that you wouldn't even notice, but above everything, they surveil you. Algorithms never rest; they work while you do the grocery shopping, while filling up on gas, when you buy a cinema ticket, when you walk, when you run. They are your guardian angel, your spy, your voyeur, your advisor, your coach, the central committee of the socialist democratic republic of yourself. Although mute, algorithms are never silent. They mutter, they suggest. They display our options. Sometimes they yell at us, other times they are stealthy as jaguars. They show you paths. They live behind every digital door at which you knock. How many of our everyday decisions, from the irrelevant to the most vital, transcendental and influential ones, have been guided by a computer programme, by a digital machine, by an algorithm? (Couldry & Mejias, 2019). This is not another *Black Mirror* episode. It is your reality, your everyday life, and it is equally disturbing.

Some people may say (and they are right) that most of the giant corporations implementing surveillance capitalism provide us with useful services (Zuboff, 2019). They facilitate tasks that, otherwise, would be either expensive or time wasting. Hence, you save money and time. Algorithms are easy to use, convenient, intuitive and precise. Google is accomplishing its purpose of making the web accessible, a curatorial labour of gigantic dimensions. In a time characterised by exile, diaspora and massive migrations, Facebook and WhatsApp allow us to keep in contact with our relatives and friends. YouTube brings us endless videos and music. Uber, Skyscanner, Skype, Instagram, all also have something to offer. They were designed to 'bring solutions' to the 'problems' in our lives. That is in the DNA of the product design ideology driving the start-up industry. It is true that apps are not yet able to solve our problems, but we have to admit that they make them more bearable.

Then, is everything fine? Do apps give without asking anything in return? Where does profitability come from? How do the tech corporations that own the apps manage to pay salaries, rents, infrastructures and research, if their services are 'free'? Apps are there for a reason and no, that reason is not to serve you. Digital corporations exist to make money, to return revenues to investors, stockholders, venture funds, banks and so on. But digital corporations are not like other corporations. Amazon is not another place to do business on the internet. It has become the market. The same applies to Google as a search engine or as mobile OS (Android), or to Facebook and its proxies (Instagram and WhatsApp) as social networks. Hence, the fancy apps populating your devices are part of the proprietary infrastructure through which digital everyday life is experienced. Although digital corporations claim the opposite, their corporate software is one of the most important platforms of capitalism (Srnicek, 2017).

This point has been discussed (and made clear) during nearly all the multiple legal disputes between companies such as Uber, Deliveroo, Glovo and their workers. Those companies violate every single

labour regulation they find. For instance, Uber is not only exploiting its workers but is also hypocritical enough to claim that its workers own the means of production. So, in the Uberworld (or the Deliverooworld), drivers/carriers are independent workers despite the evidence shown in the courtrooms of USA, Spain and France among others (Cant, 2019, Dubal, 2017a). Immaterial as they are, algorithms have become one of the most relevant aspects of digital capitalism machinery.

Digital capitalism wants to be big and powerful, but those companies don't want to know anything about Ben Parker's wisdom: 'With great power comes great responsibility' (Ziskin et al., 2002). On the contrary, under the Uber contract you will be working without security, without certainties, without protection. Precarity, endless shifts and risks on workers' shoulders. That's the new labour deal. Liberals and conservatives alike frame the problem as follows: are Uber drivers contractors or workers? But the real underlying, and utterly insulting question is: who owns the means of production, the precarised workers or powerful digital corporations? The old socialist question comes back, this time hidden by Silicon's verbiage of innovation and disruption. Who owns, and who is to own the means of production? (Marx, 2010).

Some have described the new socio-economic scenario as a new Gilded Age (Wu, 2018). And it is. Not only because we are experiencing a radical precaritisation of working conditions resembling the era of Mark Twain but because digital corporations look, smell and act like the nineteenth-century robber barons. And just as they did in the past, today they enjoy a disproportionate share of the market and are quite effective in leveraging political influence. The new robber barons' power stands on their ability to control what fuels the technological shift: data. App services offered by tech corporations are not free. There is a trader, a product, a price and a buyer. And yes, your datafied existence is one of the most precious commodities (Cohen, 2019). Your likes, your preferences, the time you spent observing that person on Tinder. Your Amazon cart, the last album you listened to on Bandcamp.

Every movement you make on the net is stored, registered somewhere, securing the data that is the basic asset fuelling the machine learning (ML) revolution. The one that soon will enable technologies such as driverless cars, predictive medicine, a new green revolution, mega-logistics or quantum computers.

All these data, processed and categorized by complex programs driven by ML, are now powerful marketing and propaganda tools. A marketing campaign, populating, inhabiting your entrails. Mobilizing you from the inside, a true total mobilisation (Ferraris, 2017). An endless commercial campaign that has become part of your life, which indeed has become your form of life. And, of course, that's only a glimpse of the complete picture. Facebook does not want to be a social network. Facebook wants to be the place in which you socialize, the place where you love others, where you learn, where you do politics, where you debate and laugh. Facebook wants to be your payment method, your passport for other apps. In fact, they've become the public sphere, the place in which every political debate takes place. For nearly 48% of 18 to 24 year olds, social media is the main source of information (Mitchel et al., 2020). Every political party, every single candidate, is present in one or another platform. Political campaigns are more likely to be disputed in cyberspace than anywhere else (Moore & Tambini, 2018). And yet, the digital arena is out of public oversight. Facebook exercises a form of sovereign power over its users and digital domains. The company is the law, and unlike the liberal paradigm, Facebook's rule of law is not written. Its users can only intuit the legal conditions of coexistence through some vague and absolutely undemocratic terms of service, and of course through its effects. Corporations are the social networks' gate keepers, threatening with it fundamental freedoms. Who else but Facebook determines in practice what hate-speech is or is not, or what is to be considered as inappropriate? The ancient art of censorship has been privatised and no one noticed. Facebook wants to dominate, just as Uber, Amazon and Google do (Stjernfelt & Lauritzen, 2020).

But surely, digital capitalism is not only about privacy or free speech. Thinking that companies such as Google or Facebook are using your data only with the purpose of making you desperate to buy their odds and ends is an error. Google and Facebook CEOs' ambitions point higher, as the Invisible Committee says: 'An enterprise that maps the planet Earth, sending its teams into every street of every one of its towns, cannot have purely commercial aims. One never maps a territory that one doesn't contemplate appropriating' (Invisible Committee, 2016, p. 105). Without vast amounts of data, it is impossible to develop or improve some of the most revolutionary technologies mentioned above. As with any other emergent religion, siliconism aspires to universality, to totality. By controlling the digital means of production, digital corporations have become de facto gatekeepers of information, communication, and, in some cases, political transformation. They own the digital present; their ambition is to own the future.

Formerly technical concepts such as algorithms or platform government have become part of the everyday life of hundreds of millions of citizens. The presence of automated decision systems in government agencies worldwide is far from being a science-fiction phenomenon. For many in the US, the UK or New Zealand, an algorithm may be the difference between getting parole, a benefit, being accepted at a college, hired at some department or being deported by an immigration officer. Corporate-state collaboration has crossed the line to an extent that is no longer easy to distinguish where the digital capitalist corporation ends and the platform state begins.

2. Purpose

Why is it so difficult for governments, courts, users, law enforcers, union organisers and hackers to distinguish competition from monopoly? Exploitation from freedom? Provision of services and security from surveillance? Transparency and democratisation from privatisation? Digital capitalism

has so suddenly taken a leading position in the redefinition of our neoliberal societies, that we've barely had time to process what was going on. We are now starting to appropriately understand the basic concepts of the new system of production: algorithms, platforms, gig work and so on. But we don't have a clear understanding of the logic moving companies such as Palantir, whose software is present in nearly every relevant police department in the US (Ferguson, 2019). We don't fully know the political consequences of cheering Twitter for fact-checking Donald Trump (Walker, 2020), or having allowed Google to dominate the mobile operating system market (EC, 2018b). What about letting algorithms make decisions for us with regards to unemployment benefits, or hiring or firing someone? (Eubanks, 2018). Or controlling the communications of billions of people? (Klossa, 2019). Yes, we now know that this is happening, but we don't politically understand the logic and the consequences behind it. And no, it is not enough to say that Uber, Airbnb or Facebook are bad, capitalist evil arch-villains. The question here is more complex. The way that we used to think about the state, rights, democracy, production, labour law, public and private sphere—that is, the common language of liberal democracies—is no longer spoken by the Silicon Valley CEOs. They know it, but they don't like it. They have their own political grammar. And most of us don't know what they are talking about.

When Mark Zuckerberg, one of the most powerful people on earth, wrote in 2012 that his way was 'The Hacker Way':

> The word "hacker" has an unfairly negative connotation from being portrayed in the media as people who break into computers. In reality, hacking just means building something quickly or testing the boundaries of what can be done. Like most things, it can be used for good or bad, but the vast majority of hackers I've met tend to be idealistic people who want to have a positive impact on the world (Zuckerberg, 2012).

most people thought something like, ‘well another awkwardness from the rich weirdo’. However, when millions realised in 2018 after the Cambridge analytic revelations, that their data, their democracies, had been hacked by the *weirdo*, they realised something: Zuckerberg really meant it. But knowing the facts does not really equate with understanding a phenomenon, it just signals its consequences. We need to go further and apprehend the rationale driving the actions of digital corporations. I am not here to illuminate the ignorance of the masses. I am too ignorant as well. Instead, what I aim here is to build a theoretical framework, a device, with which to grasp the legal and political ideas behind digital capitalism. In short, this thesis will provide readers with a map, a compass and a knife so that they can enter what I call the silicon doctrine.

3. Sociology, Law & Politics

The work that you have in your hands (or more probably in your computer) is an exploration of the multifaceted and changing reality of contemporary digital capitalism. Like its author, this thesis navigates three different disciplines: Sociology, Law and Political Science. And that is an important fact. As we are about to see, a lot has been said about digital capitalism from disciplines as different as media and cultural studies, politics, law, sociology, psychology, informatics, economics or anthropology. Discipline-specific studies are good and very useful to understand concrete aspects of social phenomenon. However, intradisciplinary research is simply not sufficient to capture and describe how complex realities (for instance, digital capitalism) operate. How could you explain Mark Zuckerberg’s (Facebook CEO) declaration before the US Congress over a data sharing scandal affecting millions of citizens in multiple jurisdictions, an event that many believe had a tremendous influence on relevant political campaigns? (UK Parliament, 2019). Or the reliance of governments and agencies on private automated decision systems in every possible field, ranging from criminal justice to agriculture, welfare or health? What about the fact that nearly eight out of ten internet

queries are mediated by one single company? (EP, 2019). Is that a competition issue, a political problem, an example of cultural hegemony, a political threat, or all of the above? Concepts such as digital sovereignty, algorithmic regulation, or gig work point at social, political and legal realities that challenge previous disciplinary debates. States and agencies around the globe had to reinvent their methods, approaches and even their mindsets in order to grasp and tackle the new problematic occasioned by the rise of the digital capitalist era. For instance, the US Federal Trade Commission has had to review the way they understand monopolies and competition after their evident failure at protecting the US market from the GAFAM (Google, Amazon, Facebook, Apple, Microsoft) (FTC, 2020). In the same vein, the EU Commission (2018a; 2018b; 2018c) has stressed Europe's weaknesses with regards to the unstoppable domination of EU's digital infrastructure by foreign corporations.

What I am defending here is that, in order to grasp and explain new realities, we should be open to ideas, methods and ways of thinking coming from adjacent fields and disciplines. For instance, as I explain in Chapter 4, in order to understand to what extent digital capitalism is reshaping work and labour, it is no longer enough to follow the latest developments on labour law, workers' struggles and political reactions, as it used to be. It is now unavoidable to know what an algorithm is, how new surveillance technologies are operating or the way companies like Uber are lobbying in jurisdictions around the world. That doesn't mean that researchers looking at digital capitalism have to embrace a postmodern, liquid methodology. What I attempt in the present thesis is to offer a solid work relying upon three disciplines: sociology, law and politics. But, why these disciplines and no other equally pertinent such as computer studies, cybernetics or statistics?

Although this thesis has to be with technology, communications and certainly with data exploitation, those are not the thesis' core research objects. As mentioned earlier, this thesis targets digital capitalism's legal-political infrastructure. The term draws on the works of Evgeny Pashukanis and Louise Althusser, and more specifically in their methodological approach to law. For Althusser 'the

law is the Ideological State Apparatus whose specific dominant function is, not to ensure the reproduction of capitalist relations of production, which it also helps ensure (in, however, subordinate fashion), but directly to ensure the functioning of capitalist relations of production.' (Althusser, p. 169). For his part, Pashukanis demonstrates how the systemic relation bounding law and politics is not neutral but ideological. For him, the legal form codifies the relations of exploitation inherent to capitalism:

> But only in bourgeois capitalist society, where the proletarian figures as a subject disposing of his labour power as a commodity, is the economic relation of exploitation mediated legally, in the form of a contract. This is linked precisely with the fact that in bourgeois society, in contrast to societies based on slavery or serfdom, the legal form attains universal significance, legal ideology becomes the ideology par excellence, and defending the class interest of the exploiters appears with ever increasing success as the defence of the abstract principle of legal subjectivity. (Pashukanis, 2003, p. 45)

Althusser and Pashukanis's heterodox interpretation of how law, politics and sociology intersect inspired me to look with a different perspective the vast and publicly available amount of legal and political documentation grounding digital economy's architecture. The results were astounding. For instance, when I started reading the cold and plain European General Data Privacy Regulation (GDPR) through the lenses of Marxist scholarly, the silent and neutral soberness of a European Union legal instrument turned into vivid loquacity and started speaking loud and clear about the EU's digital capitalist ideology. The success of that experiment showed me the potential of the interdisciplinary way, and that explains why this thesis makes use of law, politics and sociology. In some sections one prevails over the other, in others, they intersect. After all, laws materialise after political debates connected to changing social realities, I am not inventing the wheel here. I am just putting it in motion to explain how digital capitalism operates.

4. Limitations

This research has two enormous limitations that, hopefully, I will have the opportunity to deal with in further projects. Both relate with the elusive dimension of my research object: nothing more, nothing less, than the legal-political ideology underpinning digital capitalism, here baptised as the silicon doctrine. The first limitation has to do with the supply chain of digital capitalism. When does digital capitalism start, and when it ends? I am typing these lines using open-source writing software installed on a computer designed in the US, built in China out of materials brought from God knows where. I will send the draft of this thesis through my outlook web app, hence, it is uncertain where the data will be stored, probably in Virginia, US, but it might be distributed in multiple territories, maybe even different countries through blockchain technology, who knows? If I have a problem with my email account, I'll definitely make a call (I am too impatient to send an email and quietly wait for a reply). If I speak in English, it is very likely that someone in the Philippines or India will be on the other side of the line (Sallaz, 2019).

For some (Fuchs, 2014b), all of the above are tasks performed by digital labourers, thus, digital capitalism goes from the mine to my mind. While I am not in complete disagreement with Fuchs (at the end we find the monster of capitalism, no matter the substance), I have narrowed my research object. For the purpose of the present investigation, digital capitalism will be limited to the capitalist exploitative system based on a set of digital technologies such as ML, digital infrastructures such as data centres and digital platforms; and a system of accumulation based on the extraction, processing, exploitation and monetisation of data. It is irrelevant what the final use of the data will be, or if it is aggregated or not. It might be used to profile you to sell you terrible books you will love; to design a driverless car; to perfection a surveillance apparatus that will track every Mediterranean looking subject or to build the OS of the micro-quantum machine. This definition of digital capitalism is

useful to grasp companies as different as Google or Palantir, without including the labour and environmental exploitation happening at the lithium mine at the Uyuni Salt Flat in Bolivia (Sanchez-Lopez, 2019).

The second limitation relates to the intensity and the adaptive nature of digital capitalism, and the impossibility of studying every expression of it. As an illustration, the way this mode of production has been developed in China radically differs from the way it was born and raised in Silicon Valley. On this occasion I am focusing on the analysis of Western and Westernised versions of digital capitalism. Findings reflected in this analysis have to be taken cautiously when applied or compared to ongoing events in some areas of the Global South. For instance, the way digital capitalism is operating in countries such as Argentina, Chile or Colombia is, to some extent, comparable to the situation in Spain or Italy. However, digital capitalism in countries such as Turkey (implementing a soft-authoritarian version of it) (Topak, 2019) or Trinidad and Tobago (where data colonialism is the daily bread) differs slightly from the examples mentioned above (Escribano, 2019).

Still, even considering these limitations, this thesis accepts the challenge of explaining the nuts and bolts of the silicon doctrine. My intention is to provide researchers and the general public with the necessary toolbox to understand the ideological roots of companies such as Facebook, the criminal business model behind corporations like Google, the mechanism that allows digital exploiters like Uber to become the coders of the new labour law, and the reason why hackers are defining how we think about politics. Time will tell if I succeeded or not.

5. Structure of the Thesis

This thesis is divided into six chapters. Chapter 1 explores different bodies of literature looking at the rising power of digital corporations. The first part of the chapter introduces the phenomenon of digital capitalism, navigating different sociological approaches. It proceeds by addressing the difficulties of naming the phenomenon and the attention that it is gathering among politicians, academics and the general public. The second part of the chapter explores three different but complementary bodies of literature looking at tech power: the contributions of critical management studies in describing the characteristics of digital corporations, the works of critical legal scholars analysing infrastructural power enjoyed by corporations such as Facebook or Amazon (one of the essential features of digital capitalism), and two different Marxist perspectives looking at digital capitalism and its latest developments. The labour-focused Marxist contribution is mainly represented by Christian Fuchs and Trebor Scholz while the Post-Fordist approach is explored by Maurizio Lazzarato and Matteo Pasquinelli, among others.

Chapter 2 explores and theorises what is here termed the silicon doctrine, that is, the legal ideology underpinning the libertarian version of the digital economy promoted by Facebook, Uber, Apple, Amazon, Netflix and Google. The first part of the chapter explores the silicon doctrine's frankensteinian ideological roots. The second part of the chapter scrutinises three dimensions of the silicon doctrine: data extraction, domination of the informational infrastructure and labour exploitation. This chapter examines the social contract proposed by Silicon Valley, evaluating its two-sided role as a disruptive breakout from the twentieth-century social model and as a continuation of the neoliberal shock doctrine.

In the third chapter I explore what I have labelled as data crimes, that is, a specific manifestation of the crimes of digital capitalism. The chapter claims that the digital corporation business model is structured around socially harmful activities; I therefore argue that those activities should be criminalised. Through the analysis of recent actions against digital companies, I demonstrate that criminal corporations are not exceptions or deviants but that their criminal conduct is at the centre of digital capitalism's productive model.

Chapter 4 looks at the interrelation of law and relations of production in the digital age. I expose how digital capitalists are using the latest technological developments to impose a highly developed system of exploitation on their workers. Specifically, I explore a challenging new phenomenon, what I have labelled the 'legal machines'. That is, algorithms that are at the same time the means of production of the digital era and the code regulating the working conditions of labour. Building upon a critical review of classic Marxist scholars, I analyse the ways capitalism is trying to reorganise working conditions through the development of a radical change in the mode of regulation. In the first section I explore classical Marxist approaches to the question to arrive at a brief critical analysis of the Regulatory School. Then, I discuss contemporary debates around the mutations of the relation of work and capital in the Global North. The section ends with an analysis of the relation of law and code, and code and machines. The second section studies the rise of a new system of exploitation based on the intensive use of legal machines. First, I discuss what I call the 'liberal dilemma'. I outline some of the legal liberal arguments towards digital capitalists' offensive against workers' rights, exposing their strengths and weaknesses. The section ends with an exposition of how the rise of legal machines is allowing digital capitalism to rewrite the rules of work in contentious areas such as workers' rights, wages and the working day.

Chapter 5 looks at the digital capitalist theory of the state. In this chapter I try to answer the following question: What is the meaning of concepts such as state, politics, democracy, law or citizenship in a

cybernetic environment co-governed by global corporations and state governments? The text starts with a critical contextualisation of the institutional use of corporate automated decision systems, a process that accelerated during the Covid-19 pandemic. The first part of the chapter analyses the seminal work of two key digital capitalism authors: Eric Raymond and Tim O'Reilly. I explain the implications of the cybernetic understanding of politics and markets, especially with relations of two key concepts, government as a platform and algorithmic regulation. In the second part of the chapter, I establish a critique of the aforementioned authors and concepts from a variety of legal and political theorists, aiming to highlight how digital capitalism is not only threatening individuals and states but the theoretical grounds of Western liberal democracies.

The thesis ends with an open question*:* Whose digital future? Chapter 6 starts with a brief account of contemporary capitalist economic planning outlining the three most relevant models of economic planning in the digital politics arena: Silicon Valley, Chinese and European. The chapter continues by examining recent Marxist contributions on economic planning, ending with an exploration of possible social, legal and political remedies to digital capitalism.

Chapter 1 Tech Power

1. Narrowing

Many claim that the rise of digital capitalism has revolutionised relations of production, financial markets, retail business and communications (Janeway, 2018; Johannesen & Jon-Arild, 2019). It is also transforming real estate, tourism, industrial and even agricultural production (Carolan, 2019; de Graaf, 2017). The 'advantages' of such transformation are obvious. Information and knowledge have never been so accessible for the many, at least for those in the Global North. According to the European Commission, broadband internet access was used by nearly 90% of the EU's 27 households (Eurostat, 2020). Formerly sci-fi Artificial Intelligence (AI) technologies are now available on almost every new device, allowing a radical transformation in how we understand efficiency and resource management, the decentralisation of production, or the organisation of work and the role of workers in the job market (Braña, 2019).

However, the protagonists of this transformation are a handful of extraordinarily powerful companies dominating the market and enjoying a monopolistic situation in fields as different as online commerce, communications, clouding services, advertising, operating systems, or internet search, among others (van Dijck, Nieborg & Poell, 2018). Facebook and its proxies control the communications of nearly 4.1 billion people, a power never achieved by any other telecommunication company (Vaidhyanathan, 2018). Google is the main gate to the internet (and for many its epitome), controlling half of the worldwide searches. Alphabet (Google's owner) has also heavily invested in AI, venture capital, robotics, and, above all, software. Its portable Operation System (OS) Android enjoys a prominent position of privilege, for some a virtual monopoly, as it is present in 80% of the smartphones (Moore & Tambini, 2018). Amazon is not only the undisputed online retail provider; its

strategy comprehends digital analogic logistic. Its clouding services have become the material infrastructure on which other online platforms, such as Netflix, rely (Wingfield, 2017). As Rosenblat (2018) claims, Uber has not only become an important actor in the transportation industry, its influence goes further. Its conception of labour is disrupting global markets, academia and governments to the extent that the binomial notion of dependant and non-dependant worker has become suddenly obsolete (this is further explained in Chapter 4). Airbnb offers today more beds than any other hospitality chain. As successful as controversial, it has been at the epicentre of relevant political discussions in cities such as New York, Paris, Barcelona, San Francisco and Berlin (Nieuwland & Van Melik, 2020). Its business model has made necessary the re-evaluation of policies such as zoning different urban areas and the taxation of emergent business models (Brossat, 2018; Gil & Sequera, 2018).

But not only traditional industries have suffered the radical mutation. Love, friendship, influence, family, personal communications, curiosity, the care of the self, that is, the formerly aspects of life that used to remain outside the fluxes of capital, are slowly being commodified, datafied, by extractive 'capitalist platforms' such as Tinder and Instagram (Palmer, 2020; Hobbs, Owen, & Gerber, 2017; Thatcher, 2017; Rouvroy & Stiegler, 2016). As it has been pointed out by Castells (2010) and more recently by Couldry and Mejias (2019), culture, information and knowledge are at the core of the digital and informational economy inasmuch as at the heart of the so-called digital imperialism. Digital corporations control a disproportionate rate of the information that reaches Global North citizens. This has been pointed out not only by academics such as Tambini and Moore (2018) but also by the EU Commission (Klossa, 2019) or the French Government (Thieulin, 2019). This position of control between users, users' private data and users' access to information has its value, not only in terms of its monetary equivalent but as a means of political power. To mention one example for many users, Facebook is more than a 'bio narrative', it is the place where political discussion happens. It is the place where opinions on candidates take form. The electoral machinery, and, therefore, the parties'

apparatuses, have been forced to adapt to this new reality of fragmented audiences, personalized ads and an unprecedented availability of data about potential voters (Nickerson & Rogers, 2014). Facebook, the biggest and most widely used social network, allowed Cambridge Analytica, a political consultancy company, to harvest data from more than 50 million Americans. Valuable information that many believe gave Donald Trump a decisive push in the presidential elections of 2017 (Grassegger & Krogerus, 2017).

That digital platforms represent a threat to democracy is no longer a radical claim. On February 19th 2019, the UK parliament released a report on *Disinformation and 'fake news'* (UK Parliament, 2019). There, Facebook was described as a digital gangster for its corporate behaviour. In July 2019, a bipartisan commission of the US Congress questioned some of the biggest tech companies for their market power and bias as gatekeepers of communication. This is a major investigation working in tandem with other federal agencies that might end in the breakout of Facebook or Google (US House of Representatives, 2019). Likewise, the EU institutions have been involved in an increasing number of litigations with, among others, Google, Uber or Facebook.

This chapter will explore, map and classify critical authors analysing the increasing influence of digital capitalism. First, I shall explain how digital capitalism has been interpreted and labelled by social scientists. Then, I will detail how academics coming from critical management studies and critical legal studies have highlighted some of the essential aspects of this exploitative mode of production. Finally, I shall describe two of the most relevant Marxist currents analysing digital capitalism.

2. Names

Academics with different sensibilities and from different disciplines acknowledge the magnitude of the cultural, political, economic and social transformation consequence of the silicon doctrine. However, this consensus ends at the time of naming, and with it, interpreting the event. Naming, branding, defining facts and concepts are, without a doubt, a first-class political act determining how the audience perceive reality. In this way, the cluster of economic relations originated (or holding close ties with) in the digital world has been denominated as 'digital economy', 'platform economy', 'collaborative economy', 'sharing economy', 'crowded capitalism', 'surveillance capitalism', 'platform capitalism' or 'digital capitalism' among many other names (Slee, 2017; Sundararajan, 2016; Srnicek, 2017a; Zuboff, 2018). Each of these definitions holds a unique interpretation on how the technological and economic transformations are causing undeniable systemic changes and how this is reshaping the global social structures. The notion of 'surveillance capitalism', coined in 2015 by the business scholar Shoshana Zuboff but popularised in 2018 (2015, 2018), has described the new capitalistic reality as a system based on the extraction, processing, accumulation and monetisation of personal data, performed by computerised and automatized technologies. Nick Srnicek (2017a) has complemented Zuboff's contribution, rebranding the aseptic definition of 'platform economy' as 'platform capitalism'. At the centre of Srnicek's definition lies the substantial transformation of capitalism at the hands of digital corporations. Digital corporations such as Google and Amazon own the material and immaterial digital infrastructures populated by the new digital society. For Srnicek, these companies, rather than being merely actors in the digital business marketplace, have become the platforms where digital economy lives. Christian Fuchs rather uses the concept of digital capitalism to point at the integration of the so-called digital economies, within the wider frame of the global division of labour. The digital economy is, for Fuchs (2017), a dependant system, integrated with other (and traditional) capitalistic systems as the Chinese Fordist clusters such as Beijing, Shenzhen, Shanghai or Guangzhou, or the slave system of production in the

Democratic Republic of the Congo. Many others follow Dyer-Whiteford (2002) and Sadowski (2020) in highlighting the similarities of digital capitalism and the enclosure processes described by Marx (Cohen, 2019). Following Christian Fuchs (2019), the trade of critical data from millions of citizens should be read not only in terms of privacy rights, and thus private law, but as a question of political economy. As reported in the *New York Times* (2018) after an endless number of data breaches, user data misuse, fake news and political manipulation all over the world, discussions about data privacy have entered the public sphere. Frank Pasquale (2015) has extensively described the algorithm economy as the producer of a 'black box society': a system driven by opaque companies, reluctant to reveal how they manage our data, gather information and provide services that have become essential for a great majority of the population in the Global North and increasingly in the Global South.

The concept of 'digital economy' has become the preferred option by political institutions such as the European Union or its Member States. Some authors, with more passion than science, have been inclined to the concepts of 'sharing' or 'collaborative economy' (Corcho, 2017; Domenech, 2015; Sundararajan, 2016). Following with that we can find what Morozov (2013) has defined as the 'solutionist narrative'. For authors such as Sundararajan (2016), the 'collaborative or sharing economy' is the vivid expression of a conscious and humanist version of capitalism. That is, capitalism with human face. A system that places the will for communicating and sharing at the centre of its business model (Mackey & Sisodia, 2013). These narratives picture the digital economy as an economic model based on altruism, more or less the latest stage of the social economy (Vicente, Meroño & Asenjo, 2017). Under this perspective, Uber drivers would be opting out from stable jobs and rendering their services prompted by benevolent thoughts, thus, driving thousands of miles, willing to help and relieve their fellows. Airbnb landlords would be renting their rooms and houses with the selfless aim of proving the best experience to their hosts. This fantasy is presently being refuted in courts and tribunals around the world (European Commission vs. Google; United States vs. Facebook) and even by platform companies themselves, whom, in their webpages, appeal to a

greedy although chic desire. This plurality of definitions reflects the barely veiled conflict between system forces struggling to control the hegemony of the digital economy. In this thesis I have chosen the umbrella label of digital capitalism, as it encompasses most—if not all—the features of the other concepts while accurately highlights its capitalist spirit.

3. Critical Management and Legal Studies: What is New in the New Digital Corporations?

What differentiates the business model and corporate structure of highly decentralised, externalised and globalised corporations, such as Nike, from the new digital empires? Why are we talking about a new kind of corporate power, having had incredible dominant corporations such as AT&T, Standard Oil or Ford? In an enthusiastic defence of digital platforms (also an extraordinary seminal work on digital capitalism law), Orly Lobel (2016) outlined what she called the ten principles of the platform corporations: No More Waste; Tailoring the Transactional Unit; We Are All Capitalists Now; From Prêt-à-Porter to the People's Haute Couture; Access over Ownership; Less Overhead; Reduced Barriers to Entry; Pricing Precision; Dynamic Information.

For Lobel, what defines the new platform economy is the ability of digital corporations to commodify and monetise aspects and services that were previously not available in the market (such as the house's spare room or the car's vacant seat). What used to be considered as the guest room, now has been reframed by digital corporations as lost profit. They have found a whole new market niche, the private sphere. To achieve this, digital companies depend on two elements: new technologies and new social relationships with *prosumers*. The traditional distinction between producers and consumers became blurry in platforms such as Tinder, Facebook and LinkedIn. Other users' data, connections or bodies have become the appealing product to be consumed by other users, who in return have to reciprocate. The more users, the more product to offer and hence to consume. That has been called network-effect.

New technologies may have granted corporations access to a massive market at a reduced cost. But access does not mean success. Digital corporations have had to scale, as quickly as possible, in the shortest time. Although the entry barriers are reduced, so is the benefit per product. Thus, reaching a critical mass of consumers is fundamental for the platforms. One of the key elements of success for these companies is that, as opposed to the traditional model, they can offer the users dynamic prices and information in real time. The vast amount of data gathered by companies such as Amazon and Netflix allows them to offer extraordinarily accurate products, tailored to the consumers' tastes. This has a feedback effect, as satisfied users come back to the platforms providing more valuable data to the companies who are able to improve even more the products they offer. Some of the most powerful platforms on the market, such as Facebook, Uber or Airbnb, allege that they do not offer products themselves, instead they self-define as technology companies. Despite their differences, all these companies provide the basic infrastructure for prosumers to interact.

Other companies such as Netflix, Spotify and Tinder have found ways to make profit in a subscription-based model. But either as free providers or as pay-per-use services, users pay for using and consuming services, not in order to acquire goods. Of course, the well-known exception to this is Amazon, which has become not only the *online market* but also a producing firm in its own right. Although Lobel describes important elements characterising the new digital corporations, she does not offer a clear image of the elements that distinguish the Silicon Valley corporate structure from the previous model. Success means controlling and dominating a market (Culpepper & Thelen, 2019). In short, the business models of digital platforms rely upon the achievement of a dominant position in the market:

> The outsized power wielded by some platform companies in contemporary capitalism has inspired analogies to the great monopolies of yesterday, companies such as Standard Oil and U.S. Steel (Posner & Weyl, 2018; Rahman, 2018). What these analogies capture well is that, like the railroads of the 19th century,

> companies such as Google and Amazon are not just service providers in their own right. They also provide the infrastructure to which an entire economic ecosystem—consisting of myriad other businesses—is now attached (Rahman, 2018). Third-party sellers are in the meantime almost entirely reliant on Amazon (or Google shopping) to reach consumers; content creators need YouTube to monetize their videos. In this sense, traditional measures of a firm's "size" often understate platform dominance. Amazon, for example, commands a large share of the online retail market, but more importantly, it occupies a structural position that enables it to control market flows in both directions (Culpepper & Thelen, 2019, p. 294).

Small or new companies find it hard to reach the data power already in the hands of dominant corporations. Venture capitalists are also less likely to invest in companies competing in *mature* markets. Therefore, low barriers do not really exist in sectors such as search engines or communications. Another important element worth to mention is that the necessary market dominance translates into other types of power, such as political, cultural or social (Moore & Tambini, 2018). This also creates a feedback loop: the more the political power held by a corporation, the fewer legal or social barriers to dominate a market such company will find.

In a remarkable paper, Rahman and Thelen (2019) have offered a succinct and clear study detailing the characteristics of what they have called twenty-first-century capitalism. Their study analyses the managerial model (1950-1980), the network of contracts firm (1980-2010) and the contemporary platform business model (2010-present). The managerial model of the consolidated firm was based on four elements: dispersed shareholders with little influence over corporate governance; concentrated authority in managers and executives; vast working force mostly unionised; and legal landscape promoting welfare and antitrust regulation. This resulted in a capitalist model in which the interests of workers and managers were aligned. Large companies covering many segments of the supply chain with a huge payroll of dependent workers. This model was replaced by the neoliberal revolution of the 1980s. Speculative financial capital burst into the productive sector, demanding greater profitability and lower costs. The managers' influence over companies' decisions was reduced,

subjected to the investors' control in what was named the shareholders revolution. Investors abandoned the previous long-term corporate strategies, based on the alliance of capital and labour, to embrace a business model seeking short-term investment returns. An investing strategy defined by the authors as impatient capital. Flagship firms outsourced and delocalised production, cut their staff and kept only upstream aspects of the supply chain such as marketing or design. The network of contracts firm relies on a complex set of relations between firms, distributors, providers and manufactures.

According to Rahman and Thelen, the current model develops the network of contracts firm model with elements of the managerial corporation style of leadership. From the traditional corporate firms, digital corporations take the concentrated leadership based on strong and personalist CEOs. Digital corporations use and optimise the decentralised, outsourced and globalised structure of the network of contracts firm. One of the disadvantages of the network of contracts firm was their weak control over outsourced downstream production. Nike has little or nearly no control over the labour process of their manufactures in Thailand. Whereas, thanks to the advancement of technology, independent Uber drivers are surveilled, controlled and evaluated every second of their work time (Rosenblat, 2018). As opposed to the traditional corporation, the strong leadership of the new model does not stand on the pacification and co-optation of labour though salary rises but in the intimate relations of investors and the CEO. Venture capital funds have understood that, in order to grow, digital corporations need to dominate, to achieve a central position in the market. That requires long-term strategies, constant influx of funding and probably no benefits in the short term. In other words, digital corporations such as Uber or Amazon operating in red or with almost no benefits are receiving an unprecedented amount of funding from investors in order to become monopolies (Moazed & Johnson, 2016). New digital corporations aim not only to be successful globalised companies but to become the critical infrastructure of everyday life. As it happened with Facebook becoming the online communications monopoly, with Amazon turning to be the internet shop, or with Google, now the

gate to information among other things. That's the spirit of contemporary platform capitalism: infrastructural domination.

For Thelen and Rahman the reason why these companies have emerged in the United States and not elsewhere responds to the particular configuration of the US' legal and political landscape. Unlike the EU with its overarching regulations, agencies and wide-scope policies, US digital and data legislation is fragmented, scattered among multiple legal instruments. There, federal, state and even local governments have authority over critical aspects of the new digital platforms such as privacy, labour, housing or competition. This legal and political fragmentation has been instrumentalised by digital corporations. Uber and Airbnb have acted knowing that they were breaking the law pursuing market domination. Given the scale of the violation, the characteristics of new technologies and the unbalanced power relations between giant corporations and local authorities, regulations were poorly or not enforced. This would have been inconceivable if the companies wouldn't have the users' enthusiastic support. Digital corporations have established unmediated close ties with their users, they are present in their lives, are part of their routines. Digital corporations have presented themselves as liberators. Fresh air in dysfunctional or/and allegedly overpriced industries such as the taxi or hospitality. Companies like Uber or Airbnb have instrumentalised this intense relation with their users mobilizing them towards the achievement of a more permissive legislation (Thelen, 2018).

Scholars from disciplines as different as media, culture studies, politics, economics and law have pointed out that the digital corporations' defining feature is their monopolist control over the backbone of modern political economy, or, in other words, the infrastructure.

> The power of platform firms is thus not just anchored in the investors behind them; it derives as well from the way network effects allow the firms to secure concentrated "infrastructural power" that enables other

> forms of rent and revenue generation. This market dominance very much echoes classic concerns of monopoly power from a previous era. But today's platform giants exercise monopoly control without the burden and responsibilities of direct ownership. In contrast to the classic model of the vertically or horizontally integrated monopolistic firm that achieves and maintains its power through mechanisms of ownership or acquisition, the platform firms—although often built through mergers and acquisitions as well—exercise market power by con-trolling other participants on either side of the platform. Thus, for example, Uber can dominate both drivers and riders and set the terms for both sets of users that make up the market. Similarly, Amazon's retail platform structures and monetizes the interactions of vast numbers of consumers and sellers (Rahman & Thelen, 2019, pp. 184-185).

The concept of infrastructure has been recently defined by Sabeel Rahman (2018) and Lina Khan (2018) after a reinterpretation of Louis Brandeis' works (and acts) on antitrust. Brandeis was a US Supreme Court Justice. During the Wilson presidency (1913-1921), Brandeis helped to shape a new set of antitrust regulations that put an end to the Gilded Age monopolist corporations, modelling a progressive regulatory framework in where public interest was put above private corporations' wills. Following Brandeis, Khan and Rahman have described the current situation as a problem of private dominance over critical assets. In their opinion, public institutions should assure 'social control over vital industries that provided foundational goods and services on which the rest of society depended.' (Rahman, 2018, p. 1639). Both Khan and Rahman recognize three fundamental features of infrastructural power. Khan proposes gatekeeper power, leveraging power and informational exploitation. Rahman outlines gatekeeping power, transmission power and scoring power. The first feature, gatekeeping power, is shared by both—as well as by other relevant authors such as Lynskey (2019). Khan and Rahman describe gatekeeper power as digital platforms' control over the arteries of contemporary commerce and communication flows. Digital corporations are not just players in the game, they have become (or wish to become) the platform or infrastructure in which the game is played. What does this really mean? The internet is the meta-platform where these corporations operate. A cybernetic linkage of wires and CPUs. Digital corporations are enclosing the

Internet Commons and building walled gardens labelled as community, intimacy and ridesharing (among others). They are not selling programming languages or code (the tools that build websites). What they want is market dominance. The second feature of the infrastructural power described by Khan is the leveraging power: 'The source of this power is the fact that the platforms not only serve as critical infrastructure but are also integrated across markets. This enables a platform to leverage its platform dominance to establish an advantageous position in a separate or ancillary market' (Khan, 2018a, p. 328).

Given the horizontal integration of platforms and their dominance over different business sectors, they can use information obtained in a particular business for their benefit in other sectors where they are not only the board but also players. Google was recently sanctioned in Europe (€2.42 billions) for this precise reason (Commission v. Google, 2018). Google manipulated its Google shopping algorithm in order to push up its products above the results of its competitors. As stated by the European Commission:

> (9) The Decision concludes that Google commits an abuse in the relevant markets for general search services in the EEA by positioning and displaying more favourably, in its general search results pages, its own comparison shopping service compared to competing comparison shopping services.
>
> (10) Google's conduct is abusive because it: (i) diverts traffic away from competing comparison shopping services to Google's own comparison shopping service, in the sense that it decreases traffic from Google's general results pages to competing comparison shopping services and increases traffic from Google's general search results pages to Google's own comparison shopping service; and (ii) is capable of having, or likely to have, anti-competitive effects in the national markets for comparison shopping services and general search services (Commission v. Google, par. 3. 9-10).

The third manifestation of this power is defined as informational exploitation. Khan argues that digital corporations control the data flowing on their infrastructures, providing them with a significant advantage over users, competitors or even authorities. For example, they can alter individualised prices to users, based on opaque criteria, with obvious discriminatory effects. In the same way, they can rank, hide or highlight the information given to users on their newsfeed or the webs they are visiting. This entrails risks for equality, discrimination in addition to privacy. Rahman redefines this feature as power transmission, expanding Khan's notion of informational exploitation by looking at how dominant actors are threatening net neutrality. Corporations owning the physical infrastructure of telecommunications can grant privileged access to the network to digital corporations, resulting in wider broadband with faster connections. This could increase the digital divide, creating a two-speed internet, one composed by those privileged who can afford a high-speed connection to the internet and those who can only access a restricted and sponsored network. Rahman also refers to how this power over information may have political and social consequences (as we will see soon). Finally, Rahman identifies scoring power. Platforms order, hierarchise and curate information through algorithms. Those algorithms have been labelled by legal scholar Frank Pasquale as black boxes (Pasquale, 2015). Opaque pieces of software managing worldwide data, but unaccountable to the public. These algorithms are responsible for Facebook's newsfeed, Google's search results or Amazon's product search engine. This not only affects the private sphere. As we will see in Chapter 5, public institutions are increasingly using private software to score citizens in the welfare system or to determine the risk of a specific subject in the criminal justice system. The scoring power relies on privately owned algorithms, with little or none public oversight. This infrastructural power over information flows, that is, the management, distribution and production of cyberspace, has been labelled by Lynskey (2019) as data power:

> Whereas market power concerns the constraints placed on a company by its competitors and consumers on a particular market and on the economic harms that may follow from the exercise of such power, a more

> comprehensive conception of power is needed in order to capture adequately the power data-intensive companies wield. Data power is a multifaceted form of power available to digital platforms, arising from their control over data flows. As online platforms act as an interface between their various constituents (content providers, advertisers, individual users, etc.), they are in a unique position to control the flow of information between participants in the digital ecosystem, and to gather data about the actions of each of these parties in the digital sphere (Lynskey, 2019, p. 196).

This globally exercised data power is what allows digital corporations to exert power over markets, communications, politics or workforce.

4. Digital Communism: Socialist and Post-Fordists

> [W]e also see the contours of something new, a society as distinct from our own as that of the twentieth century to feudalism, or urban civilisation from the life of the hunter-gatherer. It builds on technologies whose development has been accelerating for decades which, only now, are set to undermine the key features of everything we had previously presumed to be as unchanging as scarcity itself. Its name? Fully automated luxury communism (Bastani, 2019, p. 30).

Surprisingly or not, Marx has become trending among academics looking at the rising power of digital corporations. At least two contemporary currents of Marxism are aiming to explain and revert the phenomenon of digital capitalism without renouncing to the technological developments of the digital era: digital socialism and post-Fordism. The first theoretical proposal focuses its discussion around the notion of digital labour. Christian Fuchs has become the most relevant referent in the theorisation of a critical economy of digital labour. The author is perhaps the one who has most clearly exposed the interdependence between different forms of digital capitalism of which the digital economy would be only a segment. For Fuchs, the development of new forms of capitalist exploitation does not imply the disappearance of the previous technologies of domination but the superposition of new layers on

previous mechanisms of capital accumulation. In his work *Digital Labour and Karl Marx* (2014), Fuchs analyses six sub-models of extraction of surplus value that occur in the context of digital economies: 1) Digital slavery in the context of mineral extraction; 2) Exploitation, original accumulation and formal subsumption of labour in hardware production industries in China; 3) Global division of labour and new imperialism in the Indian software industry; 4) Productive aristocracy in Silicon Valley; 5) Expansion of Taylorism in the provision of digital services; 6) Compensation and extraction of surplus value from the work of the users of the platform economies. Fuchs has extensively analysed the political economy of platforms such as Facebook and Google, concluding that their business model is based on the exploitation of digital work. Users of online platforms such as Facebook or Tinder are not only users but also data producers, that is, digital labourers. Fuchs claims that with each connection, with each comment, message, swap or tweet, platform companies obtain profit, involving surplus value, and therefore capital accumulation. These unpaid wages are one of the main elements explaining the success of the platform capitalism companies (Fuchs, 2016).

Trebor Scholz (2017) has also explored the exploitative nature of the digital labour model. Acknowledging the originality of this stage of capitalism, Scholz proposes a new frame of interpretation for the concept of exploitation, capable of rendering the gamification technics of the digital platforms. His explanation of exploitation in digital platforms is not dissociated with joy or pleasure for the digital labourers. The essence of gamification relies on the ability of digital platforms to render their labouring process as video games, fostering addictive and competitive behaviours that literally hook their prosumers. Scholz has also analysed digital labour regulatory frameworks, especially from the US and how they negatively impact on worker's rights (and of course their material conditions). But what is perhaps his most interesting proposal relates to his experience as a digital workers organiser. In *Ours to Hack and to Own: The Rise of Platform Cooperativism, A New Vision for the Future of Work and a Fairer Internet,* Scholz aims to provide workers and activists with

a practical toolbox towards political organisation, specifically towards the organisation and defence of digital cooperatives (Scholz & Schneider, 2016).

> The theory of platform cooperativism has two main tenets: communal ownership and democratic governance. It is bringing together 135 years of worker self-management, the roughly 170 years of the cooperative movement, and commons-based peer production with the compensated digital economy. The term "platform" refers to places where we hang out, work, tinker, and generate value after we switch on our phones or computers. The "cooperativism" part is about an ownership model for labor and logistics platforms or online marketplaces that replaces the likes of Uber with cooperatives, communities, cities, or inventive unions. These new structures embrace the technology to creatively reshape it, embed their values, and then operate it in support of local economies. Seriously, why does a village in Denmark or a town like Marfa in rural West Texas have to generate profits for some fifty people in Silicon Valley if they can create their own version of Airbnb? Instead of trying to be the next Silicon Valley, generating profits for the few, these cities could mandate the use of a cooperative platform, which could maximize use value for the community (Scholz, 2016, pp. 23-24).

The second theoretical Marxist current is composed of the autonomous school of post-Fordist thought. Among the most outstanding authors, we can name Mauricio Lazzarato (2014), Mario Tronti (2015), Moulier Boutang (2016), Matteo Pasquinelli (2015) or Franco 'Bifo' Berardi (2017) but also other theoreticians somewhat more distant from these proposals such as Tiziana Terranova. These contributions share a common interest in the Marxian 'fragment of the machines', a text that could be found in the *Grundrisse* (1993). The fragment is, for the post-Fordists, a turning point in Marxian thought as it announces, predicts(?), the 'informational society', the machinization, the substitution of workers by robots and a sort of working class' collective intelligence named as 'general intellect'. Around these key elements, post-Fordist theorist Maurizio Lazzarato (1997) coined the concept of immaterial labour, later assumed and reformulated by many other scholars and activists:

> The particularity of the commodity produced through immaterial labour (its essential use-value being given by its value as informational and cultural content) consists in the fact that it is not destroyed in the act of consumption, but rather it enlarges, transforms, and creates the "ideological" and cultural environment of the consumer. This commodity does not produce the physical capacity of labour power; instead, it transforms the person who uses it. Immaterial labour produces first and foremost a "social relationship" (a relationship of innovation, production, and consumption). Only if it succeeds in this production does its activity have an economic value. This activity makes immediately apparent something that material production had "hidden," namely, that labour produces not only commodities, but first and foremost it produces the capital relation (Lazzarato, 1996, p. 142).

For Lazzarato, the whole society has become productive; the hegemonic productive class is the cognitariat, that is to say, the set of immaterial workers that are the core of productive relations in the information society. The capitalist biopower has constituted extraction mechanisms capable of appropriating the cooperative work, subsuming the productive general intellect to capital. Thus, the *social factory* is currently hacked by capitalism, although the natural communist tendency of the productive forces is progressively exhibiting the contradictions of the capitalist model and pushing forward to its end. Matteo Pasquinelli considers that the exploitative nature of digital behemoths such as Google lies not in labour exploitation but on rent. Specifically, Pasquinelli (2009) claims that digital capitalists have become the global rentiers of the common intellect. For this reason, among others, Srnicek, Williams and more recently Aaron Bastani (2019) propose to accelerate the current phase of capitalist development.

> We want to accelerate the process of technological evolution. But what we are arguing for is not techno-utopianism. Never believe that technology will be sufficient to save us. Necessary, yes, but never sufficient without socio-political action. Technology and the social are intimately bound up with one another, and changes in either potentiate and reinforce changes in the other. Whereas the techno-utopians argue for acceleration on the basis that it will automatically overcome social conflict, our position is that technology

> should be accelerated precisely because it is needed in order to win social conflicts (Williams & Srnicek, 2013, p. 356).

They aim to precipitate the contradictions of capital and thus to achieve a digital socialist society. This new society would be put at the service of the common industrial automation and algorithmic government, emancipating wage labour from the masses through universal basic income and reducing unwanted labour to the minimum extent. Some other digital socialists and Marxists are being more cautious with the latest developments of AI based technologies. Taking distance from the Italian post-Fordism but still sharing some of the philosophical roots, Nick Dyer-Witheford, Atle Mikkola Kjøsen and James Steinhoff (2019) questioned in their magnificent book, *Inhuman Power: Artificial Intelligence and the Future of Capitalism,* the capitalist roots of AI while evaluating new forms of automated production.

To summarise, whereas digital socialists propose to reorganize labour, post-Fordists mobilise for its end and dissolution. For post-Fordists, the social factory, liberated from the tyranny of capitalism and wisely directed by the general intellect incarnated in the cognitariat (and super powerful communist AI's), will redistribute goods and riches, thus satisfying whatever the 'commons' may need. Furthermore, digital socialists raise the possibility of a new organisation of the digital economy through its planning, unashamedly asking the big question: Why don't we turn digital platforms into cooperatives or communalise the search engines by establishing a model of economic socialism where the digital economy would play a relevant role but not a protagonist one? Each of these proposals involves different potentials and problems, which, despite their shortcomings, can offer invaluable help in understanding the current phase of capitalist development of the digital economy.

5. Conclusions

In this chapter, I offered a summary of contemporary contributions looking at digital capitalism. Hopefully, it works well both as a literature review and as an introductory text to today's academic debates on the topic. The chapter looked at three bodies of literature looking at digital capitalism: critical management studies, critical legal studies and digital Marxism. Drawing on critical management contributions, I have tried to explain the new digital capitalism's business model, as well as the digital platforms' corporate structure. Then I have deepened in the works of critical legal studies scholars, mostly from the United States. From this approach, I have delved into what critical legal scholars consider one of the pillars of digital capitalism: the infrastructural power, fundamental to understanding the corporate power enjoyed by giants such as Google or Facebook. Finally, the chapter closes with a summary of two Marxist schools, investigating and questioning the rise of digital capitalism. The first current has here been labelled as 'socialist'. This current follows an updated Marxist interpretation, heavily focused on wage and unwaged digital labour. The second current analysed, labelled here as the post-Fordist, reads Karl Marx's works in the light of the latest technological and productive developments, especially with regards to automation, machine and deep learning. It is worth highlighting that post-Fordists have been exploring digital communist horizons, in which new technologies would be playing a fundamental and emancipatory role.

Chapter 2 The Silicon Doctrine

> More and more major businesses and industries are being run on software and delivered as online services—from movies to agriculture to national defense. Many of the winners are Silicon Valley-style entrepreneurial technology companies that are invading and overturning established industry structures. Over the next 10 years, I expect many more industries to be disrupted by software, with new world-beating Silicon Valley companies doing the disruption in more cases than not (Andreessen, 2011).

1. Introduction

In *The Shock Doctrine: The Rise of Disaster Capitalism,* Naomi Klein (2007) described the legal-political proposal of one of the most influential intellectuals of the neoliberal Chicago school, economist Milton Friedman. Friedman advocated for the neoliberal regularisation (Lleras, 2016) of the financial sector, the privatisation of public companies, and above all, the establishment of the market as the role model for shaping public policies (Couso, 2017). In the prologue of one of his texts, he defended the use of political crises to dismantle the protectionist economic structures of the (Southern) American countries (Friedman, 2009). What was nothing more than another liberal theory suddenly became mainstream economic policy at the beginning of the 1970s.

The dictatorial regimes imposed by arms in Brazil and Chile followed the economic dictates proposed by Friedman. Although Brazil would soon renounce it, Chile would nevertheless become the benchmark of global neoliberalism. The respected scholar was especially questioned for his intellectual collaboration with Pinochet's bloody regime in Chile (Webber, 1999). The coup-makers, protected by the United States, took advantage of the political crisis they had caused to promote radical neoliberal economic reforms. The shock doctrine, inspired by Friedman's ideas and put into practice during the Chilean dictatorship, has continued to be used undercover in the so-called war on terror or as recipes against economic crises (Connell and Dados, 2014; Harvey, 2007; Monbiot, 2016).

The silicon doctrine genesis can be traced back to 2001, being the consequence of two major political and economic events: the terrorist attack of 9/11 in New York and Washington (the deadliest in the history of the United States) and the implosion of the technological bubble (or dot-com boom), accelerated by the attacks.

The survivors of the dot-com bubble had to reinvent themselves in a world where the internet was becoming part of everyday life and, as such, a huge market full of competitors struggling for market domination. The need to communicate grew along with the need for intelligence agencies to control the new networks. The same technologies that enable the internet as we know it—GPS localisation techniques, cookies, mobile devices, computerised semantic analysis, neural networks, massive data analysis—also supported surveillance and control, both governmental and corporate (Lyon, 2003). To develop these new technologies, existing laws were violated. Corporations and governments alike proceeded without consultation: gathering data, experimenting, surveilling; that is, exploiting the grey areas of scarce (or absent) legislation. It became a priority for corporations and governments to advance these technologies, both to generate benefits and to guarantee national security (Richard, 2012). But still, until 2007 the absolute implantation of this new technological ecosystem was not guaranteed. Capital funding, fundamental for driving the project, still did not flow.

The 2008 financial crisis represents the intermediate step between the shock and the silicon doctrine. Since the outbreak of the 2008 economic crisis and the shaking of traditional markets (Tabb, 2012), global capitals have sought refuge in a new sector, catapulting forward what we now know as digital capitalism (Wonglimpiyarat, 2016). This period of global unrest was intelligently used by venture fund executives, who, far from having to assume the legal responsibilities of their corporate crimes (one of the elements at the origin of the Great Recession), were recognised as the new heroes of the new economy, first American and then global (Eren, 2017). The capital that shook the global economy

now flooded Silicon Valley start-ups, for whom, following the influential Declaration of Cyberspace Independence (Perry, 1998), the laws of the material word had no legitimacy in cyberspace.

The new shock doctrine is called ‘disruption’ and is celebrated by CEOs and executives, academics, politicians and consultants like McKinsey (2018) and Deloitte (2019). Tech-publications such as *Wired* and international organisations such as the OECD (2015) have also recognised disruption as the digital capitalist Zeitgeist. A phrase coined by Mark Zuckerberg, Facebook CEO, synthesises the spirit of the disruptive era: ‘Move fast and break things’ (Taplin, 2017). The legal consequences of this philosophy have resulted in a permanent violation of human and fundamental rights. Silicon Valley’s legal disruptive spirit is a real threat to which the global authorities have begun to pay attention; as reported by *The Guardian* (Solon, 2018), Zuckerberg had to respond not only to the Senate of his country but also to the European Parliament as a consequence of the irresponsible handling of the data of tens of millions of users. What do we know about the legal and political project behind that profitable and deliberate data misuse? This question raises another, deeply connected with one of the main objectives of this thesis: What are the legal-political beliefs on which digital capitalism stands?

This chapter will try to provide an answer to that question, narrowing the scope to focus on one of the most successful versions of digital capitalism, the one proposed by Silicon Valley. For this purpose, I shall analyse and interpret contemporary contributions on and by digital capitalists using a socio-legal approach. With this, I aim to offer theoretical grounds from which to reflect the Silicon Valley legal thought; this may be useful not only in understanding that thinking but also in building alternatives to it. Section 2 of this chapter will briefly look at the ideological Frankenstein’s monster in which the silicon doctrine stands, a monster with a libertarian head, a liberal body and a neoliberal soul, in order to understand the Silicon Valley political stakes. Section 3 will explore three of the

silicon doctrine political pillars: its data extractive model, the monopolist behaviour of digital corporations and the methods those corporations use to exploit their workers and users.

2. Silicon Valley Intellectuals

2.1. A Short Introduction to Silicon Valley Intellectual History

Silicon Valley is a small strip of territory located in the Santa Clara Valley in California that includes the cities of San Jose, Santa Clara, Palo Alto, Mountain View and Sunnyvale. In this fraction of Californian territory are concentrated some of the most currently relevant digital economy companies, both in terms of software and hardware (Castells, 2014). As reflected by Katz (2015), despite the newness of its media relevance, Silicon Valley has played an extraordinary role in technological, financial, educational and management transformations worldwide for almost fifty years. Mazzucato (2015) has described how what she terms an entrepreneurial state (or, in other words, public funding) hides behind the success of the region. As Levine (2018) explains, the Silicon Valley techno-industrial ecosystem prospered in the heat of public funds destined for defence (military) research. Tax-payers' money flowed into private corporations such as Apple or Google, or elite educational institutions like Stanford, creating a unique ecosystem that occupies a privileged place in the development of current (digital) global capitalism (Fisher, 2018).

Silicon Valley was, until the first decade of the twenty-first century, an almost exclusively technological and economic power. With the rise of companies such as Google and Facebook, Silicon Valley has also found itself to be a political and cultural behemoth, both nationally and internationally. The Silicon Valley platforms not only represent a disruptive channel by which the old powers access new social segments; they are themselves a power demanding an active role in the global arena (Cohen, 2018; Solon & Siddiqui, 2017). Despite their differences, Silicon Valley corporations are

lobbying together in Washington and Brussels, trying to intervene in legislative developments affecting the digital economy, such as copyright or data privacy laws (Cooper & Hirst, 2017). The enormous power of these companies has led them to maintain face-to-face diplomacy with nations as well as to sustain international conflicts with powerful international actors like China or the European Union (Bratton 2016).

While there is no doubt that the weapons industry and speculative investment funds have shaped the character of Silicon Valley, no less relevant has been the cybernetic and utopian thinking of engineers and developers like Norbert Weiner and Douglas Engelbart (Katz, 2015). Highly disruptive technological products such as online communications, and the interaction between the machine and people through graphic interface, artificial intelligence, virtual reality or the exchange of P2P files have their theoretical basis in intellectuals who, like Jaron Lanier, wanted to make a contribution to humanity, or in other words, to 'save the world' (2014). This body of utopian developers and intellectuals sought to reaffirm the autonomy of the masses to the detriment of the growing influence of states and private companies, actors on whom they ultimately relied to finance their projects. Therefore, the network formed in Silicon Valley, its companies and its products present a strange and contradictory mixture of radical capitalism and emancipatory potential (Dahlberg, 2009).

Silicon Valley ideological structure is complex, but at least three levels of composition can be identified: a libertarian layer (libertarian as Robert Nozick not as Pyotr Kropotkin); a neoliberal level; and a liberal stratum (liberal as Bernie Sanders not as John Stuart Mill). As libertarians, Silicon Valley's corporations have legally and illegally avoided paying taxes. For instance, companies such as Apple have made extensive use of tax havens or/and avoided paying taxes on the legally designated jurisdiction (Barrera & Bustamante, 2018). They have also challenged institutional attempts to fairly tax the digital economy. For instance, the Spanish and French governments were threatened by public and private US authorities after approving digital services taxes, targeting companies

(The Guardian, 2020). As neoliberals, digital capitalists have declared a legal warfare against the working class, breaching labour laws around the world and, as I further detail in Chapter 4, promoting a new legal framework that fundamentally wipes out workers' rights gained in the twentieth century. As liberals, they have backed progressive causes such as LGBT rights (Cook, 2019) or racial justice campaigns (Paul, 2020) as well as publicly supported democratic candidates. However, scholars and activists have pointed out how racial, gender and class discrimination run rampant within Silicon Valley (Spencer, 2019)

This heterogeneous composition comes together in a particular and contradictory legal narrative. In the name of freedom, innovation, and the neutrality of the web, Silicon Valley demands non-interventionist policies from the state, as well as fighting against current or further privacy laws, or tax regulatory frameworks for the digital economy (Post, 2017; Zuboff, 2019). While they claim freedom, the tech companies dominating the network in a quasi-monopoly position impose harsh contractual conditions on their employees and users (Malos et al., 2018; Musk, 2018). Companies do not even respect terms of use, as has been demonstrated by the German Federal Cartel Officer in a case where Facebook was found to be combining user data from its different platforms, a practise that went against not only EU and US regulation but Facebook's own terms of use (Bundeskartellamt, 2019). Such is the character of Silicon Valley: freedom for corporations, subjection for consumers.

The three ideological dimensions (libertarian, neoliberal and liberal) have numerous points of contradiction. Progressive liberalism has been embodied in the United States by the Democratic Party. It ranges from the leftist proposals of Senator Bernie Sanders and Elizabeth Warren, to the centrist ones carried out by the ex-Secretary of State Hillary Clinton (Noel, 2016). Both positions coincide on assuming the need to establish controls and legal mechanisms for capitalism in order to maintain economic and social equilibrium (Hawley, 2015). Since the 70s, important sectors of the Democratic

Party have also embraced the demands of social and civic rights for racial, ethnic, cultural and sexual minorities. Although Silicon Valley has furiously challenged attempts to regulate its capitalist model, it has also embraced and sweetened an individualistic version of multiculturalism in its rhetoric.

Both the neoliberal and the libertarian proposals have tended to find their place in republican candidacies. Libertarian and neoliberal ideologies defend the hegemony of the market over other social institutions. Their regulatory models are adjusted to this objective, limiting state action as much as possible while encouraging the presence of private actors in all areas, from education, to health, safety, social services and, of course, financial, commercial or productive sectors (Grewal & Purdy, 2014). The neoliberal and libertarian ideological discourse makes the individual responsible for structural failures. Under the neoliberal narrative, evolution, progress and scientific, technical, cultural and economic development depend on a handful of geniuses and makers, without whom humanity would be lost. This mythical story, popularised in the 70s by the novelist Ayn Rand, was embraced by the new neoliberal wave of the 70s and Silicon Valley cyber-utopianism (Freedland, 2017). In Rand's narrative (2005), the state, the masses, the crowd, should neither dominate geniuses nor restrict the work of the creators of worlds. The smaller the intervention of the state, the less submission the individual suffers, the greater the freedom and, with it, the progress.

Although cyber-utopianism and neoliberalism differ diametrically in the rhetoric about minorities, migrants, gender and the environment, they coincide on the recognition of the individual as the historical subject. Silicon Valley and, until very recently, the ultimate representative of neoliberalism, Wall Street, identify the market as the fairer arbitrator of public choices; hence, the State must restrict its activities. Ayn Rand defends an elitism with a strong technocratic flavour, much to the taste of Silicon Valley techie elite:

> Take a look around you, you savages who stutter that ideas are created by men's means of production, that a machine is not the product of human thought, but a mystical power that produces human thinking. You

> have never discovered the industrial age—and you cling to the morality of the barbarian eras when a miserable form of human subsistence was produced by the muscular labor of slaves. Every mystic had always longed for slaves, to protect him from the material reality he dreaded. But you, you grotesque little atavists, stare blindly at the skyscrapers and smokestacks around you and dream of enslaving the material providers who are scientists, inventors, industrialists. When you clamor for public ownership of the means of production, you are clamoring for public ownership of the mind. I have taught my strikers that the answer you deserve is only: 'Try and get it' (Rand, 2005, p. 956).

For Rand, creators, engineers and developers (but not politicians) are among those who should oversee the relevant decisions (Berlin, 2017). Wall Street agrees with Silicon Valley when considering the need to establish business leadership over political life. It is the market that should guide the polis and not vice versa. After all, isn't money what moves the world? Wall Street and Silicon Valley, often presented as antagonistic forces, intersect in the new economic scenario of CEO-engineers (Cohen, 2018).

2.2. Halt! But Who Are the Silicon Valley Intellectuals?

The idea of considering this economic region as the home of a neoliberal school of thought is not new. In 1996, Richard Barbrook and Andy Cameron published an influential essay named *The Californian Ideology*. There, they described the contradictory nature of this political thought, its neoliberal, cybernetic and hippie roots, and Silicon Valley's love/hate story with public funding:

> Across the world, the Californian Ideology has been embraced as an optimistic and emancipatory form of technological determinism. Yet, this utopian fantasy of the West Coast depends upon its blindness towards—and dependence on—the social and racial polarisation of the society from which it was born. Despite its radical rhetoric, the Californian Ideology is ultimately pessimistic about fundamental social change. Unlike the hippies, its advocates are not struggling to build 'ecotopia' or even to help revive the New Deal. Instead, the social liberalism of New Left and the economic liberalism of New Right have converged into an ambiguous dream of a hi-tech 'Jeffersonians democracy'. (…) If only some people have

> access to the new information technologies, 'Jeffersonians democracy' can become a hi-tech version of the plantation economy of the Old South. Reflecting its deep ambiguity, the Californian Ideology's technological determinism is not simply optimistic and emancipatory. It is simultaneously a deeply pessimistic and repressive vision of the future (Barbrook & Cameron, 1996, p. 58).

Since the publication of this essay, the relevance of Silicon Valley has grown exponentially, as has the development of the Californian Ideology and its influence. Well-known figures such as Mark Zuckerberg, Peter Thiel, Eric Schmitt and Marc Andreessen are among the kind of CEOs, CTOs and relevant investors trying to influence the becoming of the technological, political and economic aspects of the digital era. They are no longer satisfied as previous entrepreneurs with sporadic interviews or public declarations on mass media. They are on the spot 24 hours, 7 days a week through an intricate network of blogs, social media, research centres, publishing companies, journals, magazines, newspapers, educational providers political institutions at every level, corporate events and so forth. Considering the FAANG (Facebook, Amazon, Apple, Netflix, Google) plus the ten most heavily funded 'unicorns' (privately held start-ups capitalised with one or more billion dollars) Uber, We Work, Airbnb, Space X, Stripe, Juul Labs, Epic Games, Pinterest, Samumed and Lyft (CBInsights, 2018) Silicon Valley intellectuals are overwhelmingly white and male. Of the 15 companies considered, only four CEOs are non-white. None of them identifies as female. Despite its constant declarations in favour of ethnic and gender diversity, the truth is that the digital bourgeoisie is as white and patriarchal as the previous one. The vanguard of the Silicon Valley intellectuals might be composed by its economic leaders, but they are not alone. Global class companies are funding sympathetic research to its views in relevant fields through grants, scholarships and other publishing opportunities conforming an intellectual army that legitimates the words and acts of the first line intellectuals (Rushe, 2017).

Silicon Valley intellectuals are far from being a homogeneous collective. Disparity and divergence on their opinions are a constant; we can even consider that contradiction, sometimes antagonism, is

a defining feature of the nature of this movement. To mention a well-known example, a recent research paper from Stanford University shows the liberal/progressive bias of the majority of the Silicon Valley elite (Brookman et al., 2017). However, Donald Trump, the former conservative president of the United States, has founded support in one of the most important figures of Silicon Valley: Peter Thiel, the founder of Pay-Pal and Facebook's board member (Facebook, 2019). So how can we consider Silicon Valley intellectuals as a cohesive ideological group, when they radically disagree about fundamental questions?

Even considering the strong differences among Silicon Valley intellectuals, they have positioned themselves as the vanguard of the digital cosmopolitan bourgeoisie in two key political battlefields. At a global scale, Silicon Valley intellectuals have shown their disapproval to the protectionist backlash of the Trump administration, resolutely supported by national bourgeoisie clusters standing on more traditional industries (Madrigal, 2017). At a local scale, Silicon Valley intellectuals have aligned together pursuing federal privacy laws 'On Its Own Terms' (Kang, 2018), lobbying also in other areas such as intellectual property rights, trust and antitrust, communication or financial services (Paresh, 2019). In short, they are the political leaders of the emergent cosmopolitan bourgeoisie and the frontline defenders of globalization against the populist protectionist backlash.

Silicon Valley intellectuals are CEOs, CTOs, investors and/or relevant executives of digital corporations. They are responsible for crucial economic decisions, influencing the global economy. To mention one example, in 2017 Amazon made public its decision of building a new headquarters in a North American location (Ong, 2017), a massive facility where over 50.000 well-paid workers would manage the biggest logistic company of the world. The selection process took the form of an open bid with over 200 applicant cities, competing against each other in a 'Hunger Games' like contest:

> In an era of brutal austerity, cities are hollowed out and hoping for a savior. Since the tech sector is flush with cash, by showing up and saying the magic words – growth, jobs, investment, innovation – city leaders bend to their will. Amazon's HQ2 competition is the latest egregious example of a techno-capitalist regime that's bewitching cities around the world. While only about 30 of the proposals are publicly available so far, they paint a troubling picture of cities clamoring to sell their soul to Amazon. As the Seattle Times reports, the amount of money, perks and power that cities are ready to give away to Amazon is absolutely galling. It goes way beyond just standard subsidies and tax breaks (Sadowski & Gregory, 2017).

The cities provided Amazon with detailed information of their capabilities as well as promised to the company of the richest men on earth major tax breaks and public investment (Carrie-Wong, 2018). Bezos' tweets, posts and declarations were closely followed by senators, consultancy companies, city officials, social movements, neighbour associations, venture funds, constructors and contractors, trying to discern which will be the chosen city (Newton, 2018). Amazon's CEO finally decided to settle one of its Headquarters in Queens, New York. As *Business Insider* reported (Taylor, 2018), protest arose when the public learnt about the deal between Amazon and New York political authorities (the republican Governor of New York State, Andrew Cuomo, and the democrat Major of New York City, Bill de Blasio), promising tax breaks and other subsidies of around $1.5 billion (USD) to Amazon. An opaque corporate decision over the placement of a private company facility became one of the central issues of the most powerful country's public sphere. The selection process for Amazon headquarters could be considered as a monstrous libertarian performance of epic dimensions, in where public officials at the highest ranks competed against each other promising deregulation and preferential treatment to a private company.

2.3. The Epistemic Production of Palo Alto

Silicon Valley intellectuals' contributions often consist of short statements posted on social media, blogs, or directly addressed to the media through public declarations or interviews (Randall, 2018).

Sometimes, Silicon Valley intellectuals choose to write large pieces of writing or give long interviews either reflexive or as a reaction to a political or economic event (Andreessen, 2014). In these longer pieces they deal with relevant topics such as automation or the financialisation of economy (Bughin et al., 2017). For instance, Marc Andreessen has recently published an eloquent productivist manifesto:

> Our nation and our civilization were built on production, on building. Our forefathers and foremothers built roads and trains, farms and factories, then the computer, the microchip, the smartphone, and uncounted thousands of other things that we now take for granted, that are all around us, that define our lives and provide for our well-being. There is only one way to honor their legacy and to create the future we want for our own children and grandchildren, and that's to build (Andreessen, 2020).

The tone of the speeches or texts are often candid, friendly and optimistic. Silicon Valley intellectuals use their communicative and charismatic skills in order to promote a vision of the world where technological companies have the solutions for the most complicated problems confronting humanity (Taffel, 2018). They defend an extreme version of libertarian digital capitalism, even when asked about their most controversial issues, such as the struggle of Amazon against unions, or the exploitation of Apple's providers in China (Merchant, 2018). Some of the forefront intellectuals choose to publish longer texts in the form of books. Among the most prolific authors, we can find Reid Hoffman and Peter Thiel, co-founders of PayPal and, thus, members of the self-proclaimed 'PayPal Mafia'. Hoffman and Thiel have extensively written on economy, marketing and even self-help books. Their works are partially responsible for the rise of what has been labelled as the *CEO society* (Bloom & Rhodes, 2018), that is, the substitution of political and civic values by the corporate entrepreneurial spirit of late neoliberalism. Hoffman's *The Start-up of You* (2012) and Thiel's *From Zero to One* (2014) explicitly point at a monopolistic market-driven way of living as a desirable moral and ethical compass for the everyday life and business experiences alike:

> The problem with a competitive business goes beyond lack of profits. Imagine you're running one of those restaurants in Mountain View. You're not that different from dozens of your competitors, so you've got to fight hard to survive. If you offer affordable food with low margins, you can probably pay employees only minimum wage. And you'll need to squeeze out every efficiency: that's why small restaurants put Grandma to work at the register and make the kids wash dishes in the back. Restaurants aren't much better even at the very highest rungs, where reviews and ratings like Michelin's star system enforce a culture of intense competition that can drive chefs crazy. (French chef and winner of three Michelin stars Bernard Loiseau was quoted as saying, "If I lose a star, I will commit suicide." Michelin maintained his rating, but Loiseau killed himself anyway in 2003 when a competing French dining guide downgraded his restaurant.) The competitive ecosystem pushes people toward ruthlessness or death. A monopoly like Google is different. Since it doesn't have to worry about competing with anyone, it has wider latitude to care about its workers, its products, and its impact on the wider world. Google's motto—"Don't be evil"—is in part a branding ploy, but it's also characteristic of a kind of business that's successful enough to take ethics seriously without jeopardizing its own existence. In business, money is either an important thing or it is everything. Monopolists can afford to think about things other than making money; non-monopolists can't. In perfect competition, a business is so focused on today's margins that it can't possibly plan for a long-term future. Only one thing can allow a business to transcend the daily brute struggle for survival: monopoly profits (Thiel, 2014a, p. 27).

The libertarians' characteristic absolute trust in (if not devotion to) the free market has been uncritically reproduced by myriad authors, which with more or less success replicate and spread the Silicon Valley values. One example is the popular Lean startup methodology, a viral, pseudoscientific business methodology seeking to accelerate the development of tech business through a process of constant adaptation to the consumer, an application of the feedback type of method inspired by cybernetics. This model, popularised by the entrepreneur Eric Ries (2011), has been widely reproduced and it is now present both in the libraries of top universities (Stanford and Harvard Business Schools have extensively published and taught on the topic) and in the bookshelves of airport duty frees alike. The list of the titles produced every year reproducing the latest Silicon Valley intellectuals' occurrences is endless just as much as the proliferation of courses, seminars and

workshops explaining and developing the applicability of those ideas for almost every human endeavour. The neoliberal nature of the Silicon Valley model is not only not mentioned but also hidden by a narrative flooded with empty signifiers such as ‘freedom’, ‘collaboration’, ‘cooperation’, ‘team’, ‘community’ or ‘sustainability’ (Sadowski & Bendor, 2019; Pasquale, 2016). These works may talk about histories of corporate success and failure but rarely mention the large list of negative effects on society. Even more, in some instances the cause of some of the worst social consequences produced by these technologies is promoted as the key element for economic success. This is the case of the infamous *Hooked: How to Build Habit-Forming Products,* in which Eyal (2014) explains that the key to success in the app industry relies on the designer’s ability to build hooking apps, good enough to capture the users’ attention and become part of their life; as necessary as eating or sleeping.

Facebook’s CEO Mark Zuckerberg has recently published two important and relatively long pieces on his Facebook account concerning Facebook content governance and the role of Facebook in political elections (Zuckerberg, 2018a; 2018b), perhaps two of the most vibrant topics in contemporary political communication:

> Many of us got into technology because we believe it can be a democratizing force for putting power in people's hands. I've always cared about this and that's why the first words of our mission have always been “give people the power”. I believe the world is better when more people have a voice to share their experiences, and when traditional gatekeepers like governments and media companies don't control what ideas can be expressed (Zuckerberg, 2018a).

For his part, Apple’s CEO, Tim Cook, has chosen two extremely different channels to spread his ideas. Cook gave an elaborated discourse on data privacy at the International Conference of Data Protection and Privacy Commissioners (2018a) that many have considered an explicit criticism of Facebook’s data extractive business model. Cook (2019) is also a very active Twitter user, platform

which he uses to promote LGBT rights, freedom of speech or the liberal version of multiculturalism. Google has used his media muscle in its sustained cold war with Europe over data privacy (Enright, 2018) and copyright (Google, 2019). Contrary to other subtler corporations, Google has vividly made public its partisan views in particularly controversial issues decidedly advocating on their own interest. For instance, the company shared with the media its critical view on the US government decision of suspending guest worker visas (Brandom, 2020). Although social media and blogs have become the main political communication tools of Silicon Valley intellectuals, it is worth mentioning what is, perhaps, the finest piece of this kind of literature, a book titled *The New Digital Age: Transforming Nations, Businesses, and Our Lives* (Schmitt & Cohen, 2013). Written by Google's former executive chairman Eric Schmidt and policy consultant Jared Cohen, the book shows the enormous political and ethical ambitions of the biggest platform economy company in the world, Alphabet.

Traditional media is also frequently used as a podium to defend the character of digital capitalism. Peter Thiel, one of the leaders of this system, has repeatedly defended his position towards monopolies. In 'Competition Is for Losers', a well-known article published in the *Wall Street Journal* (2014), Thiel exposes his defence of monopolies, not as a revival of the Gilded Age, but as way of disrupting stasis, equilibrium, the death. Thiel revitalises the Gilded Age market ideology, with disruptive high-tech monopolies colonizing the centrality of economy, assuming the lead position in the world, and with it, giving the last chance to a doomed humanity needed of wisdom and guidance. More recently, also in the *Wall Street Journal*, Mark Zuckerberg (2019) has firmly defended Facebook's business model based on the exploitation and trade of user's private data. His article came after a wave of critics from governments, users and even from Facebook's investors (Cook, 2018). One thing is clear: with their political communication, Silicon Valley intellectuals wish to present themselves as technocratic saviours ready to solve major global problems and perhaps

redeem humanity with new sweetened versions of capitalism (or even with prosperous cities on Mars) (Musk, 2017).

Silicon Valley believes in a cosmopolitan, technocratic bourgeoisie: a body composed of (intellectually speaking) the best, the fittest and the most capable; a heroic body that has been entrusted with the task of saving humanity (Solon, 2018). Silicon Valley does not believe in homelands, nor in identity groups, nor in inherited communities. The silicon doctrine affirms with conviction the new digital social contract: social bonds are created through the affirmation of online subjectivity, joining Facebook groups or forming digital communities. The consumer is at the centre of its faith, a monetised version of the individual, thrilled by the perspective of social climbing in the tech meritocracy ecosystem. As noted by Himanen in his *Hacker Ethic* (2001), hackers should not be evaluated by their age, sex or ethnicity, but by their ability to hack. That is why in Silicon Valley racism, sexism or any other type of discrimination against social groups is rejected, always through radical individualism (Brookman et al., 2017). The individual must be measured by their talent, not by their appearance, as Zuckerberg pointed out: Hacker culture is also extremely open and meritocratic. Hackers believe that the best idea and implementation should always win—not the person who is best at lobbying for an idea or the person who manages the most people (Zuckerberg, 2012).

The problem is that, as its critics have pointed out, Silicon Valley has not been settled in an abstract territory where all subjects compete in equal conditions. California is a fully racialised, stratified, unequal society standing on the shoulders of nearly five hundred years of colonialism (Bacon, 2018; Levin, 2017; Pitti, 2018). The silicon doctrine rhetoric asserts that any person with the necessary skill can reach the highest social peaks, in one of the latest restatements of the American dream. However, recent studies reveal that inequality is increasing, the digital divide has not diminished, and the social and racial fracture is enlarged (Horowitz et al., 2020). The multicultural narrative of Silicon Valley,

curdled with magnanimous gestures through corporate donations, does not confront the structural dimensions of the problem (Walker, 2018). In this sense, we can affirm that Silicon Valley liberalism grows and prospers in the fertilised field of right-wing neoliberalism, with which it shares the fundamental elements of its ideology: faith in the market, globalism, individualism, technocratism and strong limitation of the state (Wong, 2017).

3. The Pillars of Silicon Doctrine

3.1. Data Extraction

Silicon Valley companies have maintained a frontal opposition to regulations and norms intended to protect users' privacy, as well as to defend intellectual property rights that do not belong to the realm of trade-secret regulations. In the United States (with the exception of California), privacy laws have been articulated in a fragmented manner, sector by sector, which was the preference of the tech industry, who intensely lobbied against any European-like comprehensive regulation (Cohen, 2018). Orly Lobel (2016), among others, defends the tech industry position on the basis that old conceptions about privacy should not condition a new and flourishing industry. The bedrock of Platform Capitalism stands on a legal infrastructure that considers private data as a raw resource, *res nullius* ready to be taken and processed. As Julie Cohen (2017) states, this has allowed the development of an extractive data industry, which barely has to render accounts to users from whom it obtains all kinds of information: from consumer behaviour to the most obscure secrets of users, passing through content of messages, mail, or any other type of communication (Cohen, 2018).

Behind Alphabet's (and others') techno-utopian rhetoric of development, technological progress, need for openness and access to information, lies an extraordinary will to power in the economic and

political spheres. User data can serve to segment markets, as a subject for subsequent marketing campaigns or for the development of new products (Fumagalli et al., 2018; Srnicek, 2017a; 2017b; Esteve, 2017). This information can be sold to insurance agencies or banks, to possible contractors or even to intelligence services. That is in the short and mid-term, but platform capitalist companies think in the long-term. Information is not only a resource by itself but the fuel of machine learning and AI. User data is the necessary supply to develop the technologies that are about to define the coming new industrial revolution, from driverless cars to fully automated smart cities. The information is obtained from multiple extraction points: clicks, browsing or waiting time on the screen, level of interaction, response or mobility. All the information around digital devices, everything that can be processed by their means of capturing audio, video, biometrics, geographical position, acquisitions and navigation can be commercialised (Couldry & Mejias, 2019). And that is only the beginning: Google is monetising the management of traffic flux in cities such as Madrid, water consumption, electricity; every aspect from the macro to the micro can be registered, datafied, monetised.

New digital capitalism companies have defended access to private data as an essential mechanism to advance technological development. The massive expropriation of private data has been enunciated in terms of freedom. Any legal restriction on access to private information, including that of a personal nature formerly protected by outdated moral standards of privacy, is now considered an obstacle against progress and science. The silicon doctrine strongly rejects any regulatory effort aimed to protect private data. It does not do so to claim the emancipatory utopia of the machinic commune in which subjects and machines live in peace without the need for states or corporations, but to affirm the right of digital corporations to govern that ‘no-man’s land’ that are the digital territories; an effective digital colonial government (based on science, progress and reason) that, in the words of Schmidt and Cohen, would redeem humanity from the oppressive presence of states and their bureaucracies (2013).

Many of the arguments adduced by Silicon Valley CEOs to justify their disruptive role in the global economy have to do with their self-identification as creators or makers at the service of humanity. Google, for example, has reiterated that its business mission is to 'Organize the world's information and make it universally accessible and useful' (Google, n.d.). Such a praiseworthy objective would excuse the 'inevitable' slips in the manipulation of private data or market abuse. For these corporations, humanity's most pressing problems, such as inequality or climate change, are not to be solved through structural reforms or the transformation of the economic model, but through a technological transformation driven by them. Morozov (2013) has labelled this techno-determinism as solutionism. In Silicon Valley parallel universe, the interest of conglomerates such as Facebook (Facebook, WhatsApp and Instagram) is to put their users in communication, not to obtain economic benefits; Tinder's is that people find the love they want; Google's is that users have at their disposal the knowledge of humanity. In this narrative there are no shareholders, no bonds, no revenues, no lobbies and no salaries. When the top managers of big technology companies, like Jeff Bezos or Tim Cook, are queried about the working conditions of their facilities, internet addiction, or how democracy or the free market are jeopardised by their platforms, they elude the questions. They appeal to the transcendental mission of Silicon Valley capitalism: how would some sacrifice not be necessary for the greater good? In this way, Bezos (Amazon CEO) has avoided a response in numerous interviews on Amazon's radical anti-union policies; Zuckerberg has denied before the European and US lawmakers his obscure involvement in the massive sale of personal data and the experiments conducted on their users; Chesky (Airbnb CEO) avoids his responsibility with the radical gentrification of the cities where the company he leads is present.

3.2. Domination of the Informational Infrastructure

Google has been promoting open source as the instrument to develop its applications by financing large programming events, such as the Summer of Code, where an explicit call was made to hackers

to work with the GNU Linux system (Google, 2018). It also offers an infinity of free programming courses through digital platforms such as Udacity. Google's rhetoric emphasises that it promotes global digital technological development, improving the services offered and multiplying the offer (since almost literally anyone can contribute to the universe of the apps in the Google Play Store). Thanks to open source new business, training and development opportunities would arise. Google would certainly get benefits, but in return would be offering (free of charge) tomorrow's means of production, materialising with it the maxim that the company, until recently, wielded: 'Don't be evil' (Cassin, 2017).

When the European Commission decided to sanction Alphabet (the mother company of Google) with a 4.343 million Euro fine for market abuse of its Android platform, Sundar Pichai, Google's CEO, forcefully contested the decision with a public post at Google's corporate blog (Pichai 2018). His speech makes the defence that Android had been developed in open code; that is, it can be freely manipulated, altered and reinvented. It is not an operating system based on proprietary code like Microsoft's Windows. Anyone with minimal coding skills can modify it or create multiple and functional variations of it. Android cannot be a monopoly, claims Pichai; it is rather a free digital ecosystem for mobile devices. Pichai does not deny the lead position of its operating system; however, for the CEO, its success does not correspond to a strategy of violence, intimidation against competitors or predatory prices. On the contrary, according to Alphabet, Android opened roads and offered tools, multiplying the possibilities of developers who can now compete globally with strong and ductile work tools. Android's open source breaks the castrating chains of proprietary software (Pichai, 2018).

In its plea against the decision of the European Commission, Google failed to mention that the open source of its Android OS is limited to the applications that make the mobile phone a telephone device. The rest of the main apps, such as Maps or the internet browser, respond to Google proprietary code,

i.e., those that today have the highest percentage of smartphone usage. The free software used in Android is subjected to the hegemonic proprietary code of the market, in the hands of the most powerful corporation in the digital economy. Android exemplifies how the techno-libertarian narrative of Silicon Valley conceals a monopolistic reality, explicitly challenged by, among others, the EU institutions (Iacobucci & Ducci, 2018). The 'open' free code is then configured to affirm the 'closed', to constitute a monopoly. This is not an unexpected or unforeseen result. The monopolistic domain is, in the words of one of the greatest exponents of the silicon doctrine, Peter Thiel, desirable both for its efficiency and its profitability, as well as for the supposed benefits for users. Competition, the ideological keystone of market capitalism as we knew it, is, for the founder of Pay-Pal, 'for losers' (Thiel, 2014). With the use of open source, Google also manages to outsource its innovation services in a process that has been called user-led innovation (Truffer, 2003). That is, capitalist companies encourage users to contribute with their ideas and technological developments to the improvement of their products, all without any form of remuneration apart from social recognition in digital forums (or the pride of seeing your product being adopted by the company). Tech companies not only present themselves as corporations that 'listen' but also benefit from free labour (Patterson 2016).

3.3. Exploitation of Labour

Following a libertarian discourse, the silicon doctrine promotes flexibility of contracts and schedules, arguing that they strengthen workers' autonomy and, ultimately, conciliation with their private lives. The flexibilisation of contracts in terms of hiring, labour management and dismissals has been a constant demand of the liberal and libertarian sectors, who found in the labour protectionism of social constitutionalism an obstacle to the development of their model. The libertarian narrative asserts that excessive labour regulation prevents quick reactions to economic eventualities. Protective laws slow down fast-hiring processes and make it difficult to implement immediate lay-offs, which in the opinion of the liberal and libertarian sectors compromise quick adaptations to market fluctuations

(McArdle et al., 2017). That is why the silicon doctrine calls for abandoning the old thinking scheme based on employer-employee duality, replacing it with what has been termed ‘start-ups of the self’ (Hoffman & Casnocha, 2013). For Hoffman, co-founder of LinkedIn, we, the subjects, should consider ourselves companies, and thus manage ourselves as such; our relationships and personal habits ought to be managed as if they were part of a branding strategy.

To understand the silicon doctrine in depth, it is necessary to look at the work model posed by digital platforms such as Uber or Deliveroo. According to these companies, the worker-entrepreneur owns the means of production, and as such provides services to clients, who access the services through the platform companies. These are mere facilitators of this exchange, limited to providing the necessary software for these services to be carried out, and charging a certain percentage, either to the client, to the entrepreneur or both. The link, and with it the responsibility between the employer and the platform, begins with the provision of the service and ends with it. Reality, however, is more complex. The digital companies are the ones determining the conditions of provision of the services, being able to suspend access to their platform in an arbitrary manner. They are the ones who evaluate the independent workers, besides being the only ones able to mediate between them and the clients. They set prices, establish standards and procedures. They determine routes. They control discourse and advertising. For the companies, all these signs point not to an employment relationship, but to a contractual relationship between two private companies, regardless of the obvious asymmetry that occurs between, for example, a driver and the digital giant Uber (Rosenblat, 2018). The outsourcing of workers’ expenses is hidden under the appearance of flexibility of time and contracts. Workers are now accountable for the fiscal, logistical and social security responsibilities that were once corporate duties. The digital precariat maintains a salaried relationship out of sight beneath a false contractual bond of independence (Webster, 2016).

Although digital platforms are rabidly arguing for freedom when it comes to fighting for the deregulation of labour markets, their surveillance practices point towards an extraordinarily restrictive interpretation of it. Amazon's distribution centres have been repeatedly identified as spaces of constant violation of the most basic labour rights (Cattero & D'Onofrio, 2018). The pressure on workers is extraordinary: frequent accidents, workers who do not even have time to urinate, and constant vigilance and security checks requiring time always at the worker's expense are part of everyday life at Amazon's warehouses (Evans, 2019). Amazon workers are required to be constantly available: it is irrelevant whether they are on the payroll, they must still be willing to accept hourly or daily contracts, with tight pre-warning times. Rejecting these contracts implies penalties that hinder subsequent hiring. That is a regulatory framework of flexibility and precariousness that benefits companies at a high social cost.

Companies like Uber or Deliveroo monitor their workers in real time (Clawson & Clawson, 2017). Workers' statistics are evaluated, measured, observed, managed. Amazon's Mechanical Turk, its digital work platform, has managed to advance one more step in surveillance technology, by automating it. Amazon algorithms assess the productivity of workers, deciding who will be hired again and who will not. Amazon is imposing an intensive surveillance regime on its workers at a level never before reached. Surveillance strategies include real-time recordings; access to mails, calls and browsing history; worker-tracking through GPS; extensive data analysis; and metadata obtained through mandatory wristbands (Moore et al., 2018).

Platform capitalist companies have conducted a powerful image cleaning campaign through their resolute rejection of Donald Trump's immigration policies in the United States. Globally, they have advocated for greater legal flexibility with workers' mobility, a thesis close to the free-movement-of-people claim. This liberal commitment does not present a conflict with the core of neoliberal thinking. On the one hand, it questions the legitimacy of states to decide on their borders. On the other, it

facilitates the provision of a qualified workforce, essential for the growth of technological hubs such as Silicon Valley. The positioning in favour of immigration reform that allows access to a greater volume of foreign labour forces in labour markets is consistent with the defence of the liberalisation of all types of markets and the free movement of goods and capital. As Fuchs (2015) points out, this liberal stance does not question the racialised structure of the global division of labour in the digital economy, since it only benefits the labour aristocracy composed of programmers, engineers and developers. The beneficial aspects of the silicon doctrine's social contract do not reach workers from mineral mines in Africa and Latin America, Chinese and Taiwanese factory workers and Indian and Philippine call centre workers. Silicon Valley companies push to facilitate the importation of highly qualified labour forces while fighting any kind of protectionist regulation and policies aimed at stopping industrial relocation (Pitti, 2018).

To summarise, there are three main pillars of the silicon doctrine. The first has to do with the defence of the doctrine's productive model based on the extraction of data from digital worker-users. Silicon Valley wants free access to data; in this sense, Silicon Valley is dedicating enormous political, cultural and economic efforts towards influencing the legislative evolution of everything related to the collection, processing and commercialisation of personal data. The second objective has to do with intellectual production, information and communication flows. Silicon Valley argues that these three areas should be regulated by private agents. The silicon doctrine proposes a model of libertarian governance of the network and the flows that take place within it. It criticises rights-based legislation as an obstacle to development, while proposing a legal framework based not on the guaranteeist ontology but on that of the commercial law. The third objective seeks to liberalise labour markets. It is an offensive against the current model of relations of production, which in Western Europe is characterised by the social welfare state and rule of law. Instead, it proposes a deregulated labour market, characterised by labour relations without collective bargaining, based on radical criteria of temporality, flexibility and finitude. Silicon Valley advocates a libertarian model in terms of hiring,

while at the same time imposes an intense digitalised surveillance regime on its workers. In short, the Silicon Valley Doctrine proposes a legal model consistent with its capitalist, neoliberal, neo-colonial and libertarian ideological project. Rather than being a novelty, the silicon doctrine re-envisions the neoliberal project, adapting it to the digital era.

4. Conclusions

This chapter has analysed the silicon doctrine or, in other words, the political and legal strategy proposed by Silicon Valley, the most successful version of digital capitalism. As mentioned earlier, the silicon doctrine is an ideological Frankenstein's monster. The libertarian head wants no state control while seizing and colonising all available data. Here we have John Locke's old liberal colonial attitude (Arneil, 1996), refashioned for the occasion. The frankensteinian liberal body tries to hide racial, gender and class discrimination behind a veil of calculated and utterly superficial demands. The monster's body language looks futuristic and progressive, but the will for power and monopolistic control oozes out of its pores. Finally, the neoliberal soul is what makes the silicon doctrine so powerful and unsettling. Neoliberalism's disdain for the empire of law, human rights, democracy or even empathy has been manifested in every big tech scandal for the last five years, from the blatant Uber and Airbnb violations of labour and housing laws, to Facebook's lies and Google's monopolistic domination. All the above has been extensively studied and discussed by a plethora of authors; however (to my knowledge), it has never been systematised as a doctrine. As a socio-legal scholar I found this quite troublesome. It is nearly impossible to propose alternatives to a reality we cannot identify. To conclude, with this chapter I tried to set the grounds of a theoretical place from where to think of a critical socio-legal doctrine that challenges the silicon doctrine.

Chapter 3 The Crimes of Digital Capitalism

1. Introduction

The European Union, among other polities, has highlighted how hegemonic digital platforms such as Amazon, Facebook, Google or Uber have disrupted the way we understand competition, democracy, information and data privacy (Klossa, 2019; Vestager, 2019). As detailed in a recent EU Commission report, the market power enjoyed by digital monopolies not only entails competition risks but also compromises consumers' well-being (Cremer et al., 2019). Another report, published by the German antitrust authority, described Facebook data extractivist business model as exploitative and abusive towards its users and a threat for the market overall (Bundeskartellamt, 2019). A similar opinion was reached by tribunals from countries as different as Australia (BBC, 2020), the US (Patel v. Facebook, 2019) or the UK (House of Commons, 2019). Multiple court rulings and public investigations have established that the data of more than 85 million of Facebook users was traded, exposed and commodified with political purposes (House of the Commons, 2019) in a violation not only of Facebook's terms and conditions but of multiple national and international laws and treaties. As I will further detail, data exploitation not only threatens user's privacy. Competition is also at risk; it has yet to be studied to what extent the more than 200 Google acquisitions during its short life will affect innovation, competition and consumers' well-being. Despite the undoubtedly useful technologies these companies have brought, the digital leviathans monopolising the cyber ecosystem have revealed themselves as the 'bad guys', as shown in innumerable judicial rulings at every legal level, within and outside the EU (Snider, 2018; Zuboff, 2019). Ursula von der Leyen, President of the European Commission, stressed right before being elected that 'It may be too late to replicate hyperscalers, but it is not too late to achieve technological sovereignty in some critical technology

areas' (2019, n.p.). Shortly after the European Commission presented its European data strategy with the undisguised intention of counteracting Silicon Valley's and China's data power, the United States Congress, concerned about the overwhelming power of tech companies, subpoenaed the top tech corporations to understand 'the degree to which these intermediaries enjoy market power, how they are using that market power, whether they are using their market power in ways that have harmed consumers and competition, and how Congress should respond' (Nadler, 2019, n.p.). Digital capitalists have lied (Levine, 2019), evaded taxes (Barrera & Bustamante, 2018), stolen data (Holloway, 2019), abused their dominant position, and have knowingly caused social damage by defending their position and the benefits of their shareholders against the collective interests of citizens all around the world. Why are we letting criminal corporations get away with it? Why, despite the institutional big words, little has been done in terms of new regulatory developments or a more effective enforcement? Why, regardless of the growing academic production looking at the multiple ways digital corporations cause social harm, do we still lack a comprehensive criminal theory presenting us the rationale behind them? I believe that this is due to two sets of reasons: academic and political.

Academically, this places on the spotlight one of the main deficiencies of legal studies (particularly, those related to criminal law): the excessive emphasis on isolated problematic and individual perpetrators, and hence the lack of structural analysis of the legal system as a whole and as a part of society. In this regard, it can be argued that the research looking at the socio-economic factors behind crime enjoys relatively good health, perhaps the best evidence of that is the fairly good amount of critical contributions around the globe (Agozino, 2018; Bernat & Whyte, 2019; Thomas, 2019). However, and despite several remarkable works, some of them further analysed here, theories of crime and deviance targeting not at the socio-economic conditions of certain groups but at the system of production as a whole are, at best, marginal. The lack of critical structural analysis within legal studies not only affects criminal law and criminology but every legal and political field. To illustrate,

since the publication of the *General Theory of Law and Marxism* in 1924 (Pashukanis, 1983) no other significant book outlining a general legal theory questioning the liberal legal dogma has been published in Westernised countries. This has helped to naturalise capitalism as the only thinkable system. This does not mean that the liberal hegemony hasn't been challenged and disputed. For instance, decolonial authors such as Boaventura de Sousa Santos have defended a legal pluralistic approach targeting at the colonial and Eurocentric core of liberal legal theories (2002). In the same vein, indigenous scholars such as Glen Coulthard (2014) and Moana Jackson (1995) have defended the decolonisation of the settler colonial states like Canada and New Zealand. For instance, Moana Jackson, in a brilliant critique of the New Zealand heavily racialised criminal justice system, defended the coexistence of Westernised law along with indigenous legal knowledge and practices. Also, Latin American political and legal theorists such as Alvaro García Linera (2011) and Carlos Wolkmer (2017) have outlined and eventually succeeded in proposing pluralistic constitutional frameworks that are respectful with indigenous and progressive values. However, as relevant as they are, those examples of critical legal thinking and acting have limited influence over Global North critical legal scholars.

Institutions and public servants suffer from a similar trouble, although with different ramifications. Authorities' legal responses to the acts of criminal corporations—from the gentrification processes unleashed by Airbnb (Brossat, 2018) to the violation of labour laws in the case of Amazon or Uber (Delfanti, 2019)—arrive late and without offering solutions to the multiple problems. There are mainly two explanations for this: The first one has to do with technical reasons, specifically with the rapid pace of the digital transformation. In an unprecedented short period of time, digital technologies, from mobile messaging to agriculture or finances, have become omnipresent in people's everyday life, and that applies to both the Global North and the Global South (Couldry & Mejias, 2019). The acceleration of technological processes has not found a correlation in liberal democracies archaic legislative processes, neither states have adequately funded and approached the digitalisation of its

bureaucracies and provision of services. As we have recently seen with regards to the Covid-19 crisis, this has prevented the public sector from adequately reflecting broader social and economic transformation. A new reality in which the digital sphere is not just a part of the everyday life but, in many instances, its basic infrastructure (Mulgan, 2017). Large digital corporations, meanwhile, have not wasted the opportunity. Making extensive use of the silicon doctrine (see Chapter 2), they have filled the loopholes in areas ranging from privacy to labour, education or even housing (Cohen, 2017). In cases for which there were laws, these same corporations have not hesitated to violate the current legislation in order to impose a new status quo.

Another fundamental set of motives that prevented clear action on the part of the authorities relates to ideological reasons and has to do with the nature of law in the bourgeois state. Law, understood as the set of legal relations that articulate the social life of a territory, is not exempt from ideological burden. It is no secret that liberalism and the market economy are two of the fundamental pillars of Global North's hegemonic liberal constitutionalism (Hurst, 1956; Gargarella, 2013; Schwöbel-Patel, 2017). Following Stučka (1988), it could be said that the law is not only not neutral but also serves as an instrument to guarantee private ownership of the means of production; facilitate the circulation of capital and its accumulation by the ruling classes while assuring a social formation firmly grounded in the exploitation of the working class. The capitalist class built its power not only by reifying thought law labour exploitation or private property but also by legitimising crimes or criminalising behaviours depending on its class interest. As Evgeny Pashukanis said: 'Criminal justice in the bourgeois state is organised class terror, which differs only in degree from the so-called emergency measures taken in civil war' (Pashukanis, 1983, p. 173). That is, criminal law is a political instrument, just like civil, commercial or constitutional law (Baars, 2017).

In this chapter I aim to analyse the structural relation of capitalism and corporate crime in the context of the digital economy—in other words, the criminal strategy in where the silicon doctrine stands.

Drawing on critical criminology, I shall engage with the following question: why do harmful corporate antisocial behaviours often fall out of the state's punitive scope? In sections two and three I will explore and outline a theoretical framework with which to analyse the crimes of digital capitalism related to data and competition, here termed data crimes. In order to explain the grounds where digital capitalism monopolistic structure stands, section three will look at the historical background of contemporary antitrust laws. Section four will explore the relation between corporate power and data crimes, as well as explain why data crimes are not cybercrimes. Section five will examine Facebook's data crimes. In section six I shall discuss the way public institutions are dealing with the violation of privacy and competition laws. The last section is devoted to the question of digital corporate criminal liability.

2. Corporate Crime and Social Harm

In a now distant 1949, Edwin Sutherland wrote 'White Collar Crime' (Sutherland, 1949), a path-breaking work that revolutionised modern criminology by switching the object of study from (mostly) underclass individuals to corporations and upper-class individuals. In an earlier work, Sutherland stated the importance of building an adequate framework from were to think those violations of the criminal code not ending in a criminal conviction:

> White-collar crime is real crime. It is not ordinarily called crime, and calling it by this name does not make it worse, just as refraining from calling it crime does not make it better than it otherwise would be. It is called crime here in order to bring it within the scope of criminology, which is justified because it is in violation of the criminal law. The crucial question in this analysis is the criterion of violation of the criminal law. Conviction in the criminal court, which is sometimes suggested as the criterion, is not adequate because a large proportion of those who commit crimes are not convicted in criminal courts. This criterion, therefore, needs to be supplemented (Sutherland, 1940, p. 5).

Sutherland proved how widespread corporate crime was among respectable corporations and how often their criminal behaviour was either little or not at all criminalised or prosecuted (Sutherland, 1945). Sutherland considered white collar crime as inherent and functional to the American capitalist social formation. These criminal behaviours were not as firmly prosecuted as other crimes despite being harmful to society. Sutherland explained it as the consequence of class solidarity between bourgeoisies. They were more prone to understand criminal behaviour of their peers, to not prosecute them and to eventually perpetrate the same kind of crimes. But as many have highlighted, the main lesson to extract from Sutherland's work is that crime is not limited to those criminal offences figuring in the criminal code but also includes those crimes of the powerful hidden under civil and administrative regulations (Sutherland, 1983). This sociological explanation was a turning point from other criminology works that at the time were trying to explain crime as a result of psychological, cultural, anthropological or even biological traits, making its contemporaries re-evaluate the role played by crime, upper-classes and institutions regarding social structures.

It is worth analysing the work of Frank Pearce, arguably, one of the most influential contemporary Marxist criminologists. In 1976, Frank Pearce published what would become a contemporary classic: *Crimes of the Powerful* (Pearce, 1976). This work picked up on Sutherland's work, complementing it with its critical Marxist perspective, as he later explained (Pearce, 1981): white collar crimes were not only functional and beneficial to the upper classes as a human group but also as a class. Unlike Sutherland, Pearce did not think that white collar crimes were treated more leniently by the state as a result of upper-classes social bounds and shared cultural mind-set but as a result of a deliberate political strategy intended to reinforce bourgeois class domination (Pearce, 2015). Thus, for Pearce, criminal law in liberal states was an ideological instrument designed to reinforce class oppression. This was evidenced by the fact that flagrant and frequent corporate criminal behaviours were not criminalised, falling outside the punitive scope of the state, while a tough-on-crime approach was being taken on petty crimes, more likely committed by working-class individuals, triggering the mass

incarceration era. Pierce was an avid reader of the Marxist philosopher Louis Althusser. In an extraordinarily influential work, Althusser analysed the Ideological State Apparatuses, which he defined as the concrete form of the capitalist ideology:

> An Ideological State Apparatus is a system of defined institutions, organizations, and the corresponding, practices. Realized in the institutions, organizations, and practices of this system is all or part (generally speaking, a typical combination of certain elements) of the State Ideology. The ideology realized in an ISA ensures its systemic unity on the basis of an 'anchoring' in material Junctions specific to each ISA; these functions are not reducible to that ideology, but serve it as a 'support' (Althusser, 2014, p. 77).

For Althusser, 'all Ideological State Apparatuses, of any kind, contribute to the same result: the reproduction of the relations of production' (Althusser, 2014, p. 144). However, Althusser specifically underscored the importance of the Legal Ideological State Apparatuses, stating that 'the law is the Ideological State Apparatus whose specific dominant function is, not to ensure the reproduction of capitalist relations of production, which it also helps ensure (in, however, subordinate fashion), but directly to ensure the functioning of capitalist relations of production' (Althusser, p.169). Therefore, for Pearce, as well as for his contemporaries, the act of regulating and criminalising behaviours was a political act, rather than a technical issue, revelatory of the ideology underpinning the capitalist social formation (Schwendinger & Schwendinger, 1977). While, in order to understand and explain the criminal nature of the white collar crimes, Sutherland privileged the analysis of offender's criminogenic behaviours, Pearce highlighted the important role the state plays shaping and defining criminal policies. Pearce put his focus of attention on the social structures where legal relations were built. That is why Pearce identified the crimes of the powerful as a set of behaviours solidly inserted in the mechanics of the capitalist political economy of which the state was part of. Thus, Pearce exhibited how the bourgeois criminal law responds to the interest of the ruling class, as a class and not as a human group.

Pearce's work was extraordinarily relevant and continues to be so. Drawing upon Pearce, Paddy Hillyard and Steve Tombs (Hillyard & Tombs, 2007) proposed a move from the notion of crime to the one of social harm. For them (and for many Marxist scholars), crime has 'no ontological reality' (Hillyard & Tombs, 2007, p.18), that is, crime does not exist as a natural phenomenon. Instead, it is socially constructed. Hillyard and Tombs demonstrated that capitalist social construction of crime, while consisting of many petty events, 'excludes many serious harms' (2007, p. 12), for instance, environmental pollution caused by industries. For them, the Legal Ideological State Apparatuses, which include criminal law, would legitimise what capitalists consider crime control, while avoiding punishing other harmful behaviours, allowing not only a hard take on crime but 'a myriad of other power relations' (Hillyard & Tombs, 2007, p. 15).

Among others who have also followed Pearce's contributions we find Gregg Barak, who was responsible for editing *The Routledge International Handbook of the Crimes of the Powerful* in 2015, which reframed Pierce's work in the globalised 21st century. Crime, rather than being an obstacle to capitalist globalisation, is making it possible. In the same tone, in 2014, Dawn Rothe and David O. Friedrichs published a brief book looking at crimes committed by corporations at a global scale. In *Crimes of Globalization*, we find a description and analysis of corporate activities resulting in deaths, murders, environmental destruction, labour exploitation or even state bankruptcy (Rothe & Friedrichs, 2014): activities only possible in a neoliberal globalised context. In a time where the pernicious consequences of climate change are becoming more and more perceptible, both for the general public and governing institutions, there is an increasing demand not only for further corporate social responsibility but also for their legal and criminal liability for their environmental crimes. As a result, we are witnessing a proliferation of analyses focused on environmental crimes, demonstrating how the bourgeois law, while protecting the ruling class' assets, allows the destruction and appropriation of the commons (Lynch, 2020).

In 2018, Steven Bittle, Laureen Snider, Steve Tombs and David Whyte edited a book titled *Revisiting Crimes of the Powerful: Marxism, Crime and Deviance*. The contributions of this book highlight the intimate relation between corporations, crime and the capitalist social formation. The authors revisit Pierce's classic, fully engaging in a Marxist theoretical debate around crime, ideology and the political economy of criminalisation. A significant share of the contribution looks at the 'crimes of globalisation' from diverse but complementary perspectives. For instance, Ignasi Bernat (2018) analyses the 2008 Spanish economic crisis, regarding it as a crime committed by rentier capitalists. Gregg Barak (2018) scrutinises global capital, while Biko Agozino (2018) offers a 'General Theory of Crimes of the Powerful' through his study of imperialism. In sum, the collective work establishing a dialogue with Pierce, not only as criminologists looking at corporate crime but as Marxists.

Along the same Marxist criminology line, Grietje Baars and Harry Glasbeek have taken a historical approach to analyse the intimate relation between capitalism and the legal form. Baars details how the capitalist class has used law to gain and reinforce its power. Departing from a Marxist theoretical discussion that follows closely Pashukanis's thinking, Baars identifies law as an intrinsic element of the capitalist social formation. While other authors also contemplate law in its emancipatory dimension (Latorre et al., 2015), Baars, on the contrary (and with it, following Pashukanis) found law unrecoverable: 'In conclusion, I argue that while emancipation from corporate power cannot be achieved through law, its promise lies in the alternatives (such as counter-systemic activism, building alternative modes of production, abolitionist and transformative justice work) and, with that, human emancipation' (Baars, 2019, p. 13).

Glasbeek has focused on how capitalist legal infrastructure shields corporations, making the capitalist class unaccountable for its crimes (Glasbeek, 2018). For Glasbeek, corporate impunity is the logical consequence of the neoliberal dogma as this doctrine considers corporations as the sole creators of wealth. In a similar vein, Tombs and Whyte (2016) pointed out at the intimate

relation between the modern state and corporations: 'Corporations are institutions that are created for the mobilisation, utilisation and protection of capital. As such, they are wholly artificial entities whose very existence is provided for, and maintained, through states' legal and political institutions and instruments, which in turn are based upon material and ideological supports' (2015, p. 44).

Other authors are also weaponising Marxism to evaluate labour exploitation under the latest versions of capitalism (and evaluating whether labour exploitation could be considered a crime) (Davies & Ollus, 2019). These theoretical and empirical contributions are reinvigorating the debate, deepening in the contradiction of bourgeois law and liberal state's inability to control the excesses of the neoliberal dogma (Headworth & Hagan 2016). It can be said that the impunity enjoyed by the speculators responsible for the 2008 economic crisis brought Marxist debates back to the front-line of criminology, well represented in the above-mentioned or new journals such as the *Journal of White Collar and Corporate Crime* (first released in January 2020).

The current Marxist critical criminology focused on the study of corporate crimes has left us some fundamental learnings that are worth highlighting. As Marxist scholars repeatedly state, law serves the interest of the dominant class (Baars, 2019; Pearce, 1976). One of the most prominent examples of the legal form bias is the existence of corporations, a legal fiction widely used by the bourgeois to speculate and extract surplus value from workers. This legal person, while bearer of similar rights to those of the natural persons, is not criminally liable in most of the cases and, therefore, enjoys what Baars has described a structure of irresponsibility (2019). Thus, when criminal corporations exploit workers, they would not be acting as deviants but as functional and necessary elements of the system. Also, Ideological State Apparatuses—and with it the capitalist social formation—are articulated through law, mediating with it a significant part of the economic and social life. The legal form is, in turn, the materialisation of capitalist relations of production. This naturalises socially harmful

behaviours if they benefit the interest of the capitalist class, for instance, environmental destruction or the exploitation of the working class. Finally, institutions involved in law making and enforcing processes are not neutral. The legal construction of crime does not respond to arbitrary acts of public servants; it is indeed a deliberated and calculated political act responding to very specific interests, those of the capitalist class. The case of corporate impunity is illustrative of the control of the latter over state punitive technologies. Of course, this is just among the many examples probing how the criminal justice system serves the interest of the powerful, white supremacy (Zack, 2015) and patriarchal domination (Roberts, 2016). To sum, we can define the crimes of the powerful as those behaviours that, albeit considered socially harmful, are not prosecuted or are prosecuted in a lenient way as they are functional to the capitalist social formation and benefit the bourgeoisie as a class. The intention of this chapter is to defend the case for the criminalisation of digital corporations' socially harmful behaviours that are data crimes. But before we move to the specifics of data crimes, we must bring the broader socio legal context in where digital monopolistic corporations nested.

3. The Neoliberal Governance of Monopolistic Capitalism

3.1. Antitrust

In 1905, the United States Supreme Court ruled against the 'beef trust', a meatpacker's cartel controlling the meat market, whom were found to be fixing prices for their benefit (Swift v. United States, 1905). This was a victory for the federal government as the Court ruling recognised Congress' power to regulate monopolies, and thus, to intervene in the economy (Corwin, 1932). This landmark ruling was the beginning of the period known as the progressive era (1890s-1920s) and was followed by other key Court rulings that reshaped US capitalism: Northern Securities v. United States (1904), Standard Oil of New Jersey v. United States (1911); United States v. American Tobacco (1911). Progressive liberal constitutionalism puts clear limits to an excessive accumulation

of capital in the hands of corporations by using multiple legal arguments ranging from the protection of competition to the defence of inalienable individual and collective rights and freedoms (Wu, 2018). These progressive tendencies were accentuated after the 1929 crash and World War II (Novkov, 2001). The nineteenth century version of unchained capitalism was overturned in the US by a politically active state and courts who were arbiters of the truce between workers and capital (Rahman & Thelen, 2019).

On the other side of the Atlantic, things were moving in a different but parallel manner. The political left, organised through unions and parties with parliamentary representation, were progressively gaining power, especially since the end of World War I (Thorpe, 2015). After a period of brutal repression, progressive political parties were increasingly recognised as legitimate actors by the ruling classes (Przeworski, 1986). On the one hand, the socialist political parties' participation in parliamentary politics lowered the revolutionary expectations of many but, on the other hand, secured significant social and economic rights (Graham, 2006). However, the influence gained by progressive parties in liberal democracies does not really explain the apparition of the twentieth-century European welfare state. Why did it happen?

First, the apparition in 1917 of the Soviet Union, a socialist alternative for the workers to the bourgeois liberal democracy, fed a new generation of unionist and political organisers. Workers' unions and party members could be counted by millions in Spain and Germany (Fowkes, 1988). They were ready to challenge the dominant capitalist status quo, proposing revolutionary laws, organising strikes or even taking down the government proclaiming the triumph of the communes (Spain 1934 and 1936-39) or the council republic (Munich Soviet Republic of 1919) (Broué, 2004). Secondly, the rise of far-right movements in the 1930s in countries as different as Hungary, Germany, Spain, Japan or the United States shook the foundations of world and local politics, enacting unexpected popular fronts aligning together liberals, socialists, anarchists, communist and even Christian-democratic

parties against governments controlled by the German National Socialist Party or the Italian National Fascist Party (Jackson, 1990). Hence, moved either because of honest convictions or just interest, dominant classes were prone to negotiate with workers' political organisations the grounds of a new social contract. Some countries such as Italy constitutionalised a truce between work and capital, establishing with it what has been named as the social state with the antifascist constitution of 1947 (Sassoon, 2016). Antonio Negri (1994) described this process as the constitutionalisation of work/labour exploitation and the reconstruction of capital, now under certain restrictions such as the recognition of workers' rights and a limited wealth distribution. Some other westernised countries such as the UK took a social democratic approach to the economy and undertook the nationalisation of key economy sectors, from railways to energy and communications (Millward & Singleton, 2002). It then can be stated that the capitalist legal infrastructure of westernised countries was modulated. On the first place, some restrictions on excessive capital accumulation were effectively enforced via a real increase of salaries. Secondly, states ensured a generalised access to services such as education, health or transportation, being that the consequence of a wider recognition of social rights (Thelen, 1991). This complex legal machinery was dismantled during the neoliberal revolution, unleashing the flow of capitals, allowing capital accumulation and, fundamentally, replacing public law for corporate self-regulations (Bresser-Pereira, 2010). During the mid-70s, the US influential Chicago School, well represented by academics and jurists Robert Bork (1978) and Richard Posner (1979), argued against the progressive structure-focused approach to antitrust and, following the neoliberal dogma, proposed to replace it with the Chicago price theory. As Lena Khan has pointed out, paraphrasing Posner:

> The essence of the Chicago School position is that "the proper lens for viewing antitrust problems is price theory." Foundational to this view is a faith in the efficiency of markets, propelled by profit-maximizing actors. The Chicago School approach bases its vision of industrial organization on a simple theoretical premise: "[R]ational economic actors working within the confines of the market seek to maximize profits

> by combining inputs in the most efficient manner. A failure to act in this fashion will be punished by the competitive forces of the market" (Khan, 2016, p. 719).

The Chicago School legal ideological production was promptly adopted by conservative judges at the US Supreme Court just to become mainstream policy under the Ronald Reagan presidency. Now I will briefly describe some of the key aspects of the legal ideology that effectively began in the 70s, took control in the 80s and then consolidated in the 90s, resulting in the neoliberal rule of law.

3.2. The Neoliberal Rule of Law

The neoliberal rule of law could be described as the corporate-friendly-antipublic regulatory governance deployed by neoliberal governments since the 1970s. It comprehended a variety of policies and legal strategies intended to strengthen the private sector while stripping down to the minimum the public sector. Among some of those techniques of neoliberal governance we find the privatisation of public assets, the war on unions or the dismantlement of the antitrust and high finances regulatory framework. The privatisation of public monopolies was especially relevant with regards to the rise of privately owned but state backed telecommunication monopolies in countries such as France (Orange, formerly France Telecom) or Spain (Telefónica). There, formerly public assets became gigantic corporations profiting at a global scale (Bulfone, 2019). This came along with the strengthening of corporate rights. To exemplify this, since the 2010 US Supreme Court landmark decision, Citizens United v. the Federal Election Commission, corporate rights include free speech, especially relevant to tech companies such as Facebook.

A parallel process to the dismantlement of public monopolies was the privatisation of public services. Public utilities, such as water plants, the welfare system, aspects of the public education system or even of the criminal justice system were externalised. The same happened to the internet, which was privatised between 1990 and 2000 (Shah & Kesan, 2017). That led not only to private management

of the digital infrastructure but also to the colonisation of what is produced in the cyberspace, including what is today considered the most important public utility: data. This has not only impacted the economy but also the collective imaginary. Another of the neoliberal revolution's priorities was to undermine the power of unions, ending with it a tradition of collective bargaining regulated by public law. The public labour law framework was replaced by a corporate-friendly regulatory framework, where private companies defined the contractual and working conditions between them and their workers, with little or no state overseeing whatsoever. As we will see in the next chapter, this precarisation of working conditions and labour law, along with the extraordinary development of technological surveillance tools, settled the grounds for today's unprotected situation of the digital proletariat (Scholz, 2017).

The neoliberal rule of law institutionalised some forms of previously illegal macro speculative flows. For some, the process which unleashed the movements of capitals in the early 2000s is explained as the consequence of a deregularisation, or more appropriately, neoliberal governance of the financial sector in the 80s and 90s (Orhangazi, 2015). Though, in fact, what happened was a transfer of sovereignty over economic matters, from States to Corporations. Financial providers, banks and venture funds were granted self-regulatory powers (Li & Zhou, 2015). Despite the incalculable social harm caused by the criminal speculative activities of financial providers and creditors in the 2007-2008 Global Financial Crisis, just 47 bankers went to jail (half of them from Iceland) (Noonan et al., 2018). Regardless of the tremendous impact of the crisis and the theatrical trial of Bernie Madoff (Eren, 2017), speculative business remained open as usual, and venture capital firms reoriented their capital from the land rentier economy to the tech rentier economy (Sadowski, 2020). Taking advantage of the situation of crisis and confusion caused by the collapse of the dot-com bubble and the 2008 crisis, tech corporations grew in a world without limits to the circulation of goods and capital and characterised by the rise of tech rentier capitalism controlled by global speculators (Birch, 2020). These corporations have comfortably deployed their activities in open markets, with

weak unions and workers rapidly losing formerly solid rights. Digital capitalists have skilfully exploited the neoliberal state's legal architecture, and when they have been strong enough, they have criminally challenged it, taking advantage of globalisation or, in other words, the erosion of state sovereignty and the fragmentation of the working class (Thelen, 2018).

The neoliberal rule of law model has been incapable of intervening and regulating the digital economy or prosecuting the crimes of digital corporations. So far, the timid (and never punitive—although this might change) measures of the remnants of federal antitrust agencies are unable to stop the illegal activities of powerful corporations. Companies that, like Google, dominate the global market obtain huge profits from this situation and a nearly absolute technological dominance in fields such as ML. But perhaps what is more important is that the neoliberal state has been ideologically disarmed, having stripped itself off the most fundamental sovereign instruments to intervene in national economic processes that may occur within its borders. This disempowerment came with no adequate legal instruments to force corporations to comply with the law nor make them accountable for its violations. As a result, big tech monopolists can impose their legal ideology, the western version of digital capitalism—or, as I have called it, the silicon doctrine. Perhaps, this scenario of dystopian digital dominance may explain the state's antitrust backlash. Many scholars, activists and political organisations are turning back to the study of the old legal progressive era (Medvedovsky, 2018; Khan, 2018b), and not only that. As Campbell Jones has stated (2020), the return of economic planning is here. Formerly vilified nationalisation and economic planning policies are attracting attention and are now being seriously discussed. Hence, old ideas and new formulas are being considered in order to counter technological capitalism and its elusive power. Disciplines as different as politics, economy, communication, engineering, urbanism or sociology are taking part. Now we are prepared to deal with the relevant question: What are the crimes inherent to digital capitalism?

In the next section I shall explain what I have labelled as data crimes. This overarching concept encompass two kinds of criminogenic behaviours from which digital corporations have especially benefited. The first kind of corporate crimes has to do with privacy violations and data mismanagement. The second kind relates to the breaching of competition rules. These two types of violations have been traditionally presented as disconnected with no relation of interdependency whatsoever. But this has changed at the hands of digital capitalist who, as we are about to see, have been using their control over data in order to bully their way to market dominance.

4. Data Crimes

Orla Lynskey was among the few scholars who, as early as 2014, called the attention over the key role data was playing in the shape of a new form of corporate power (Lynskey, 2014). Her works analysing the political and legal roots of the General Data Protection Regulation (2016) laid the foundation of her conceptualisation of a new and influential form of corporate power: data power. The concept is used to describe the power digital corporations exert on politics, society and markets relying on their dominant position over data management. She justified her decision of using the notion of data power instead of others such as platform or market power because:

> Whereas market power concerns the constraints placed on a company by its competitors and consumers on a particular market and on the economic harms that may follow from the exercise of such power, a more comprehensive conception of power is needed in order to capture adequately the power data-intensive companies wield. Data power is a multifaceted form of power available to digital platforms, arising from their control over data flows. As online platforms act as an interface between their various constituents (content providers, advertisers, individual users, etc.), they are in a unique position to control the flow of information between participants in the digital ecosystem, and to gather data about the actions of each of these parties in the digital sphere (Lynskey, 2019, p. 196).

As Lynskey (2019) has successfully explained, the control of users' data held by digital corporations grounds their dominance over markets as well as strengthen their political influence. For her, a revaluation of data protection and competition laws (Cabral & Lynskey, 2017) is hence necessary in order to adequately regulate the rising 'platform power' (Lynskey, 2017). However, one question arises: is that even possible? Some of the biggest tech companies by their capitalisation—such as Apple, Alphabet, Microsoft, Facebook and Amazon—have achieved their dominant position through the violation of data and competition laws. Despite being found guilty, those companies not only have not stopped their activities but persist in them. As we will see, countless court rulings, institutional reports and academic works demonstrate that the relationship between digital corporations and crime is not casual but structural.

My intention with this chapter is to go one step further from Lynksey's notion of data power, a situation of corporate domination which, in Lynskey's opinion, could be regulated (2017). Instead, I propose to reconsider data power as the consequence of a deliberate criminal strategy, fundamental to digital capitalism, inseparable from its business model and, thus, uncorrectable with conventional means. I have named this criminal strategy data crimes. Data crimes relate to upstream and downstream data operations, data extraction, trading, management, processing and analysis (among others). That is, data crimes involve a variety of behaviours, processes, mechanisms, actions and actors, all of them necessary to perpetrate an abusive, unlawful and exploitative data extraction. These operations aim to reach a socially harmful market domination. In short, data crimes are the corporate violation of data and competition rules, aiming to seize a socially harmful dominant position. However, before I proceed with my argument, I shall clarify some important points that are central to understand the notion of data crimes and how this form of criminality relates with the material conditions of digital capitalism's globalised political economy.

For some, the cyberspace, and with it the digital economy, shouldn't be regulated following the same rules as the 'real world'. This position is well represented by John Perry Barlow's 'Declaration of the Independence of Cyberspace', in which Barlow fiercely advocates for a libertarian utopian cyberspace, completely free of state interference:

> Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of Mind. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather. We have no elected government, nor are we likely to have one, so I address you with no greater authority than that with which liberty itself always speaks. I declare the global social space we are building to be naturally independent of the tyrannies you seek to impose on us. You have no moral right to rule us nor do you possess any methods of enforcement we have true reason to fear. Governments derive their just powers from the consent of the governed. You have neither solicited nor received ours. We did not invite you. You do not know us, nor do you know our world. Cyberspace does not lie within your borders. Do not think that you can build it, as though it were a public construction project. You cannot. It is an act of nature and it grows itself through our collective actions (Barlow, 1996).

At the time Barlow's wrote his Declaration, it was not difficult to see cyberspace as a utopian immaterial place, disentangled from the 'real world'. However, today we are aware of how deeply connected are the digital and analogical spheres by the same material conditions of exploitation. For instance, the cyberspace would not exist without what has been labelled as the physical internet, which among other things includes networks, data centres, energy plants and, of course, the millions of workers feeding the machinery of digital capitalism. Despite all the evidence, Barlow's cyber-libertarianism has been Silicon Valley's mantra for years, producing today's disastrous situation of corporate dominance. Following Joseph Sommer (2000) and Frank H. Easterbrook (1996), I also reject the idea of cyberlaw as a specific and differentiated body of law. Cyberspace is as material as the house you live in or the road you often drive. It is a space that, although digital, is hosting palpable material relations of production. For instance, as I am writing these lines under the coronavirus

lockdown, thousands of workers have been told not to go to their working places and, instead, telecommute. Cyberspace exists, for sure, but as a very material place that should be subjected to the same rule of law as anywhere else. Hence, data crimes should not be considered as cybercrime but as crime. It is an extremely serious form of criminality causing tremendous social harm, affecting the social and economic life of countries and continents, limiting freedom and technological development (Couldry & Mejias, 2019; Wang, 2018). I am conscious that the taxonomy of crimes I am proposing entails multiple nuances and raises relevant technical questions: Should data crimes be considered a crime? If there is a crime, where does it occur? What principle should be followed to prosecute such kind of crimes? Territoriality? Active personality? Passive personality? These are utterly important questions that, given the nearly universal extension of the digital business, the newness of our coexistence with the digital sphere and the pace of the technological changes, make difficult a single answer. There is also another thing to consider. As we will see in section eight, corporate criminal liability—and more widely speaking, the way we think of criminal law—has been mediated by the capitalist ideology. This has helped to shape what Baars has labelled as a structure of corporate irresponsibility. Thinking about the criminalisation of data crimes entails considerable technical challenges, but before we can even consider those technical aspects, we should carefully think about the nature of the crimes of digital capitalism. That is the aim of the following sections. In sections five and six, I shall examine how digital corporations have violated privacy and competition laws. For this, I will scrutinise Facebook, one of the most representative companies of digital capitalism. Also, section seven will detail the way states and regulators are unsuccessfully trying to contain the criminal activity of criminal corporations.

5. Data Privacy

Until recently, the different regulatory frameworks regarding privacy rights were mostly intended to protect individuals from state surveillance. As early as 1970, the nascent European Community

already had a robust data protection legal framework, reflecting the legal development of the Federal German Republic, prone to demonstrate its 'democratic' credentials in contraposition of the Democratic German Republic accused of operating mass surveillance over its population (Flaherty, 2014). The right-based European legal regime firmly advocated for a strong take on citizens over their data and privacy; however, the legislation was mostly targeting the public management of data, and hence it was insufficient to tackle the corporate data revolution. The regulation of data privacy and data rights in the US was, although different in its motivation, similar in its results. The public management of data was regulated at a federal level, whereas the private management of data remained fragmented and regulated at a state level (for instance, the California Consumer Privacy Act of 2018) as a result of intense corporate lobbying (Hartzog, 2018). So, by the time that the surveillance capitalism arrived, making data one of the most valuable assets—and consequently followed by a plethora of data-thirsty corporations—public authorities were disarmed and unprepared for the digital capitalist offensive.

In 2012, amid a palpable evolution of the digital economy, the European Commission proposed a comprehensive reform of its data protection rules which would result in the General Data Protection Regulation. The text, known as General Data Protection Regulation, consistent with previous European legislation on privacy, proposes management of data that, while not opposed to its processing and commodification, does require the express consent of users, conceived not as consumers but as citizens with rights (Schwartz, 2019). In the European Union the right to privacy is considered a fundamental right, a key aspect of the human dignity. That is the ideological inspiring principle of the General Data Protection Regulation:

> The protection of natural persons in relation to the processing of personal data is a fundamental right. Article 8(1) of the Charter of Fundamental Rights of the European Union (the 'Charter') and Article 16(1) of the Treaty on the Functioning of the European Union (TFEU) provide that everyone has the right to the protection of personal data concerning him or her (General Data Protection Regulation, 2016, Par. 1).

And even more important is what is mentioned in Article 8 of the Charter of Fundamental Rights of the European Union (2012):

> Article 8 - Protection of personal data 1. Everyone has the right to the protection of personal data concerning him or her. 2. Such data must be processed fairly for specified purposes and on the basis of the consent of the person concerned or some other legitimate basis laid down by law. Everyone has the right of access to data which has been collected concerning him or her, and the right to have it rectified. 3. Compliance with these rules shall be subject to control by an independent authority.

Hence, from a legal perspective, a privacy violation is a violation of a fundamental right, at least for those living in European Union. For its part, the US was following a different path. A document written by the EU's directorate general for internal policies with the explicit title of *A Comparison Between US and EU Data Protection Legislation for Law Enforcement Purposes* pointed at the gap between the EU's and US's legal frameworks:

> The most prominent and important divergence concerns the constitutional protection of personal data. While data protection and privacy are fundamental rights in the EU and are also applicable in the LE context, there is no equivalent protection in the US. The EU's understanding of these rights have been shaped since the 1970s by comprehensive case law of the ECtHR and was been further developed in recent years through important EU instruments such as the Directive 95/46/EC, the TFEU and the Charter of Fundamental Rights, as well as the EU courts' case law. The US, with its restrictions to the protection of the Fourth Amendment, through the Third Party Doctrine, and the exclusion of non-US persons from both the Fourth Amendment and the Privacy Act protection, follow a very different approach, which is contrary to the EU's perspective of privacy and data protection as comprehensive fundamental rights (Boehm, 2015, p. 67).

The European data protection rules became the role model of digital socio-liberal legislation. It does not prevent corporations from managing private data but, in coherence with the comprehensive EU's social European Human rights frameworks, protects and empowers citizens from blatantly abusive

corporate behaviours, conferring them agency over they data, as well as confirming EU's jurisdiction, and hence legal protection, over EU citizens' data. This agreement, which received the support of the broad European Parliament's ideological spectrum, was harshly opposed by Silicon Valley, triggering a legal and political war between EU institutions and Silicon Valley, evidencing with it a wider geopolitical conflict. At the end, as has been revealed, what was in dispute were the terms under which European users' data—one of the most valuable assets of the digital economy—would be harvested. Now, I will briefly summarise some aspects of Facebook's litigation related to its, in words of the Germany's national competitor regulator, exploitative business (Bundeskartellamt, 2019).

5.1. Facebook and Privacy Violations

Facebook is one of the corporations obtaining great benefit from breaching privacy laws (House of Commons, 2019). It has built a virtual monopoly on communication out of the voluntarily and involuntarily exploitation of users' and non-users' data. Moreover, it can be said that privacy violation is written in its DNA. Facebook predecessor was FaceMash, an extraordinarily simple web app. It displayed the photo of two Harvard students at a time, allowing its users to choose the 'hottest' of them (Kaplan, 2003). His coder, back then Harvard undergraduate Mark Zuckerberg, was accused by the Harvard's Administrative Board of copyright and privacy violation as he used, without permission, photos from nine Harvard houses uploaded to the web. In declarations to a Harvard newspaper, Zuckerberg stated that 'I understood that some parts were still a little sketchy and I wanted some more time to think about whether or not this was really appropriate to release to the Harvard community' (Kaplan, 2003).

Facebook's criminal history could be divided into three different periods. Disruption (2004-2007), Suspicion (2008-2015) and Domination (2015-Present). The distinction of these three periods is based on relevant episodes of Facebook's long history of litigation, which are in fact landmarks of

contemporary digital capitalism. Each of them represents a qualitative leap in Facebook's scale of privacy violation. Despite the FaceMash precedent, when Facebook appeared in 2004 the public was not really concerned with privacy issues. In fact, media and society alike were charmed with Facebook's big leap forward in social networking. In an extraordinary short period, Facebook surpassed its direct competitor, the microblog site MySpace (Dwyer et al., 2007). Controversy arose in November 2007, just one month after Microsoft heavily invested in the company (Frommer & Molla, 2017). Facebook launched Beacon, a new advertisement system. Third party sellers provided Facebook with information about online activities of its clients, mainly purchases. Facebook then contrasted that information with its data base and broadcast that information through its users' newsfeed and profile, without user's consent (Perez, 2007; Stone, 2007). In other words, Facebook was profiting with users' private data. This resulted in a class-action lawsuit (Lane v. Facebook) ending in a settlement in which Facebook agreed to create a $9.5 million fund for privacy foundation, something that was widely criticised by privacy rights organisations such as the Electronic Privacy Information Center, who stated that '[w]ith this structure, the proposed Privacy Foundation will not be sufficiently independent of Facebook to serve as an effective tool for consumer privacy protection' (EPIC, n.d.).

The second phase on the Facebook's criminal saga on courts began with a complaint filled before the Irish Data Protection Commissioner in 2013 by one of its users, a Law student named Max Schrems. Schrems, who was also privacy activist, was concerned with his data being transferred from Facebook's subsidiary in Ireland to Facebook's data servers which were in the US. As EPIC reported:

> [Schrems] contended in his complaint that the law and practice in force in that country did not ensure adequate protection of the personal data held in its territory against the surveillance activities that were engaged in there by the public authorities. Mr Schrems referred in this regard to the revelations made by Edward Snowden concerning the activities of the United States intelligence services, in particular those of

> the National Security Agency ('the NSA'). (…) Since the Commissioner took the view that he was not required to investigate the matters raised by Mr Schrems in the complaint, he rejected it as unfounded. The Commissioner considered that there was no evidence that Mr Schrems' personal data had been accessed by the NSA (Epic, n.d.).

Schrems appealed the rejected complaint before the Irish High Court, who referred several questions to the Court of Justice of the European Union. What started as an individual complaint against a potential privacy violation ended in a judicial decision of global impact. The 2014 *Schrems v. Data Protection Commissioner* Rule of the European Court declared the Safe Harbour privacy principles framing the data flows between the EU and UE invalid. In opinion of Yves Bot, European Court's advocate general:

> [T]he scale and scope of United States surveillance programmes raised concerns over the continuity of protection of personal data lawfully transferred to the United States under the safe harbour scheme. It observed that all companies involved in the PRISM programme, which grant access to United States authorities to data stored and processed in the United States, appear to be certified under the safe harbour scheme. According to the Commission, this has made the safe harbour scheme one of the conduits through which access is given to United States intelligence authorities to the collecting of personal data initially processed in the European Union. (…) It follows from these factors that the law and practice of the United States allow the large-scale collection of the personal data of citizens of the Union which is transferred under the safe harbour scheme, without those citizens benefiting from effective judicial protection (Schrems v. Data Protection Commissioner, Opinion of the General Advocate Bot, pars. 157-158).

The Schrems case embodied the transition to a new era of global data politics. It became clear that Facebook was a major actor in the new geopolitical game where data was fiercely disputed. Facebook's next data privacy scandal arrived just two and half years later, opening the era of constant massive privacy violation. On May 7, 2017, an article published by Carole Cadwalladr in *The Guardian* flagged the attention of the global public with resounding words: 'A shadowy global operation involving big data, billionaire friends of Trump and the disparate forces of the Leave

campaign influenced the result of the EU referendum. As Britain heads to the polls again, is our electoral process still fit for purpose?' (Cadwalladr, 2017). That was the beginning of the Cambridge Analytica scandal, a case that changed forever the way we understand politics, media, populism and of course data and privacy. A year and half later, on October 24, 2018, the Information Commissioner Office (ICO) (UK's privacy watchdog) fined Facebook with £500.000 (the maximum fine) for its involvement in the Cambridge Analytica scandal. As reported on the ICO's 'Investigation into the use of data analytics in political campaigns' places (ICO, 2018), the data of around 87 million Facebook users, of which one million were UK citizens and 300.000 Australians (BBC, 2020), was harvested by consultancy company Cambridge Analytica using deceptive tactics and with the complicity of Facebook. The data was used to micro-target users with private messages and content during two specially and contested political campaigns: the UK EU Referendum and the 2016 US Presidential election. In a declaration before the Digital, Culture, Media and Sport International Grand Committee, Elizabeth Denham, ICO's commissioner, stated:

> We fined Facebook because it allowed applications and application developers to harvest the personal information of its customers who had not given their informed consent—think of friends, and friends of friends—and then Facebook failed to keep the information safe. […] It is not a case of no harm, no foul. Companies are responsible for proactively protecting personal information and that's been the case in the UK for thirty years. […] Facebook broke data protection law, and it is disingenuous for Facebook to compare that to email forwarding, because that is not what it is about; it is about the release of users' profile information without their knowledge and consent (House of Commons, 2019, p. 23).

In 2018, the Electronic Privacy Information Center, a well-respected privacy rights advocate, submitted an amicus curiae brief in a 'privacy suit brought against Facebook to challenge the company's use of cookies to track Facebook users even after they have logged out of the platform' (Perrin Davis v. Facebook). Facebook's product management director admitted the fact but considered it essential to improve 'product and services' (Baser, 2019). On January 29, the *New York Times* reported that Facebook settled a lawsuit that would be costing the company around

$550 million (Singer & Isaac, 2019). Facebook violated Illinois privacy legislation with its facial recognition tool; basically Facebook enabled their auto-tagging tool without consent, and with it harvested a massive amount of sensitive biometric data (Patel v. Facebook, 2019). The United States Court of Appeals for the Ninth Circuit stated that '[T]he panel concluded that the development of a face template using facial-recognition technology without consent (as alleged in this [e]case) invades an individual's private affairs and concrete interests.' (Patel v. Facebook, 2019). California Attorney General Xavier Becerra petitioned the San Francisco Superior Court to order Facebook Inc. to comply with a subpoena issued by the California Attorney General on June 17, 2019:

> In 2018, California Attorney General Xavier Becerra launched an investigation into the business practices of Facebook Inc., following widespread that Facebook allowed third parties to harvest Facebook's user's private information. What initially began as enquiry into the Cambridge Analytica scandal expanded over time to become an investigation into whether Facebook has violated California law, by among other things, deceiving users, and ignoring its own policies and allowing third parties broad access to user's data (Attorney General Becerra Petition to the San Francisco Superior Court requesting that the court order Facebook Inc. to comply with a subpoena issued by the California Attorney General on June 17, 2019).

One month after the subpoena was issued, the US Federal Trade Commission imposed an unprecedented $5 billion penalty to Facebook as, '[d]espite repeated promises to its billions of users worldwide that they could control how their personal information is shared, Facebook undermined consumers' choices' (2019). However, as of September 2020, Facebook has still failed to comply with the requests of Becerra and the FTC. Multiple investigations against Facebook are still works-in-progress. As has been evidenced, the breach of privacy laws has been a common practise among one of the leading tech companies. Facebook is an incorrigible recidivist, and, at least under the EU's perspective, is a human rights violator. Yet although Facebook has been heavily fined for its repeated data privacy violations, under a cost/benefit analysis, the company still wins by breaking the law. However, it would be a mistake to demonise a single company for what is a common pattern in the big tech industry. As I argued in chapters one and two, digital capitalism depends on the appropriation

and exploitation of private data; for that reason, it has been defined as surveillance capitalism (Zuboff, 2019) or information capitalism (Cohen, 2019).

5.2. Facebook's Problems with Competition Law

As I explained in Chapter 1, one of the defining features of the new digital business was the network effects of the new social media (the service's value increases as the number of users increases), thereby forcing platform companies to escalate, fast and massively, to make profits. Being dominant in a market was not only beneficial but the only way to secure profits in the most relevant markets. A fact eloquently summarised by Peter Thiel: 'Competition is for Losers' (Thiel, 2014b). For Silicon Valley, corporate dominance is a positive attribute that, contrary to what some argue, does not strangle innovation:

> The dynamism of new monopolies itself explains why old monopolies don't strangle innovation. With Apple's iOS at the forefront, the rise of mobile computing has dramatically reduced Microsoft's decades-long operating system dominance. Before that, IBM's hardware monopoly of the '60s and '70s was overtaken by Microsoft's software monopoly. AT&T had a monopoly on telephone service for most of the 20th century, but now anyone can get a cheap cell phone plan from any number of providers. If the tendency of monopoly businesses were to hold back progress, they would be dangerous and we'd be right to oppose them. But the history of progress is a history of better monopoly businesses replacing incumbents. Monopolies drive progress because the promise of years or even decades of monopoly profits provides a powerful incentive to innovate. Then monopolies can keep innovating because profits enable them to make the long-term plans and to finance the ambitious research projects that firms locked in competition can't dream of (Thiel, 2014a, p. 28).

In their race for dominance, digital capitalism simultaneously broke privacy and competition rules (Botta & Wiedemann, 2019). The problem was that the regulatory framework was not ready (or intended) to contain the youthful, creative, imaginative, energetic criminal activities of companies

like Google or Facebook. Let's remember that the progressive antitrust and antimonopolist rules conceived in the US in the late nineteenth and early twentieth centuries were aimed to tackle not only corporate market power but also corporate political power. But, as we have seen, the neoliberal revolution, blessed by the Chicago School intellectuals, dismantled the progressive era antitrust legislation that could have served to stop tech power. The consumer-centred approach of the neoliberal hegemonic take on antitrust—as long as prices were not growing as a result of the lack of competition, everything was fine—along with the narrow interpretation of entry barriers—that is, the price a company has to pay to enter a particular market—has been useless in the new digital ecosystem of network effects, two-sided markets and zero price products (Crémer et al., 2019). In fact, it wasn't even clear what or who was the commodity or the final client. For instance, is Facebook Messenger a product offered by Facebook to its clients in exchange for data? Or is Messenger the mean used to extract valuable data (the product) from its resource-rich users, which will be later sold to Facebook's real clients, who are the ones paying for the ads in the platform (making 98% of Facebook revenues (Nasdaq, 2019)? Some have considered that digital platforms such as Facebook are a good example of two-sided (or multisided) markets, meaning with it that there are different group of users benefiting in different ways from the network effects created by the corporation (Wismer et al., 2017). For others, it is a place of capitalist accumulation exploiting user's data (Kenney & Zysman, 2020; Sadowski, 2020). Whether benevolent or evil, the fact is that, as we are about to see, corporate titans such as Facebook have become monopolies.

In 2014, the European Union allowed Facebook's acquisition of WhatsApp (European Commission v. Facebook). Two years earlier, Facebook showed its interest in taking on Instagram. Despite the red flags raised by academics and experts, the operation was authorized by US authorities. Both acquisitions strengthen Facebook's dominant position in the online communication market. US and EU authorities considered that this merger was not creating conflicts of competence. In the opinion of the Office of Fair Trading: 'The parties' revenue models are also very different. While Facebook

generates revenue from advertising and users purchasing virtual and digital goods via Facebook, Instagram does not generate any revenue' (OFT Decision ME/5525/12 – Facebook/Instagram, Par.23). Facebook has an instant messaging application, Messenger, which apparently did not compete with WhatsApp, another instant online messaging app. WhatsApp's business model was officially based on a paying subscription—something that was vaguely enforced, and in fact WhatsApp was running in the red. Instagram and WhatsApp investors were not pursuing short-term profits. The patient capital funding them was waiting for an exponential growth that would eventually allow the platforms to dominate the market and then experiment with different ways of monetising their product. Either that or waiting for the arrival of a millionaire acquisition by a larger corporation in an adjacent business sector, which, eventually, would provide money and buyer's shares. This second scenario is what happened (Hughes, 2019). The US and EU merger authorisation revealed blatant disinformation about the nature and scope of the new digital corporation's strategies. As the EU Commission documented, these illegal acquisitions had a main objective: to establish a situation of monopolistic domination over the flow of data in online communications. Facebook is now under investigation in its home country under the same accusation. On October 22, 2019, New York State Attorney General Letitia James announced that 47 attorneys general from US states and territories are investigating Facebook's potential antitrust violations (Palmer, 2019). As we will shortly see, the US competition regulatory bodies, the Federal Communications Commission and the Federal Trade Commission are undertaking their own investigation into the matter, investigations that extend to other leading companies. As with privacy, competition law violation is a constant among big tech. Or in other words, a behaviour considered as a deviation is rather intrinsic to the digital capitalism business model. No matter how large the fines are, corporations reoffend. What are governments doing to tackle data crimes?

6. The Data Privacy and Competition Approach

It wouldn't be fair to say that the EU or the US are not trying new ways to approach the double-sided question of privacy and competition laws violation. In 2016, the competition authorities of France and Germany published a conjoint document exploring the intimate relation of market power and data. There, the Autorité de la concurrence and the Bundeskartellamt (2016) stated that:

> Recent developments in digital markets have led to the emergence of a number of firms that achieve extremely significant turnovers based on business models which involve the collection and commercial use of (often personal) data. Some of them enjoy a very high share of users in the service sector in which they are active. The Google search engine and the Facebook social network are probably the most prominent examples. While many of the services provided by these firms are marketed as 'free', their use involves in practice making possible the collection of personal information about the users. This has spurred new discussions about the role of data in economic relationships as well as in the application of competition law to such relationships, in particular as regards the assessment of data as a factor to establish market power (Autorité de la concurrence & Bundeskartellamt, 2016, p. 3).

Since then, what was a hypothesis has become the EU's official position on the question of data/competition. For instance, in February 2019, the European Data Protection Supervisor published a short paper titled 'This is Not an Article on Data Protection and Competition Law', noting the importance of enhancing the cooperation between competition and data watchdogs in order to protect markets and individual rights. As he stated, '[W]e are living in a time when we urgently need to get back to the heart of privacy and competition laws to understand how closely they are intertwined and how much they could support each other in tackling some of biggest challenges of today's world' (Buttarelli, 2019, p. 2). Buttarelli's paper came after the decision of the German antitrust authority forbidding Facebook from combining user's data from different sources/platforms under its control such as WhatsApp or Instagram. The German antitrust authority pointed out how Facebook's criminal disdain for privacy rights or competition rules responds to a deliberate strategy pursuing domination:

> Using and actually implementing Facebook's data policy, which allows Facebook to collect user and device-related data from sources outside of Facebook and to merge it with data collected on Facebook, constitutes an abuse of a dominant position on the social network market in the form of exploitative business terms pursuant to the general clause of Section 19(1) GWB (…) As Facebook is a dominant company users cannot protect their data from being processed from a large number of sources, i.e. they cannot decide autonomously on the disclosure of their data. However, it must be ensured that the interests of the opposite market side are sufficiently considered if a provider is a dominant company which is not subject to sufficient competitive control (Bundeskartellamt, 2019, pp. 7-12).

In the same vein, the US Congress research services published a surprisingly critical working paper stating that 'a number of commentators have argued that the significant volume of user data generated by certain digital platforms confers important advantages on established companies (…) Some commentators have accordingly argued that access to 'big data' can result in a feedback loop that reinforces the dominance of large firms' (Sykes, 2019, p. 7).

In mid-2019, US media reported that the Federal Trade Commission (FTC), and the Department of Justice (DOJ), both responsible for enforcing US federal antitrust laws, divided responsibility over inquiries into the monopolistic practises of the 'Big Four' (Google, Apple, Facebook and Amazon) (Del Rey, 2020). As a result of those investigations, the FTC reached a $5.5 billion settlement with Facebook concerning privacy (there is another FTC antitrust inquire pending). The FTC's complaint states that Facebook 'subverted users' privacy choices to serve its own business interests' (United States v. Facebook, par.4) through a series of deceptive practises such as obtaining (stealing) data without permission, allowing non authorised third parties (such as Cambridge Analytica) to use Facebook users' data, and failing to comply with previous FTC orders. The FTC acknowledged that previous fines and recommendations to digital capitalists had not been a deterrent at all. Digital corporations are recalcitrant recidivists. That is why the settlement is not only of an economic nature, it also imposes a series of data security obligations, and, what is more important in opinion of the FTC chairmen, 'a new corporate governance structure, with corporate and individual accountability

and more rigorous compliance' (Simons et al., 2019, p. 2). More recently the US House of Representatives Committee on the Judiciary Subcommittee on Antitrust, Commercial and Administrative Law launched a series of hearings on 'Online Platforms and Market Power'. The sixth of these hearings examined the dominance of Amazon, Apple, Facebook and Google. There, the subcommittee members requested the testimony of the mentioned companies' CEOs (Jeff Bezos, Tim Cook, Mark Zuckerberg and Sundar Pichai respectively) about the monopolist and dominant practices of their companies (2020). None of them apologised or showed any regret for the proven misbehaviour of their companies, neither did they accept responsibility for their corporate crimes. Instead, they drew a sweetened, benevolent and philanthropic version of digital capitalism built by self-made entrepreneurs, the body and flesh of the new American Dream (Bezos, 2020). In their testimonies, they denied the accusation of monopolistic behaviour. For instance, Zuckerberg defended the acquisition of Instagram and WhatsApp as beneficial not solely for their own shake but for those companies, and society in general:

> These benefits came about as a result of our acquisition of those companies, and would not have happened had we not made those acquisitions. We have developed new products for Instagram and WhatsApp, and we have learned from those companies to bring new ideas to Facebook. The end result is better services that provide more value to people and advertisers, which is a core goal of Facebook's acquisition strategy (Zuckerberg, 2020, p. 3).

It is good to bear in mind the different judicial and political instances such as the German or the European, where that very same acquisitions have been denounced as an example of monopolistic behaviour. The same hypocritical tone was used in the statement by Pichai:

> At Google, we take pride in the number of people who choose our products and services; we're even prouder of what they do with them—whether it's the 140 million students and educators using G Suite for Education to stay connected during the pandemic . . . the 5 million Americans gaining digital skills through Grow with

> Google, part of our $1 billion initiative to expand economic opportunity . . . or the millions of small business owners connecting with customers through Google products such as Maps and Search (Pichai, 2020, p. 1).

What Pichai forgot to mention is that, as we have seen on the previous sections, Google was found guilty of having violated privacy and competition rules with the same apps he mentioned. Multiple governmental and civil society organisations have participated in the subcommittee hearings as well. The European Commission executive vice-president Margrethe Vestager (EU's commissioner on competition and digital economy) addressed two statements to the subcommittee. In these brief but thick documents, Vestager outlines the EU's stake on the interwoven issue of data and competition, confirming and developing Buttarelli's arguments. In her first document, written while she was commissioner for competition but not yet executive vice-President, she highlighted recent litigation between Europe and Google, specifically the infamous Google Shopping, Android and Google AdSense decisions regarding the company's abuse of its dominant position in the on-line shopping services:

> In Google Shopping, we found that Google had abused its dominant position as a search engine by treating its own comparison shopping service more favourably in its general search results than rival comparison shopping services in terms of placement and presentation. (…) Then last year in Android, we found that Google had abused its dominant position by the use of certain contractual obligations and financial incentives aimed at protecting and strengthening Google's dominance in general internet search. (…) In the most recent Google AdSense decision (2019) (...) the Commission looked at hundreds of contracts and the impact that their terms had on the market. Through an exclusivity provision, the most commercially important customers were contractually prevented from sourcing any search ads from Google's rivals on their websites (Vestager, 2019, p. 2).

The second document addressed by Vestager is focused on the ways the EU is—and/or will be—tackling corporate dominance. The arguments are summarised in the form of three pillars:

> 1. Continued vigorous competition law enforcement using our existing case framework; 2. Possible ex ante regulation of digital platforms, including additional requirements for those that have a gatekeeper role; and 3. A possible new competition tool to deal based on case-by-case investigations with structural competition problems across markets which cannot be tackled or addressed in the most effective manner on the basis of the current competition rules (Vestager, 2020, p. 3).

Although coherent with the EU compromise with a regulated and ordered free market, the measures proposed by Vestager do not offer a solution to a problem that has revealed itself as ungovernable. As we have seen, the problem of digital capitalism has less to do with some deviant corporations than with a vast network of corporate organised crime. In Silicon Valley business equates to routinised corporate crime. As Amnesty International stated in its 'Letter for the Record' of the aforementioned hearing on antitrust, '[L]egislators cannot allow Big Tech to continue to abuse its colossal power over our everyday lives. Congress must ensure that public digital space is reclaimed from a powerful and unaccountable few and demand that it is accessible to all, with respect for human rights at its core' (Amnesty International, 2020, p.3). Perhaps the notion of data crimes could help us find ways of making digital corporations accountable for their crimes. In order to consider the viability of the above-proposed data crimes, we must first consider the question of jurisdiction and enforceability. For this reason, the last section will deal with the slippery matter of digital corporations' international criminal liability.

7. Towards Big Tech's International Criminal Liability

From the seminal work of Edwin Sutherland, to the latest developments in white collar and corporate crimes, academic contributions have consistently pointed out that corporations are far from being exemplary law-abiding citizens (Thomas, 2019). The issue is even more problematic in the tech industry. The top five tech companies by revenue, Apple, Samsung, Foxconn, Alphabet and Microsoft (US v. Microsoft Corp), have been involved in serious crimes ranging from tax

evasion (Ireland v Commission), corruption (BBC, 2017), labour exploitation (Qiu & Lin, 2017), fraud, price fixing, user's data mismanagement or discrimination, among others. As we have seen, US authorities discovered and proved that Facebook sold and shared private data with third parties without their users' consent. In 2012, the FTC approved a final settlement with Facebook, which among other things required 'Facebook to take several steps to make sure it lives up to its promises in the future, including by giving consumers clear and prominent notice and obtaining their express consent before sharing their information beyond their privacy settings, by maintaining a comprehensive privacy program to protect consumers' information' (FTC, 2012).

Similar provisions regarding competition were settled by the EU Commission in the case of Google. As we know, it never worked. A plethora of case law involving digital corporations proves that soft-law and self-regulatory solutions are not enough to deal with digital corporate crime. The companies leading the digital economy, Alphabet, Amazon, Uber or Facebook, are sentenced criminals with many pending causes. They are also well-known recidivists. Even the largest fines—such as the ones imposed to Google of over €8 billion (Commission v. Google) or Facebook, who, in a single settlement, agreed to pay $5.5 billion (USA v. Facebook)—have not caused a perceptible impact on those companies.

Although there is a growing academic and institutional concern with the question of data, competition and corporate domination, this conduct is still not being criminalised. Additionally, corporate criminal liability is still, at best, at a minimum. It is an emergent trend but poorly developed (Thomas, 2019). Punitive populism has a limit: the powerful. Corporate criminal liability is very narrow. Unlike natural persons, criminal corporations can continue to roam free after breaking the law. Their crimes, despite victimising hundreds of millions, are rarely considered as such (Solove & Citron, 2017). As we have seen, different investigations proved that user's data from Facebook of at least 87 million people was exposed, traded and processed by Cambridge Analytica, a data analysis company at the

time working for the Trump and Brexit campaigns, among others. Let's remember that the European Charter of Human Rights, further developed through other EU instruments such as the GDPR, protect data as a fundamental right. Hence, Facebook massively violated the fundamental rights of hundreds of millions. If there is a place for the *ultima ratio legis* to be in action, it should be for those powerful subjects causing serious social harm and victimising millions. Making corporations criminally liable for data crimes may deter corporation from further offences. I am conscious that this entrails multiple legal doctrinal and jurisdictional challenges.

Many scholars, such as Baars (2020), Snider (2020) and Tombs & Whyte (2016) have pointed out how troublesome and problematic has become the question of corporate criminal liability, or, rather to say, its absence. As Tombs and Whyte remind (2016), the question of corporate impunity is not just a matter of criminal policies. As 'the corporate form and the state are thus inextricably linked to the extent that, in contemporary capitalism, each is a condition of existence of the other' (Tombs & Whyte, 2016, p. 56). This intimate relation between corporations and the institutions that should be regulating them has helped to hide the corporate criminal activity, behind a curtain of impunity. Corporations are criminal by design, as long as "the corporation was constructed as a 'structure of irresponsibility'—precisely to ensure 'corporate impunity' (and the impunity of the individuals behind the corporation). The corporation became 'capital personified', an amoral calculator, driven by the profit imperative, or the imperialism at the heart of the corporation" (Baars, 2019, p. 11). The structure of corporate impunity is even more perceptible at an international level and can be traced back to the early times of colonialism where corporations were entrusted by nation states with the exploitation of entire territories and its population (often in the Global South) with the connivance, if not the applause, of the international community, which was limited to a handful of Global North countries. The intertwined history of capitalism and colonialism instrumentalised through corporations endures till today. For instance, as Jenny Chan et al., (2020) have denounced, the collusion between two giants, US's Apple and Taiwanese Foxconn (iPhone's leading manufacturer)

has resulted tremendous benefits for Apple, huge benefits for Foxconn and poverty, suicide and despair for the Chinese workers actually producing the product:

> In 2010, Apple demonstrated its corporate prowess by capturing an extraordinary 58.5 percent of the sales price of the iPhone, a virtually unparalleled achievement in world manufacturing (see figure 3.2). Particularly notable is that labor costs in China accounted for the smallest share of the "made in China" iPhone, a mere 1.8 percent or nearly US$10 of the US$549 retail price of the iPhone 4. American, Japanese, and South Korean firms that produced the most sophisticated electronics components, such as the touchscreen display, memory chips, and microprocessors, captured slightly over 14 percent of the value of the iPhone. The cost of raw materials was just over one-fifth of the total value (21.9 percent). In short, while Foxconn carved out a niche as the exclusive final assembler of the iPhone, the lion's share of the profits was captured by Apple. In this international division of labor, Foxconn captured only a small portion of the value while its workers in electronics processing and assembly received a pittance (Chan et al., 2020, p. 60).

It is not a coincidence that super-powerful corporations shielded in their Global North fortresses have bypassed, broken, tricked or simply ignored national and international laws in order to steal data. As Baars reminded us (2019), imperialism lies at the heart of the corporate form. After all, the first global capitalist companies were incorporated under the protection of the English (later British) Crown to govern, dominate and exploit entire nations. The imperialist international structure of impunity mentioned by Baars is a fundamental element of digital capitalist's data extractivist endeavour, for hegemonic digital corporations are often based on Global North countries, overwhelmingly in the US, while their victims are usually based overseas, commonly in Global South countries. Hence, although it extensively affects citizens on the Global North countries, data crimes are by its nature and structure, part of an imperialist phenomenon defined by Couldry and Mejias (2019) as data colonialism:

> Data colonialism is, in essence, an emerging order for the appropriation of human life so that data can be continuously extracted from it for profit. This extraction is operationalized via data relations, ways of

> interacting with each other and with the world facilitated by digital tools. The rough data relations, human life is not only annexed to capitalism but also becomes subject to continuous monitoring and surveillance. The result is to undermine the autonomy of human life in a fundamental way that threatens the very basis of freedom, which is exactly the value that advocates of capitalism extol (Couldry & Mejias, 2019, p. xix).

Thus, criminalising data crimes at a domestic level would not be enough to put an end to the digital corporate crime. After all, Silicon Valley champions such as Facebook or Google are shielded in Global North countries such as the US, while most of its billions of users are spread in the Global South. Consequently, criminalising data crimes would not only entail challenging the capitalist legal structure of nation states but also involve dismantling the colonial structure of impunity in which criminal corporations operate. There are several obstacles that should be considered before any realistic criminalisation of data crimes is attempted. The current legal framework and enforcement agencies are not sufficiently fit and adapted to deal with a new era of big tech criminal corporations. As we have said, despite some spectacular institutional moves against big tech with some of the largest fines ever imposed, the digital corporations still reoffend. As Zuckerberg requested, digital corporations 'move fast and break things' (Taplin, 2017), and no one has made them fix that left broken. And, perhaps, what is more important to consider and to further explore is that big tech criminals are victimising on a global scale, leaving a trace of hundreds of millions of persons and institutions affected in multiple jurisdictions. While it is clear that the current legal framework and the kind of enforcement we are using to tackle data crimes is not working, we still lack a working alternative.

Conclusions

In this chapter I have examined a key element of the silicon doctrine's wider strategy. Drawing in Orla Lynskey's concept of data power, I coined the notion of data crimes—that is a two-sided

corporate crime that involves both massive exploitation of users' data and the breaching of competition laws, with an aim of seizing a socially harmful market dominant position. Drawing upon the works of critical criminologists such as Sutherland, Pearce and Whyte, among others, I have outlined some key elements of the literature analysing corporate and white collar crime. With this I aimed to explain why certain specific behaviours committed by the 'powerful' are often not criminalised, and, even more, have become essential to the operation of the capitalist system of exploitation. As I indicated in Chapter 2 with regards to the silicon doctrine, many of the data crimes' evils can be traced back to the neoliberal revolution. In regard to this, in order to provide an adequate historical framework for the spectacular rise of digital capitalism criminal activity, I have analysed the unsettling Global North's switch from a progressive legal framework that tackled corporate power to another that finally unleashed neoliberal monopolistic forces. In the second part of the chapter, I have delved into the two sides of data crimes: privacy and competition law violation. For that, I have examined how one of the Silicon Valley leading companies, Facebook, exploited and abused user's data as well as broke competition rules in order to take over the social media market. In the last section I have reconsidered the question of corporate criminality at the light of the crimes of digital capitalism. This has flagged important questions around the theoretical and practical challenges of making digital capitalists accountable, especially given the colonial structure of irresponsibility on which the corporate form stands. I think it is a good idea to close with a brief recapitulation of the features that define data crimes: 1) Data crimes are a form of state-corporate crime that is rapidly transitioning to a form of corporate organised crime. 2) Data crimes do not respond to a single criminal activity. Instead, they are a form of corporate criminality composed by a plurality of offences, including breaking competence or privacy laws, aiming to achieve corporate dominance or data power. 3) Data crimes are not cybercrime. This corporate criminogenic behaviour happens in and outside the network, which, in any case, is not a digital space apart from the material reality but a digitalised extension of it. 4) Data crimes are serious offences, causing a tremendous social harm. Data crimes are not property rights. According to today's westernised legal cosmovision, data rights

are intrinsic to the human dignity, and hence a violation of data privacy should be considered and treated as a human right violation. 5) Data crimes are a form of organised corporate criminality threatening citizens' rights and democratic values.

Chapter 4 The Rise of the Legal Machines: Law and Relations of Production in Digital Capitalism

1. Introduction

By the end of April 2020, the coronavirus epidemic outbreak was reaching millions. Thousands were dying daily; for instance, in April, at least 2000 people were dying each day in the US as a consequence of the virus (BBC, 2020). Nearly one third of the worldwide population was experiencing different degrees of forced quarantine. The productive system was forced to stop, restaurants and bars were closed. The streets were emptied. The scenario was described as apocalyptical and dystopian by the media (Sharma, 2020). However, the same scene could be seen in Argentina, United States, Spain and France: on one side of the street a Deliveroo courier delivering a take-away order on a bike, wearing nothing more than a face mask and a pair of plastic gloves for protection. On the other side of the street, military troops wearing biohazard suits, building up emergency campaign hospitals, trying to relieve the overwhelmed intensive care units of the hospitals unable to attend the flood of contagion. How did this come to be? Why were some of the most vulnerable workers, with zero-hour contracts, paid by the piece, no political rights and no unemployment benefits thrown on to the streets? As an Amazon Flex worker reported, 'Every gig worker that's working right now is doing it because they can't afford not to—they're living week to week, and there is no backup' (Rosenberg, 2020). The aforementioned questions could only be answered through a thorough exploration of the meaning of *work* and *the worker* in the digital era.

This chapter aims to explore 1) the interrelation of law and relations of production, and 2) how contemporary forms of relations of production regulation are enabling the exploitation of the gig proletariat through legal machines. In Section I, I will explore different critical currents from where to think the relation of law and relations of production in the digital era. I will dig into the

connections between law and relations of production, setting the theoretical grounds from where to analyse labour exploitation of the gig proletariat (Section II). First, I will summarise some relevant points regarding law, capital and relations of production in the work of Evgeny Pashukanis. Secondly, I will briefly describe today's relevance of what has been so far the most comprehensive Marxist analysis on relations of the production regulatory framework: the regulation approach. Thirdly, I will discuss and complement the aforementioned Marxist analysis, drawing in feminist Marxist and critical race scholars. Specifically, I shall highlight the importance of the reproductive and affective labour conceptualisation as essential to understand how digital capitalism exploits workers. Finally, drawing on the works of Italian operaist Marxism, the Section will end with an exploration on how law, algorithms and code intersect, conforming to what I labelled a legal machine.

Section II is devoted to the analysis of what I have labelled as the rise of the legal machines, that is, code-based digital machines that are at the same time the means of production and the code defining the working conditions of the gig proletariat. I will start by exploring how liberalism is dealing with digital capitalism's labour exploitation. Section III continues outlining the limits of the liberal critique to digital capitalism labour exploitation and how the rise of the legal machines represents an intensification of labour exploitation. Specifically, I look at how digital capitalism is lengthening the working day, lowering wages, intensifying capital and limiting workers political rights.

2. Law and Relations of Production

2.1. Old School

a) Pashukanis from Negri

Marxism has often described law and the state as institutions of class oppression. For authors such as Vladimir Lenin (2015) and Louis Althusser (2014), law and the state institutions were ideological apparatus serving the interest of the dominant class. And maybe there is some truth in this. A quick look at the framework regulating relations of production over the last five centuries may confirm that claim. The bourgeois, before even being the hegemonic power, lobbied and leveraged their power to limit the influence of workers' guilds, who for centuries defended and struggled to keep their power over the sphere of urban production (North, 1981). Guilds defined the conditions of work, regulated the job market and managed a safety net for workers. Guilds were an obstacle to the accumulation of capital, just as it was the existence of common goods, limits to speculation or cities' control over trade. All these material and legal limitations were overpassed by the bourgeoisie. The new influential class even managed to twist and refurbish in its own terms the narrative on slavery, banned for centuries on the European soil. It is impossible to understand the history of Atlantic capitalism without talking about the exploitation of indigenous persons and Africans (Williams, 2014), just as it is impossible to talk about that kind of exploitation without referring to the onerous laws regulating such enterprise. The Black Codes were, purely and simply, a racist compilation of laws intended to regulate colonial relations of production (Sala-Molins, 2006). When the bourgeois finally reached hegemonic power, they were not content with partial laws. They coded labour exploitation in the civil, commercial and even constitutional code. Labour exploitation was a natural condition of the bourgeoisie. They invented pseudosciences and expeditions to legitimate their exploitative rule over colonised peoples. They fiercely fought against any attempt of workers unionising. Exploitation was a natural phenomenon, validated by the laws of God and natural sciences (Goodwin, 2018). Despite all the evidence, bourgeois legal and political theory considered law not as a product or result of social relations, but as something else.

In classical political thought, law has often been described as the expression of sovereignty, a word of legitimate authoritative power (Skinner, 1978). As opposed to the fragmented pluralism and

arbitrariness of the ‘dark’ Middle Ages, law represented an element of equality and homogeneity between territories and subjects (Anderson, 2013). Law was depicted by bourgeois idealism as a logical, concatenated and subordinated relation of norms, from petty laws to the highest norm on which everything depended. Political liberalism fantasies with the idea of political power governing the creation from legislative acts, just like an act of God, the word was creating reality (Pocock, 2016). Hence, political powers shaped and conveyed the becoming of the economy just by putting in motion the constitution. Liberal constitutionalists believed the relation between law and (capitalist) relations of production was a one of dominance of the political over the economic. Leaving the market forces to act by themselves was a state’s concession to the invisible hand, not the result of capitalist hegemony in liberal democracies. That fantasy, faith or belief, is at the core of most of Kelsen’s constitutional thought (1967), perhaps the most prominent bourgeois constitutionalist of all times.

On the other hand, a vulgarised version of Marxist thought popularised under the Stalinist regime, described the opposite. Following the classical distinction economic base/political superstructure, law was considered as a simple product with no agency whatsoever (Vyshinsky, 1948). In both cases, Classical Western political thought and Stalinist Marxism, law was an empty bottle, neutral. Power, whether political or economic, defines the law. For Pashukanis, the question was more complex. In his most celebrated work, *The General Theory of Law and Marxism*, he stressed the intimate relation between capitalism and the legal form. Paraphrasing Marx, he stated that:

> [T]his most fundamental and lowest layer of the legal superstructure, stands in such close contact ‘with the existing relations of production’ that it ‘is but a legal expression for the same thing’. The state, that is, the organisation of political class dominance, stems from the given relations of production or property relations. The production relations and their legal expression form that which Marx, following in Hegel’s footsteps, called civil society. The political superstructure, particularly official statedom, is a secondary, derived element (Pashukanis, 2003, p. 91).

For Pashukanis, the legal form was entangled with the capitalist social formation in an organic relation of dependence. For him, 'the legal relation between subjects is simply the reverse side of the relation between products of labour which have become commodities' (Pashukanis, 1983, p. 85). With this claim, he was following Marx's Chapter 1 of *Capital* devoted to the analysis of the commodity form. Pashukanis was accurate: law was certainly in an intimate relation with capitalism, going beyond a mechanistic romance. Law's role fuelling the circulation of commodities was unquestionable. In Pashukanis, capitalism is pictured as a violent force that transforms societies into the image of the value form. A social formation where persons are not biological beings with intrinsic value but artificial subject owners of commodities, a property relation safeguarded by the legal form, as Dragan Milovanic says, 'legal fetishism complements commodity fetishism' (Pashukanis, 1983, p. 14). However, Pashukanis, while being right at scrutinising law's relation with commodity circulation, missed half of the picture of the process of surplus value. That is, the value created by workers over the value of their labour power and appropriated by capitalists (this position was later corrected in his 'Doctrine of State and Law'). I agree with Negri, 'we need to return again to the point where the definition of law as a form of the capitalist relation between owners of commodities is confronted with the historical texture of exploitation' (Negri, 2017, p. 20). The hidden tie connecting law, capitalism and relation of production is revealed at the light of the two-sided process in the surplus value creation process, as Negri put it:

> The form of bourgeois law is thus consolidated in its complexity on the twofold side of the process of development of relative surplus-value—that is, of the articulation of organization and violence, production and command. "Capital is not only, as Adam Smith says, power over labour. It is essentially power over unpaid labour," and hence organization and command; in the second place, it is the power that dissolves in the mystery of its self-valorization every trace of the division of the work-day and of the articulation between organization of labour and command for exploitation. And it is this mystery that "forms the basis of all the juridical notions of both labourer and capitalist, of all the mystifications of the capitalist mode of production, of all its illusions as to liberty, of all the apologetic shifts of the vulgar economists" (Marx 1887,

> p.381). Law subtly accompanies the entire process of surplus-value and founds its form on the capitalist mystification of the latter (Negri, 2017, p. 22).

Negri vindicates Pashukanis' clarity and sharpness in analysing the legal form in its relation with the value form, while correctly highlighting the productive power of capital over human labour (paid and unpaid) and means of production.

b) The Regulatory Approach

The regulatory approach is a heterodox economic set of theories looking at the processes by which capital accumulation is socially regulated. Born in Paris out of French Marxist economists in the mid-1970s, it was an attempt to dispute the hegemony of liberal economic theories. Their intention was to adapt Marxism to an economic reality characterised by stability, constant economic growth and real rise of salaries. As opposed to previous conceptions, capitalism was 1) extraordinarily dynamic and 2) shaped and corrected by social regulations (national, international, public and private). This school distinguishes between different regimes of capitalist accumulation to which different modes of regulation would be associated (Jessop, 1997).

The authors of these schools are the ones who established today's canonical distinction between Fordism and post-Fordism, pointing out the substantial differences between both regimes of capitalist accumulation. The transition to those regimes is characterised by an intensification of capital, consisting on the reorganisation of the relation of productions through social regulation and technological development. Their analysis proved the role that labour exploitation, wage regulation and the role technology have in the intensification of capital. All of those elements were, of course, largely present in Marxist analysis. However, the Regulation Approach successfully explained how the different elements (regulation/accumulation/technology/productive forces) fit together (Boyer & Durand, 1997).

Despite the undoubted value of these contributions, their framework of analysis seems to stoically assume the bourgeois category of work. Not because they peacefully assume labour exploitation as a lesser evil, but because it is ontologically rooted in their critique of the different capitalist regimes of accumulation. Their thorough analysis of the transition from one regime of accumulation to another is shadowed by their lack of understanding on how patriarchal, racist and colonial relations of exploitation have been central in developing contemporary capitalism. It is inexplicable that one of the most relevant works of the Marxist Regulatory School, *A Theory of Capitalist Accumulation: The US Experience* (Agleitta, 1999), has only two marginal references to racism. As many have emphasised (Horne, 2018; Du Bois, 2017), the United States' capitalism is firmly rooted in colonial conquest, genocide and of course slavery (Grunner, 2019; Horne, 2014). Racist dynamics still persist in traditional sectors as in the tech industry. In the same vein, the lack of attention that these schools have paid to the role that reproductive and affective labour have had (and still have) in the development of the post-Fordist modes of accumulation and regulation is quite paradoxical.

Contributions looking at the regulation of relations of production often fall in the same bourgeois mystification of the contractual relation employer-employee, reducing work to waged labour. In the same way, law and regulations have been understood in a narrow positivistic way. Law, rules, declarations, both public and private, are often the object of analysis of legal scholars. But, as probed by critical race scholars and philosophers, regulation is as much what is regulated as what is left out of the regulation. Also, technology is changing the way laws and regulations enter into action. As some have been theorising and, more recently, physically developing, law is code, and code is law (as we will see further on) (De Filippi, 2018). The way algorithms behave and shape conduct resembles law. Many national, regional and international institutions are now paying attention to what has been labelled as algorithmic governmentality—that is, the way by which power is being exercised through algorithms. Relations of productions in the digital era involve the use of digital machines in multiple aspects, and these new machines are far from being simple tools to be used by workers,

instead (and as we will see), they have agency over them. In the next section, I shall complement traditional Marxist contributions on law and relation of production. I will problematise, firstly, the centrality of waged labour in Global North countries; secondly, the devaluation of affective and social reproductive labour and the role it has in digital capitalism; and thirdly, the increasing overlapping relation between law, machines and algorithms.

2.2. New School

a) Beyond the Capitalist Understanding of Productive Labour

Bourgeois law does not distinguish between work and labour. Work only enters the realm of law as a commodity, that is, as labour-power. Hence the world of work would be a giant market where legal subjects sell their labour power to other free legal subjects, which made perfect sense with Marx's definition of capitalism as a society of commodity owners.

> The subject of a law is the bearer of the rights and duties, the final centre in the "legal tissue" to which property rights and duties are attached. In the first chapter of vol. 1 of Das Kapital, Marx studies the process of commodity exchange. In an action "CM" (exchange of commodities for money), two parties participate: the commodity owner and the owner of the money. From the legal perspective, a "CM" legal relation is a transaction of purchase and sale. The parties in this legal relation, the subjects of the law, are the buyer and seller (Pashukanis, 1980, p. 342).

The consequences for law are obvious. First, the relation between law and productive forces can only be read through the lens of free contractual agreements. Those individuals selling their labour power and those subjects willing to buy it. Secondly, only activities related to commodity production and commodity circulation would enter the realm of surplus-value production and, therefore,

accumulation. So, in a single movement, bourgeois law not only reduced the world of production to a 'necessary pain' for the circulation of commodities but has also produced the idea of the worker.

As has been pointed out by Marxist feminism (Soiland, 2016), the bourgeois category of work produces work and the worker by excluding from valorisation process activities that are fundamental for social reproduction, such as care or breeding, traditionally performed by women. For capital, labour is not a social function, it is a commodity (Marx, 1990). Therefore, only those who sell their labour power to capitalists, within a specific, defined or exclusive legal framework, will be considered as workers. All the reproductive, affective work is excluded from the capitalist valorisation scheme. Moreover, as Silvia Federici (2004) has thoroughly explained in her *Caliban and the Witch,* capitalist accumulation would have not taken place had it not been a capitalist appropriation of unpaid domestic work. Federici (2008), in a brilliant critique of Antonio Negri and Michael Hardt, described how the sexual division of labour has been largely ignored by Marxists and liberals. In her work, Federici situates affective or reproductive labour, defined by Helen Hester and Nick Srniceck as the 'activities that nurture future workers, regenerate the current work force, and maintain those who cannot work—that is, the set of tasks that together maintain and reproduce life, both daily and generationally' (2018, p. 338), within the wider process of capitalist exploitation:

> When we said that housework is actually work for capital, that although it is unpaid work it contributes to the accumulation of capital, we established something extremely important about the nature of capitalism as a system of production. We established that capitalism is built on an immense amount of unpaid labour, that it not built exclusively or primarily on contractual relations; that the wage relation hides the unpaid, slave -like nature of so much of the work upon which capital accumulation is premised (Federici, 2008, p. 7).

For the last fifty years, Global North has been experiencing what some named as the crisis of work (Stronge, Harper, & Guizzo, 2019). But as Naomi Klein has repeatedly said, crisis is the new normal

(Klein, 2020). The crisis of work has been described as the result of deindustrialisation—in fact, it is more accurate to define it as industrial transformation via intensification of capital through automation and delocalisation. In a scenario of increasing precarisation of the living conditions, rising rents in urban areas and decreasing salaries, the emergence of a new care industry may seem like a good opportunity, especially for those collectives more vulnerable: racialised and feminised individuals (Gutierrez-Rodriguez, 2014). Digital capitalism is aware of them for all the wrong reasons, and has disrupted once unpaid affective labour, just to commodify and refurbish it as precarious work. The accelerated privatisation of elements of affective labour and social reproduction is far from being an emancipatory force for those involved in that process, but rather—as Marx demonstrated with the example of the transition from peasants to workers, and more recently Federici (2019) has illustrated—it is tying them with new layers of oppression. Digital capitalism's success could not be explained without understanding how capitalism exploits unpaid affective labour. For instance, Facebook exploits its users by harvesting their data, profiling them and selling the data as a product to the company's real clients, advertisers. In the same way, Google's algorithm is the product of its engineers and developers inasmuch as it is the result of the platform users' queries. Not to mention dating apps such as Tinder that explicitly commodify their users, turning them into accumulative sexual prizes in a process that has also commodified flirting relations to an extent yet to be discovered after Covid-19 lockdown.

b) Can't See Work for the Workers

The digital capitalist social formation is neither homogeneous nor static. As Marx and the regulation school demonstrates, it evolves, mutates, adapts and readjusts. Moreover, capitalism as a social structure expands or tightens depending on the economic, political and social forces in motion. The legal form and, more specifically, the laws regulating relations of production change, shaping and being shaped by each capitalist social formation (Heino, 2017). The labour legal form at different

stages of capitalism—e.g., agricultural capitalism, Atlantic slave capitalism, merchant or industrial capitalism—could not be the same as the defining elements of each social formation (means of production, labour-power and capital) and the relation between them change in intensity, composition and degree of contradiction. While there is an agreement on the abstract object of analysis—the organisation of work—and, for this matter, its regulation, differences erupt while defining the technical and subjective-political composition of the working class, or, in other words, who is producing value and how this is being regulated.

The centrality of waged labour in Global North from the mid-nineteenth century until the end of Fordism defined the way we understand work. Not only because of the weight had they represented on the global economy but because of a matter of cultural and colonial hegemony in the world. The legal relations underpinning that particular way of organising work were shaped by the contradiction between work and capital, with the result of an irreplaceable body of legislation that we know today as labour. In some places, these labour laws were constitutionalised; in some others, they represented a tacit agreement; in both cases, they were a fundamental key for stabilisation (Negri & Hardt, 1994) of economies and the forced pacification of the working class. In short, the contradictions of capital and labour were regulated and governed, resulting in the conformation of a not only economically but legally constructed mass worker bearer of economic, political and social rights (Amin, 2011). The social benefits of that new kind of subjectivity were not limited to single individuals but to other social units conforming the welfare societies. So, legislation was shaped at the image of the industrial labour conforming the mass worker labour law that, still today, represents the most consistent body of legislation, regulating, among other things, working conditions. The mass worker became tantamount to worker, hence its work turns out to be the very definition of work, becoming the normality. The normality, it is worth to mention, was equated to white, male workers, the infamous breadwinner. Outside that normality where the margins of the lumpenproletariat, mostly composed of racialised communities, women and people who, for other reasons, were not considered part of the

normal (the deviant). The outside was characterised by an ultra-capitalist regulation of work, meaning in the best case the uncertainty, insecurity of the self-employed and, in the worst, capitalist despotism and exploitation of irregular job markets (Mezzadra & Neilson, 2013).

As it has been argued in multiple places (Berardi, 2001; Baldi, 1972), the 1970s represent a turning point for the mass worker in the Global North. The post-Fordist regime of accumulation superseded Fordism as the hegemonic mode of production, altering the equilibrium between capital and labour. It is not the place here to discuss why that happened. Perhaps because, as Mario Tronti claims (2019), working class struggles forced capital to move and to evolve, or because capitalist development transformed class composition. What matters is that the way work was organised changed. In short, the way value was created shifted in two ways: 1) Global North countries transitioned from economies based on material production to immaterial production—hence information took a relevant position in the productive processes of the new services-centred economies; and 2) the metropolis superseded the factory as the productive space, the notion of human capital took form and it became essential to the new forms of surplus appropriation. Relations of production changed forever. Capital reorganised class composition, shaping the new productive class of producers/consumers, entrepreneurs of the self and precarious. The mass worker was replaced as the central figure of Global North capitalism by the *operaio sociale* (social worker) (Negri, 2018).

As Lazzarato said:

> Waged labor and direct subjugation (to organization) no longer constitute the principal form of the contractual relationship between capitalist and worker. A polymorphous self-employed autonomous work has emerged as the dominant form, a kind of "intellectual worker" who is him- or herself an entrepreneur, inserted within a market that is constantly shifting and within networks that are changeable in time and space (Lazzarato, 1996, p. 149).

Labour law, intended to protect those involved in the production of commodities within the capitalism social formation, was unable to grasp the process by which value was created under the post-Fordist regime of accumulation. The legal framework of labour was intended for the mass worker in the factory, not the operaio sociale in the metropolis. And this is key to understand the course of events in contemporary working struggles. The neoliberal revolution described in the previous chapter shook the legal, political, economic and ideological grounds of the mass worker. What was once the hegemonic form of organising work, the full-time, rights-bearing mass-worker, became one among the many legal categories and the only one truly protected from the capitalist tempest of uncertainty. A heterogeneous army of part-time, eventual and undocumented workers became dominant in the metropolis' productive spaces. The precariat was there. The outside, the abnormal, rebranded by many as the precarious, became the new normal. But, as Isabel Lorey (2015), following Judith Butler (2016), highlighted, precarity does not define class; it is rather an existential condition. Society changed, the organisation of work changed, everything changed, but the old labour law was not ready to grasp the new bestiary of working conditions.

The incredible shrinking working class, a phenomenon referred by numerous sociologists, institutions and analysts (ILO, 2015; Abramowitz, & Teixeira, 2009; Bell, 1976), does not correspond with a reality where work and production never left, never decreased, never moved away. The working class remained. The precarious were well aware of that; sadly, the same cannot be said about unions or traditional class parties, unready to address the transformation of class composition. The recent conflict between boomers (those born before the 1970s) and anyone with basic digital skills is not the product of age gap but a question of privileges intelligently used by the bourgeois to confront the fragmented working class (Shunkara, 2019). Capital reorganised the working class, defining a nearly infinite number of subaltern categories, suffering different levels of deprivation, repression and discrimination: the migrants, the second-generation migrants, the unskilled, the precarious, the overqualified-but-still-unemployable, and all the mixtures and labels in between. The already

classical distinction between blue-collar and white-collar (and even the most recent pink-collar worker) is not useful to understand the division of the working class (Tarnoff & Weigel, 2020). Sadly, today we can talk about a decreasing class of workers with labour rights protected by labour law and a fractured majority exposed, disposable, a borderline bare-life (Agamben, 1998), that, for some, is the precariat (Foti, 2017). Now we are slowly arriving to present days, where the new underclass is shriving, the gig proletariat. In its most simple expression, it can be represented as follows: Precarity + algorithms = gig proletariat. As we are about to see, this expression is not as simple as it looks.

c) The Making of the Legal Machine: Precarity + Algorithms

> Yet, when the factory extends its control over the whole society—all of social production is turned into industrial production—the specific traits of the factory are lost amid the generic traits of society. When the whole society is reduced to the factory, the factory, as such, seems to disappear. This is the material basis, at a higher real level, on which the maximum ideological development of the bourgeois metamorphoses repeats and concludes. The highest level of development of capitalist production signals the deepest mystification of all bourgeois social relations. The real growing process of proletarianisation presents itself as a formal process of tertiarisation. The reduction of all forms of labour to industrial labour, of all types of labour to the commodity labour-power, presents itself as the extinction of labour-power itself as a commodity and thus as the depreciation of its value as a product (Tronti, 2019, pp. 27-28).

Autonomism is the strand of contemporary Marxism that has gone deepest in the exploration of the post-Fordist social formation. From the early contributions of Mario Tronti (1961) to the latest of Matteo Pasquinelli (2015) and Alessandro Delfanti (2019), operaist thought has coined, explained and developed concepts such as social factory, operaio sociale, immaterial labour and, more recently, informational machine or machinic dispossession. Their contributions are particularly relevant to explain the way digital capitalists use society as a factory, a productive metropolis where machines are digital, ubiquitous, present in the infinite territories of the net, as well as in the devices we all now carry on everywhere. Italian autonomist and workerist theoretical frameworks enable us

to grasp the way digital capitalism is achieving an increase on the rate of exploitation both in terms of relative (benefits obtained by the capitalist from the intensification of the worker productivity) and absolute surplus value (profits obtained by the capitalist from the lengthening of the working day).

Algorithms, once simple mathematical expressions, have today become digital machines, means of production of global business such as Facebook, Google, Airbnb and Uber. Marx said that 'machinery, like every other component of constant capital, creates no new value, but yields up its own value to the product that it serves to beget' (Marx, 1990, p. 509). But the way that machines transfer value today is not the way machines behaved yesterday. Matteo Pasquinelli has traced the origins of today's informational machines in the technified, automatised computer factories of the early 60s. Drawing on Alquati's innovative research on Olivetti's factory working conditions, Pasquinelli argues that:

> 1) Labour is a source of information for the industrial apparatus: actually the most valuable part of labour is information; 2) the information machine is crossed and operated by flows of valorizing information that are produced by workers and gradually improve the design of the machine, the management of the division of labour and the final value of products; 3) it is the numeric dimension of digital information that makes it possible to translate knowledge into information, information into numbers, and numbers into value; 4) the cybernetic apparatus of the factory grows and improves thanks to the contribution of workers' socialized intelligence (Pasquinelli, 2015, p. 57).

Drawing on the works of authors such as Marazzi, Lazzarato or Deleuze, Pasquinelli (2014) discussed the concept of machinic surplus value to explain the way 'abstract machines' (such as algorithms) capture and assemble the information produced by the collective worker in a social process of valorisation. Pasquinelli suggests that the latest development of algorithmic machines is used by humans inasmuch as humans are used (and supervised) by machines.

> Looking at the cybernetic becoming of human/machines (do not think in futuristic robots, just picture an Amazon picker) and the way they transfer value to the product is very useful to understand contemporary digital capitalism and, more importantly, the defining features of the gig precariat. Rosenblat (2018), Cant (2019) and Delfanti (2019), among others, have described the working conditions of Uber or Amazon workers and how they interact with technology. Rosenblat and Delfanti's works show a working reality where algorithms supervise, control, evaluate, measure and direct workers. Algorithms are machines, the means of production of the digital era, yes, but also something else: they have become the bosses of the gig proletariat… And to some extent, bosses of the app owners, privileged prisoners of the same algorithmic numeric governmentality regulating the worker's life.

The discussions around the resemblance between law and code are as old as code. After all, law is a normative language intended to shape conducts, frame behaviours and structure reality. In short, a system of rules regulating actions. And code is… the same, a system to program instructions. A language that executes. Both are a system of symbols that, when activated, they put in motion, stop, create or destroy something (Lessig, 2006). However, as Lessig's work shows, the question between law and code remained largely theoretical. After all, law was undisputedly ruling the 'real world' while code was structuring the so-called cyberspace. But then the digital revolution occurred, and digital technologies became ubiquitous. The rise of the internet with its libertarian dreams of free will with no laws made way for the rule of digital monopolies who ruled and legislated like tyrants in the 'cyberspace' (Hassan & de Filippi, 2019). However, cyberspace is not a place of fantasy. It has encroached upon our reality to an extent that no one (apart from the sci-fi world) could have predicted. The digital economy is neither based on the material or the cyberworld but on a 'cyber-physical infrastructure' (Jacob, 2017) composed of programs, software and the network, of course; but also data centres, investors, workers, minerals, cables and every possibly thing that can be perceived through the senses.

As for the question of law, this has obvious consequences. Think of an Uber driver, driving someone somewhere. In this apparently simple business, there are multiple laws in motion: contractual/private relations, state laws, highway codes, constitutional rights regarding, for example, no discrimination, perhaps insurance. All those legal relations regulate the actions between the worker, the client and the environment. Those legal relations, at least in liberal systems, were directly or indirectly shaped by a democratic mandate; they are part of the rule of law. The different laws and rules in motion during that specific provision of services are, even in their complexity, clear, open to everyone willing (or able) to look at them. Those regulations are perhaps prescriptive and normative, but free will still exists. Perhaps, what is most important is that those legislations, directly or indirectly, were discussed and passed by some authority with democratic legitimacy. However, in the case of the gig economy this is just half of the story. The digital interactions between the worker and the customer are meticulously controlled by the algorithm. Uber uses multiple algorithms and pieces of software to control the way workers and customers match; to set the prices, the route. It measures the speed and the way the driver uses the car breaks. It measures the time. It finally captures the rating given by the customer to the worker to establish a rank. The working conditions of a business present in 63 countries, with nearly 3 million drivers (Sainato, 2019), are regulated by algorithms, a new kind of private law where the capitalist exerts a form of 'feudal power' over its worker, with no State or supreme authority above the corporation whatsoever. The digital lords exercise sovereign power over the relation of production (Rouvroy & Stiegler, 2016), and I purposely use the term sovereign as those laws are shielded from public scrutiny, judicial review or political control. This form of regulation is even more restrictive than previous manifestations, as Ignas Kalpokas said:

> [C]ode can be seen as even more deterministic than law: If in legal systems (at least democratic ones) actions that are not prohibited are typically considered to be allowed, in systems structured through code only actions that are allowed are possible. In effect, this leads to 'programmed forms of sociality' in which the shape and form that human interactions and relationships assume is pre-written in code (Bucher 2018, p.2), acting as an opaque form of regulation (Kalpokas, 2019, p. 31).

We are facing something extraordinarily challenging, the making of the legal machine. Algorithms—one of the key elements of the new capitalist system of production—are at the same time the means of production and the legal code enabling worker's exploitation. Even under the most progressive liberal framework, relations of production will still be determined both by the ownership of the means of production and by the capitalistic code in which they are written. In the following section I shall discuss what I labelled as the liberal dilemma—that is the *cul-de-sac* in where progressive thinkers are trapped with regards to digital capitalism's relations of production regulatory framework. Then, I will explain how Digital Capitalism is using East Coast and West Coast code to shape and define gig economy relations of production. This will bring to light two different but related processes: first, the ongoing construction of digital capitalist mode of regulation; second, the making of the gig proletariat out of the precarious condition, as a result of suffering and resisting a shared common system of exploitation.

3. Law and Means of Production in the Digital Age: The Machine Is the Law

> 'We are working-class people. If we work, we can live. If we don't work, we can't live'. Minicab Driver declarations to *The Guardian* (Wall, 2020).

3.1. The Gig Proletariat and the Liberal Dilemma

a) Now We Know

It was a moment in the mid-1990s when Global North intellectuals lost track of the mass worker. What you can't see can't hurt you, may have thought Jeremy Rifkin (1995) while writing *The End of Work: The Decline of the Global Labor Force and the Dawn of the Post-Market Era,* hilariously labelled as non-fiction. George Caffentzis (1999) pointed out the contradictions of the 'end of the

work/worker theories', but his voice was barely perceptible in the hyperfluid rave of the end of the century, courtesy of the postmodern establishment: Ulrich Beck (1998), Zygmunt Bauman (2000) and Anthony Giddens (1998), among many. The last time postmoderns saw the mass worker was in between the election of Tony Blair and the iPod launch (although Republicans claim mass working sighting during the 2016 presidential election). After a while, an army of social scientists fought each other to be the signers of the mass worker declaration of death, of course in absentia, as it was no corpse whatsoever. The liberals, the conservatives, the socialists, the third-way postmoderns, the Marxists, everyone was present at the burial, willing to officiate the ceremony. Aiming to be the ones, not only farewelling the past but also the first welcoming the future. However, despite their tremendous efforts, digressions and more or less grounded predictions, what was to come was not defined.

The cognitive worker, the knowledge worker, the immaterial worker, the precarious, a bestiary of subjectivities emerged from the wizard hut of post-modern sociology (Berardi, 2001; Virno, 2003). All these definitions were nothing more than abstractions that, in a more or less esoteric way, described a hazy and disturbing reality. These attempts failed to describe what would come to replace the mass worker model. They failed not because they lacked knowledge, instinct or even wisdom but because the different elements that would end up forming digital capitalism were still dispersed or, even, not yet present. And you cannot have a new working subjectivity without a system of exploitation producing it. The worker mass was not materialised until the existence of the factory. It is true that it came preceded by and alongside great transformation. A massive land tenure revolution, a plethora of technological and productive changes, new machines, transportation, ways of producing food, planning cities and so on (Harvey, 2018). But there is no industrial worker if there is no factory.

The factory defines the capitalist social formation described by Marx in *Capital*. The relations of production, the circulation of commodities, the production of capital and its accumulation, and, of

course, the exploitation of the working class—that is, the material conditions at the time—are explained through the social meaning of industrial production. This, of course, does not mean that an industrial society is the one where all labour power is involved in manufacturing but a social formation where the productive, economic and political dimensions are organised at the image of that mode of production.

When this mode of production apparently ceased to be hegemonic, sociologists were suddenly orphans of an explanatory framework for their reality. After all, sociology is a product of the industrial revolution. So, for many, the end of the mass worker was a symptom of the end of work (or history, by that means). Perhaps many workers vanished (out of their sight), relocated or transformed, or turned into unemployed under capitalist standards, but work remained. The closest they came to approaching what was to come was when the term precarious, refurbished as 'precarity' (Lorey, 2015), was given the (blurry) meaning it has today. Precarity was an existential and social condition, not a class, but, as opposed to precariousness, it was not a universal condition. Precarity is a condition of vulnerability defined by the end of the Fordist certainties: work, house, structure and defined paths. Precarity was everything that was outside the predictability and social protective regime safeguarded by Fordism, unionism and the welfare state. Precarious was the outside, the margin, the migrants, the temporary, the undefined. Precarity was the palpable evidence that, under the latest stages of capitalism, the outside was the new normal (Berry & McDaniel, 2020). Today, many of us live precarious lives, precarity is the millennial default condition. However, precarity—that is, an existential and social condition—is all what the precarious have in common. So, there was the substance, the soul of what was to come, but not its flesh.

The mass worker is not defined by the will to be a worker or by its social condition. It is not one of those nomadic identities that Lorey (2015) or Butler (2006) talk about. The mass worker is so because they suffer from the exploitative conditions of the industrial capitalist mode of production. One does

not have to be in the factory to be working class, but one must be immersed in and affected by the relations of production that it generates. That is why the popular culture speaks of working-class neighbourhoods, of working-class attitude or of working-class instinct. You belonged to that class whether you wanted to or not. Whether you were producing cars or washing machines, operating a combine, making photocopies or photocopiers. It wasn't about what the subjects were producing, what they were doing or how they were doing it.

The history of the oppressed teaches us that what the dominated, as a class, have in common is what exploits them. Here are two examples from the colonial Atlantic social formations. The 'Indian' (Spanish colonial racist label for colonised subjects in the Americas) was produced by a nascent capitalist system of exploitation out of multiple peoples such as Mapuches, Incas and Aztecs. They were Indians because they were exploited as such, for instance, in the gigantic silver mines of Peru or Mexico. Indigenous peoples never chose to be part of the racialised Spanish governmentality, neither to become Indians (Dussel, 2011; Quijano, 2000). The same can be said about the millions of humans stolen from Africa. The Wolof, Yoruba, Makongo peoples were deprived of their freedom, their communities and their culture to be produced as blacks, or negro slaves (González, 2019). This is not a denial of the powerful tradition of resistance of indigenous peoples, for example, de Mayan Zapatistas in today's Chiapas, Mexico. Neither is a negation of the rich African American cultures. However, we need to understand that capitalism is no simple way of managing resources. Indeed, it is a gigantic force able to destroy cultures and peoples just to produce slaves and exploited subjectivities in the name of surplus. Of course, being conscious about capitalist biopower does not equate to believe in the end of history or, like Negri and Hardt (2000), claim that there is no more outside. On the contrary, the history of the oppressed also teaches us that the exploited have been able to resignify ruling class categories to fight the power. From the early resistance against colonial powers until today's neofascists regimes, Indigenous peoples in Latin America have called themselves Indians, appropriating an ostracised identity. African Americans have rebuilt out of the

slave subjectivity a powerful and emancipatory black identity. The working class organised as such brought us some of the brightest moments of the twentieth century. But before the Indian, the slave or the worker revolution happened, there was the system of exploitation producing them.

Today, we can talk of the digital proletariat. We can do so because there is a new exploitation system spreading globally. What can a Deliveroo raider, an Uber driver, a professor at an Online University, an operator at an Amazon logistics centre have in common? It is not who hires them, or what they produce. It is not their legal status as employees, subcontractors, workers or self-employed. The imaginative way they are labelled by digital capitalists is absolutely irrelevant. What they share—what they have in common no matter their country, their religion, their gender or their personal political preference—is that they are being exploited under the same regime of accumulation. Is that they do not own the means of production of the digital era. In the following paragraphs, I will discuss the way law and code are regulating digital capitalism's relations of production. I aim with this to offer a summary perspective on the legal construction of a labour exploitative regime, and how this is producing what is described here as the gig proletariat.

b) The Liberal Dilemma

> At this point, the ideal for the most modern capitalism becomes that of recuperating the primitive relation of simple purchase-and-sale contracted between the individual capitalist and the isolated worker: however, while the former holds the social power of monopoly, the other is individually subordinated to the pay they get for their troubles. This *silent coercion by economic relations* itself seals the capitalist's dominion over the worker (Tronti, 2019, p. 30).

One of today's most relevant discussions on labour law has to be with the legal status of the gig worker. Despite the many differences across jurisdictions, labour laws fundamentally distinguish two

or three classifications of employment: 1) self-employed or contractor, that is, the classical entrepreneur; employee, historically embodied by the proletariat—blue and white collar (UK Government, N.A.); and the 2) dependent worker or 3) worker, a 'third way' of employment classification born and rose in the 'progressive' aftermath of the neoliberal revolution (Dubal, 2017a). The legal characterisation as an employee or as a self-employed defines your labour rights, both political and economic. However, this taxonomy is fiercely contested by digital capitalists whom advocate for an even more capitalist friendly legislation. Dubal has framed the terms of the current debate:

> A growing number of workers are not considered "employees" under the law but "independent contractors," working-class entrepreneurs who are ineligible for basic employment safeguards such as the right to collectively bargain, the right to a minimum wage, and the right to protections against employment discrimination, among others. With the innovation and proliferation of business models intended to lower corporate costs by relying on non-legally cognizable employee labor, especially in the "on-demand" or "gig" economy, more workers are working "casually." Such nonemployee workers include contractors, lessees, temporary laborers, freelancers, and consultants, all likely classified as "independent contractors." Social scientists refer to the growth of the casual workforce as the rise in the precariat—a class of workers whose relationship to employment is precarious or risky because it lacks stability and the benefits of regulation (Dubal, 2017b, p. 103).

The liberal dilemma is served. On the one hand, liberals are aware that the new players in the corporate town play a very different game, with new technologies and ways of organising work. On the other hand, as a gesture of political pragmatism, liberals put aside progressive ways of regulating production. As progressive thinkers, they are aware that digital capitalists systematically violate labour laws. But as liberals, going further, deeper, to the root of the problem—just as the Labour party under Jeremy Corbyn proposed in 2019 (Labour Party, 2019)—seems excessively socialist. In their view, what we need is an adequate and updated legislative framework, functional and flexible enough to put relations of production back on track. Hence, liberals are sucked into the Byzantine

dispute around the legal status of workers. A legal status that used to be legally clear but became blurred with the disruptive arrival of digital capitalism. In the US, each jurisdiction has been tackling the issue in a different way. Digital capitalists have been lobbying for a friendly gig economy legislation more prone to determine gig proletariat as entrepreneurs (Thelen, 2018). In this struggle, liberals have pushed for the ABC test, which is a way of determining the worker's legal status. The ABC test is not a standardised document or questionnaire but commonly looks at three dimensions. It was firstly implemented in Massachusetts (2004):

> An employer who wants to treat someone as an independent contractor rather than an employee has to show that the work: 1) is done without the direction and control of the employer; and 2) is performed outside the usual course of the employer's business; and 3) is done by someone who has their own, independent business or trade doing that kind of work (Government of Massachusetts, n.d.).

The way California has codified the test slightly follows the Borello test:

> 1) The worker is free from the employer's control or direction in performing the work. 2) The work takes place outside the usual course of the business of the company and off the site of the business. 3) Customarily, the worker is engaged in an independent trade, occupation, profession, or business (State of California Department of Industrial Relations, n.d.).

Despite the liberal claim on law neutrality, gig work legislation is taken in a stricter or lenient way depending on the jurisdiction, the laws linked to it and the political climate (Collier, Dubal & Carter, 2017). Other jurisdictions do not use the ABC test, although the key elements where legal operators look at to determine the status remain (see, for example, pp. 67-68 of the relevant UK landmark case, Uber BV v Aslam [2018] EWCA Civ 2748). Worldwide, landmarks are also contradictory as courts are unable to fully grasp the business model of digital capitalism. For instance, in the UK labour law case Uber BV v Aslam, Uber drivers were considered workers, but the body resolving workers disputes, the Central Arbitration Committee, ruled that Deliveroo raiders were

contractors. In Spain, different jurisdictions ruled one thing and the contrary regarding Deliveroo and Glovo raiders or Uber drivers (Todolí-Signes, 2017).

For some, this ongoing sterile debate will not end until a clearer and updated legal framework is passed. The EU is on its way to approve a directive on platform work, in the meantime, the 'Transparent and predictable working conditions' tries to rise minimum standards for all 'precarious workers'. In the same way, multiple national and regional legislatures have expressed their concerns with regards to the gig work, putting in motion different forms of fair work committees and commissions (such in Australia), or publishing critical reports and briefings addressing the question (Ainsworth, 2018). However, California, homeland of many digital capitalists, is the state epitomising the liberal will for clarifying the question on gig workers' legal status. In September 2020, California senate voted for Assembly Bill 5, which fundamentally amends both the California Labour code and the Unemployment code. This was in fact the codification of a California Supreme Court landmark, *Dynamex Operations West, Inc. v. Superior Court*. AB5's main feature is that it codifies a progressive interpretation of the ABC test.

c) The Liberal Fallacy

Those debates are important and relevant. The misclassification of workers as self-employed is a win-win for digital capitalism. The Trade Union Congress (2017) published a revealing report demonstrating how the precarisation of the working conditions under the gig exploitative system affects individuals and public finances. In a report called *The Gig is Up,* they stated that workers are missing rights (collective bargaining, strikes); pay (weekly pay penalty ranging from 37% on zero hours contracts to 44% on self-employments); and social security protections (such as full maternity or sick leaves). In terms of public finances, the TUC report estimates a loss of revenue of

approximately £5.3bn. In a similar vein, the Spanish union UGT (2019) estimated a loss of taxes and social contributions per worker ranging between 55.6% and 80.5%.

The fundamental problem with the liberal dilemma, is that, even the most progressive interpretation of current or future liberal legal developments won't go to the bone of the exploitative nature of digital capitalism. That is, to the antagonistic relation between workers and capital. And that is because the liberal dilemma comprehends work and relations of production within the liberal framework. 1) Because liberals have put their faith in the rule of law, 2) wistfully believe that the relation between law and relations of production is causal. Therefore, a good labour law will frame the way work is organised. And this has been proved to be wrong. Digital capitalism runs faster that every possible law or court rule, and, even if they get caught, corporations are *too big to jail*, rarely criminal liable, and, besides—and above everything—regretfully, labour exploitation is not a crime (Davies & Ollus, 2019; Snider, 2018) since it is the pillar of the capitalistic regime.

Secondly, as we have seen, the relation of law and capital is not causal, as expressed by liberal or vulgar Marxism. Law is not neutral, not because of its content but because of its form, which is determined by the social formation producing it. The way relations of production are organised today in Global North countries consist of a sum of individual/private contractual relations plus contingent welfare measures (Dukes, 2019; Rahman & Thelen, 2019). We have to add to these fundamental ingredients the sovereign power of the capitalist within their factory and sparkles of state oversight (at times). The liberal dilemma is a liberal fallacy. The legal epicentre of the relations of production in contemporary capitalism is not a net of private contractual agreements between workers and capitalists. Even changing the nature, the form, even the contents of the contracts, for example, extending employees benefits to every worker (which would be great, certainly), the course of events will not change a bit, as it is being demonstrated by the way digital capitalists are behaving in California (with the most advanced and liberal progressive gig labour law). The central aspect of the

relations of production is the production process itself. Working class material conditions will not change as long as power relations in contemporary spaces of production change as well.

The ABC test is one of the declinations of the liberal fallacy. In order to determine the legal status of the worker as employee or contractor, the test looks at something as ethereal as 'the control or direction of the employer in performing the work'. Digital capitalists have been able to game labour legislation, either using East Coast code (law) or West Coast code (binary language). Creativity does not remove the exploiter. The main issue with the legal liberal mind-set, is that, as deep, rich and thorough as it is, is limited by the burdens of the capitalist legal form. The only way to deal with the exploitative nature of labour is by thinking from a non-capitalist epistemology. And that kind of critical thinking is what inspires the next section.

3.2. The Rise of the Legal Machines

a) Digital Lords

> There was a constant cry for some invention that might render the capitalist independent of the working man; the spinning machine and power-loom has rendered him independent, it has transferred the motive power of production into his hands. By this the power of the capitalist has been immensely increased. The factory lord has become a penal legislator within his own establishment, inflicting fines at will, frequently for his own aggrandisement. The feudal baron in his dealings with his serfs was bound by traditions and subject to certain definite rules; the factory lord is subject to no controlling agency of any kind. (Marx, [MECW 21], 2010, p. 383).

The unbalanced power relationship between workers and capitalists did not come out of the control of the employer over the employee, which is a reductionist tautology. Capitalist hegemony over workers came out of the capitalist ownership of the means of production. And that is the key element

we should be looking at to determine the legal status of a worker. The problem of course is not as simple as it seems. Digital capitalism relies on digital machines intangible fixed capital inasmuch as in the very material public (roads, networks) and private (data centres, cables) infrastructures. However, algorithms have become platform corporations' strategic means of production, and as we have seen, algorithms are machines inasmuch as they are codes regulating relations of production. Hence, the question of the means of production is more important than ever. Any attempt to change and relieve the exploitation of the gig proletariat via legislative action will be in vain as long as the codes in which the digital means of production are written remain under control of the capitalist class. However digital capitalists claim that they do not own the means of production. Digital capitalists state that they are service providers for the true entrepreneurs, their workers! Ironically, they were not alone in making such claims.

It is paradoxical to see how post-modern theories on the cognitive work and digital capitalists have coincided on a contested issue that is in the ownership of the means of production. The rhetoric built around cognitive work and immaterial production pointed to the 'new cognitariat' as the owner, or, at least, possessor, of the means of production (Moulier-Boutang, 2011; Blondeau, 1999). Production which is reappropriated by capital through sophisticated apparatuses of capture. Similarly, Deliveroo, Uber, Glovo and others have defended that they do not own the means of production in the delivery or transport business, but that they are just software companies. In their parallel world, these global companies only provide services to true entrepreneurs, the 'raiders' and 'drivers'. In short, for Silicon Valley, Uber's leaders are their racialised, impoverished, *uberexploited* drivers. A judge in Valencia (Spain) had to put on paper what is obvious to workers, clients and the general public:

> The true means of production in this activity are not the bicycle and the cell phone that the delivery person uses, but the digital platform for matching supply and demand owned by the company and outside of which the provision of the service is not feasible (Pitarch & Marco, 2019).

Digital factory lords do not only own the means of production. Neither are their legal powers over workers limited to the punitive power acknowledged by Marx. Digital lords are coding an exploitative legal regime, regulating—without public oversight—the areas that for centuries have triggered class struggle: the working day, wages, working conditions and political rights.

Any attempt to change the working conditions of the gig proletariat would have to deal with a new situation in where machines are not only the law of the production but the law itself. And that law is written in a way that is inaccessible, first, because of technical reasons (code language is not as generalised as other languages); second and perhaps more important, because code is protected by trade secret law. Describing the working conditions of the gig precariat is beyond the scope of this chapter. However, it is worth highlighting some points that demonstrate how the law inscribed in the legal machine serves as a mean to regulate relations of production in an extraordinarily exploitative way.

b) Legal Machines Intensify Capital, Lengthen the Working Day and Lower Wages

Digital exploitation systems monetise every second of the workday by imposing a dystopian vigilance. Name the job: driver, delivery person, a warehouse operator, online teacher. In all those cases, from the moment the workers log in until they log out, each of their movements is recorded. Each click, each page viewed, each object placed, each meter travelled, each message to a student (Delfanti, 2019; Kumar, Vitar, Chetty & Clegg, 2019). The time spent marking, the time used to go to the toilet, the sudden braking, the times the worker rejected an order, the times accepted. Not so long ago, such surveillance conditions would not only have been intolerable, they were also impossible. Today those conditions have become the *new normality*. As Tronti said: ‘it is not the worker who uses the means of production, but the means of production which use the worker’. (Tronti, 2019, p. 12) This intensification came alongside the decommodification of previously

remunerated tasks. For instance, as workers are now considered self-employed, they are responsible for the finances of their entrepreneurial endeavour. Workers with earnings below the living wage are not only forced to work under surveillance conditions, they also have to perform financial, highly specialised tasks formerly responsibility of corporations (Collier, Dubal & Carter, 2017).

One of the defining features of labour-based platforms is the way digital capitalists match workers with clients. This matching process is critical for workers as they often receive wages by the piece, so if they don't have clients they don't work, if they don't work, they don't make money. The way platforms match workers with clients is automatised, managed by an algorithm measuring a number of variables, which depending on the nature of the task could be distance, availability and so on. Along with these technically neutral variables, the algorithms also measure and consider workers' rating. The rating could be a numeric or symbolic value (e.g., 9.2 out of 10, or 4.7 Stars). The higher the value the more likely a worker will be assigned a task (Chan, 2019). The way algorithms assign values to workers is not public, it's a trade secret only known by the company. In theory, the algorithm considers customer's rating. Hence, workers have to dedicate a considerable amount of unpaid affective labour into the task, desperately trying to meet the expectations created by digital capitalist marketing (Ronsenblat & Stark, 2016). Picture the way Uber promises an outstanding luxury service, provided by young trendy handsome, super friendly drivers. But digital capitalists also consider a number of other elements linked to the tight control exerted by the legal machines. For instance, the algorithms take into account the route taken by the driver, as well as the way the driver actually drives:

> For example, the app displays a safe-driving report with two categories, Smooth Breaks and Smooth Accelerations. One driver had smooth breaks 219/264 times, and the app displayed the message "Several harsh breaks detected." Meanwhile, the message "Great work!" followed their grade of 210/247 smooth accelerations. (Some drivers refer to this level of monitoring as "Big Brother" in forums.) (Rosenblat, 2018, p. 134).

But what has perhaps been the most disputed element of the rating system is the way the capitalist measures and leverages the worker's availability. We have to bear in mind that the majority of digital industries have taken a piece-wages approach to pay their workers. In this regard, it seems that Marx assertion is still confirmed today:

> The quality of the labour is here controlled by the work itself, which must be of average perfection if the piece-price is to be paid in full. Piece wages become, from this point of view, the most fruitful source of reductions of wages and capitalistic cheating (Marx, 1990, p. 694).

Workers' availability and rate of acceptance is rated and valued, fully taken into account when assigning further tasks to workers. The more the worker drives or delivers, the more chances will be of getting assigned the best slots, hours or jobs. The problem arises when there is little or no work. Algorithms' rating structure encourage competition between workers, a climate of uncertainty and desperation. Workers are aware that driving or delivering in slow business hours entrails only costs for them. But as peak hours slots or rides are limited, and the algorithm rewards workers availability, they are basically forced to spent long hours logged onto the app waiting for jobs, evidently, an unpaid labour time. So, workers, despite being paid by piece, have to be available, disposable. This availability, this stock of labour power is one of the most valued assets for the digital capitalist. They offer 24/7 availability at zero cost, a most rewarded value in our turbocapitalist society. New York City, aware of the situation, passed regulations on an attempt to improve the drivers' pay by capping the number of drivers. Nevertheless, digital capitalists undercut these protective measures via technology, implementing a new system for the drivers' log-in into the app. As expressed in *Motherboard*:

> Uber and Lyft have restricted the number of drivers who can log on at any given time, with preference given to drivers who drive the most. Ever since these changes were first introduced, Tariq has been sleeping in his car to meet the quotas. It's not that he's homeless. Because he has fallen below the top tier of drivers,

> he tries to be in his car constantly, even if he's not being paid, so that if he's suddenly allowed to log on, he can take advantage and have a better chance of moving up the tier system. "No matter how hard I work, it's never enough. Every day is about how to get online so I can hit the quota and not be locked out," Tariq told Motherboard. "Where do I spend hours parked in the day? Where do I spend hours parked at night? When do I use the bathroom? When do I eat? If I hit the quota, I can relax. I can drive whenever I want. If I don't hit the quota, I get locked out (Ongweso, 2020).

Digital capitalism legal machines are imposing their private West Coast code over traditional labour law, enabling an even more onerous exploitative system. The legal machine defines the rules, assigns the tasks, punishes or rewards the worker, measures their productivity, manages them. The power held by legal machines over workers prove that, as long as the algorithms remain hidden from public scrutiny, the working conditions of the gig proletariat will continue to worsen. Just as in the past industrial capitalist fiercely contested factories inspection, today's capitalists refuse to let enter the light to its shady machinery, whether digital or physical (Benson et al, 2019).

c) Legal Machines Limit Political Rights

Like any other capitalist social formation, digital capitalism wants no unions, no collective bargaining, no protest or organisation of workers. For this, it uses two strategies. Two types of laws. The first is the East Coast code. These companies want workers to be entrepreneurs because 'entrepreneurs' can't unionise, they do not have collective bargaining and they cannot go on strike. This misuse of the self-employed legal status has been weaponised against workers' self-organisation (TUC, 2017; UGT, 2019). On the other hand, they use the law of the West, their legal machine, to destroy any type of union. They have built a system of valuations and work assignments by points that literally pit workers against each other. Deliveroo, Uber, Amazon and any other platform use dark and opaque metrics to rank their operators. With this they try to establish a condition of restlessness, fear, mistrust and individualism. Point systems that combine both user valuation and

worker ‘effectiveness’ are managed behind the scenes by corporations. These hierarchies are disguised as a false technological neutrality. But the code has an ideology, it has an owner, and it has objectives (UGT, 2019). Of course, this goes on the top of classic anti-union strategies such as firing union organisers or funding yellow unions (Blest, 2020; Boewer & Schulten, 2017).

However, these strategies have not kept workers from organising. During the pandemic crisis, digital capitalists lowered base rate payments in places as Madrid or New York, forcing workers to overwork under critical and dangerous conditions. Considered as essential workers, deliverers were not electable for unemployment benefits, hence, these ‘entrepreneurs’ were forced to work. This precarious situation was worsened by the capitalists’ decision of capping the rate, triggering protests and strikes. Despite the state of emergency declared by states such as Spain, the legal framework that illegalised collective action, and the code encouraging individualism, workers went to strike and even managed to organise a rally, in an attempt to call the attention of the quarantined general population (Pato, 2020). We don’t know yet how this ongoing situation will end, but one thing is sure. Even in the worst conditions, with East and West Coast code against them, workers unite, workers fight for their rights, workers challenge exploitation. The gig proletariat is finding its way to organise, even in the divisive conditions imposed by their exploiters. For instance, Uber tech workers have expressed their solidarity with Uber drivers’ struggles:

> Our drivers are the backbone of the platform. Without them—as these courageous strikes have demonstrated—our business would come to a standstill. For this reason, we will not stand by as those that work at the heart of our business are attacked and exploited. We demand that all of our drivers are fairly remunerated, that they gain greater transparency about how their earnings are calculated, that they are guaranteed greater protections, and that their collective voice is heard in the boardroom. As tech workers, we share more in common with the drivers that support the platform than the company executives that spend millions ensuring that ride-share companies, and others in the so-called gig economy, can continue to bend the law and exploit workers. We, therefore, reject the two-tiered division of labor that denies drivers the basic workers’ rights afforded to internal employees and call for the full implementation of the Dynamex

> decision in California. We call on all tech workers to support the actions of ride-share drivers in their mission for fair pay, dignity, and respect and we demand the immediate reversal of the pay cut imposed on drivers in Los Angeles and Orange Counties (Anonymous, 2019).

It is necessary to learn from the gig proletariat struggles. Attention must be paid to the way the gig proletariat is circumventing digital capitalist anti-union strategies. How they are overcoming the individualism imposed by the system. It is necessary to investigate how they are managing to articulate traditional struggles and tools, with more contemporary forms of struggle. It is necessary to carefully study how they are coordinating legal strategies with old-school workers' weapons such as demonstrations and strikes. In short, it is necessary to see how the new exploited class is getting organised.

4. Conclusions

Digital capitalism is using East and West Coast law to institute and strengthen an exploitative system of production based on digital machines. As indicated, rather than being a brand-new phenomenon, this process draws on previous stages of capitalist regulation of the relations of production. Marxism has been attentive to that relation in the past. Its theoretical tools remain fundamental to avoid the false liberal dilemma and to truly grasp the central exploitative nature of digital capitalism. Heretofore, with technological changes new challenges arose. Like other industrial modes of production, this system makes extensive use of machines, but, in many cases, they cannot be smelled, seen or touched, although they do serve to produce. Algorithms are machines because they transfer the value of workers labour to the commodities they produce. They are instrumental to the production processes. Algorithms are portable machines, abstract (as they are diluted in the network), but also incarnated in the mobile devices that we all carry. So now, when they tell us that the city is a factory, we see that it is not an abstraction. What makes Uber is not the car but the

different algorithms in motion. The one setting the prices, the one deciding the route, the one that assigns drivers to passengers. And of course, the ones surveilling workers and passengers. Uber's software is its machinery, and the city (virtual and physical) is the factory.

Everything will change, but not as expected. It is not about automation, flying cars or quantum computers. It will be machines and workers. True, there are cyborgs now, but they are not like *Terminator*. The new cyborg is a delivery person with a bicycle and a cell phone. An algorithm is their boss, their evaluator, their co-pilot. An algorithm is the machine they work for. The future is disappointing, but it is the only one we have. At the moment we will not travel to another dimension. What was produced before will continue to be produced, but in a different way. Production relations are going to be brutally shaken, they already are. Digital corporations have increased their profit margin by intensifying exploitation and extending the length of the workday. This system has not come to replace the previous exploitation systems, it will improve them, take advantage of some, swallow others and some will render them obsolete. Every aspect of production will be altered, from the way we conceive work and time, to remuneration and control, and of course the regulatory framework tying everything together.

Just as society changed in the heat of the industrial revolution, the new society will be the image of the system of production. However, exploitation will continue to be exploitation. There will be those who possess the means of production and those who do not. There will be those who enjoy privilege and those who do not. There will be those who accumulate the wealth generated by society as a whole and those who are dispossessed of it. Therefore, because there is a new, concrete, recognisable system of exploitation, we can say that there is a new productive subject, a proletariat... digital? Platform? Gig? The name does not matter. But its existence is incontestable. It is not about their number, nor how much they represent today in terms of overall production. More and more

productive fields are adopting this mode of production and sooner or later this system will be hegemonic.

Even those advocating for a less interventionist take on the regulation of relations of production have to admit that, if we are to limit the power of digital lords over workers, code must be taken into account. No labour law will be useful to protect workers unless code becomes subject of public scrutiny. Coding is legislating, hence labour law should be coded as well. As it was in the past, the question of the means of production is central to think relations of production, but, today, it is also central to think labour law.

Chapter 5 Disrupting the Government: The Hacked Rule of Law

1. Introduction

In 2020, the general public became aware that they were living in *The New Digital Age,* announced ten years before by the prophets of digital capitalism, Eric Smith and Jared Cohen (2013). During the Covid-19 lockdown, nearly seven out of ten adults in the U.S. were relying on social media for basic communication, they surely noticed the plethora of online events launched for the occasion. One that did not go ignored was the surveillance festival. There, digital lords along with passionate vigilant bureaucrats played a very special hard tech session: free-range tracking and geolocation of citizens (NYT Editorial, 2020), information gently provided to governments by an alliance of Apple and Google (the current duopoly in mobile OS, together compose around 100% of the market share) (Apple, 2020). Severe 'data breaches' (Zoom) in the privately owned communication systems that workers had to use obliged by their employers (Kari, 2020). An extravagant digital democracy with a polluted public sphere controlled by digital juggernauts, obscure digital voting in parliaments around the world while freedoms and rights were pending and the governments were ruling with exceptional powers (The Conversation, 2020). Massive data extraction and corporate manipulation of teachers and students in the free 'educational platforms' provided among others by Google, in what is perhaps the fastest and most successful privatisation of a public service ever. State controlled health information of citizens shared with right-wing companies in shady deals (The Conversation, 2020b). The entire life of hundreds of millions of citizens was mostly metaphorically, but sometimes effectively, uploaded to the privately owned cloud. Amazon became the arbiter of the Global North circulation of commodities, controlling the market, the logistics and the prices. In the no-live-shows reality, YouTube, Spotify and Soundcloud became the rulers of the music industry. The very same applies to the film industry, de facto dominated by Amazon prime, HBO, Netflix and Disney (Koeze, 2020). A handful of privately owned algorithms curated the cultural products to be consumed. During

the forced social distancing, nearly every communication took place online. Interactions between families, friends, co-workers, enemies or lovers were stored, processed and commodified by some unknown data centre. Millions of feelings, intense conversations, sexting, small talks, disappointments, dramas, tragedies and some shared good moments were turned into private assets. On the top of that constellation of algorithms controlling particular aspects of public and private life, stands out automated decision systems, which have been defined as:

> [A]ny software, system, or process that aims to automate, aid, or replace human decision-making. Automated decision systems can include both tools that analyze datasets to generate scores, predictions, classifications, or some recommended action(s) that are used by agencies to make decisions that impact human welfare and the set of processes involved in implementing those tools (AI Now, 2019, p. 2).

According to a study commissioned by the Administrative Conference of the United States to Stanford and the New York University, nearly half (45%) of the 142 agencies studied are using some sort of ADS (Automated Decision System). These new governmental technologies cover nearly every policy area (law enforcement, health, financial regulation, social welfare, commerce, environment, science and energy, communications, agriculture, labour and employment, transportation, housing or education) at every governance task (regulatory research analysis and monitoring, enforcement, public services and engagement, internal management, adjudication) (Engstrom et al, 2020). The rapid adoption of algorithmic governmental tools is having a social cost. Recently, multiple scandals related to the use of ADS in migrant raids, surveillance at colleges or the massive denial of legitimate welfare benefits to citizens, among other violations, have called the attention of researchers, activists and politicians, who have expressed their concerns with the negative impact regarding the erosion of civil, economic and social rights (Jefferson, 2020). However, some political leaders believe those technologies are the solution for the social, economic and health problems caused or exacerbated by the Covid-19. For instance, New York State Governor, Andrew Cuomo, has turned to digital lord Eric Schmidt to lead the state's '15-member Blue Ribbon Commission and use what the state has learned

during the Covid-19 pandemic, combined with new technologies, to improve telehealth and broadband access' (New York State, 2020). Cuomo has also requested the help of the Bill and Melinda Gates Foundation to reorganise the education system.

The digital capitalist expansionist campaign has been on display for ten years now. The Covid-19 crisis has strengthened the silicon doctrine advocates, hastening the transition from post-Fordism to digital capitalism. Some digital socialists defended accelerating the inevitable joining the AI society, which will unleash some sort of communist singularity (Mackay & Avanessian, 2014). I wonder what the authors of the *Accelerate Manifesto* will think of the recent declarations of Erich Schmidt (Google's former CEO): 'We need to look for solutions that can be presented now and accelerated and use technology to make things better' (New York State, 2020b). The history repeats itself; capitalists are using an episode of crisis to implement a radical transformation. The coronavirus epidemic is being an extraordinary transmitter of the silicon doctrine. As Naomi Klein recently said:

> All of this is moving very fast. The Australian government has contracted with Amazon to store the data for its controversial coronavirus tracking app. The Canadian government has contracted with Amazon to deliver medical equipment, raising questions about why it bypassed the public postal service. And in just a few short days in early May, Alphabet has spun up a new Sidewalk Labs initiative to remake urban infrastructure with $400 million in seed capital. Josh Marcuse, executive director of the Defense Innovation Board that Schmidt chairs, announced that he was leaving that job to work full-time at Google as head of strategy and innovation for global public sector, meaning that he will be helping Google to cash in on some of the many opportunities he and Schmidt have been busily creating with their lobbying (Klein, 2020).

At the moment of writing these lines, the *coronavirus reconstruction* is being discussed, and digital capitalists have a word to say. The Screen New Deal is being negotiated worldwide between tech billionaires and governments in crisis (Klein, 2020), proving with it that the distinction digital/real has totally disappeared. Governing in one place is governing in the other. The close relation of digital capitalism and states points not only a qualitative leap in policing or securitarian tasks. We are

witnessing the solidification of governmental techniques rooted in cybernetics and neoliberalism postulates which are firmly attached to digital capitalism. Western democracies, broadly defined by the canonical elements of the liberal ideology—democratic elections, representative government, separation of powers, state sovereignty, individual and collective rights or rule of law—are being disrupted (or as digital capitalist prefer to say, hacked). A new constellation of epistemologies, practices and beliefs, such as digital democracy or algorithmic regulation, is eating from within what is left of the Global North welfare states. The surveillance-industrial complex is Foucaldian as it can be, it's not only surveilling or punishing but producing a form of life, a governmentality, deeply connected with an exploitative economic system. Not for nothing Zuboff (2019) has named this mode of production as 'surveillance capitalism'. Hence, we can assert that the radical transformation of the Western theories and practices of the state, and with it that of the justice, democracy and freedoms, is a consequence (and a cause) of the wider socio economic transformation here identified as digital capitalism. What are the ideas behind this digital disruption of the state? What political concepts are driving the platformisation of states and governments? Are we at the verge of living in a global mega-gulag or a surveillance totalitarian conservative dystopia?

This chapter will analyse the theoretical grounds of the digital capitalist theory of the state through a critical overview of two of its most relevant (but not always acknowledged) intellectuals: Eric Raymond and Tim O'Reilly. The following sections will analyse how these digital capitalists envision and have influenced the institutional architecture of public administration and the rule of law. With this, I aim to examine how the platformisation of the state and the increasing use of automated decision systems undermine the fundamentals of liberal democracies. First, I shall scrutinise the political ideas behind the open-source movement, core inspiration of the digital capitalist theory of state. Secondly, I will explain the 'government as platform' paradigm that proposes the Silicon Valley corporate managerial mode as suitable to running a country. Thirdly, I shall dig in the thick socio-cybernetic ideology underlying automated decision systems, here equated with algorithmic

regulation. Finally, I will discuss the way digital capitalism's theory of state challenges Western(ised) political and legal ideas from all the political spectrum.

2. The New Theorists of the State

2.1. The Austrian Bazaar

For centuries, capitalists have tried to convince us that the best way to run a country is to manage it as if it was a company. In 1996, Paul Krugman wrote a piece with a very explicit title: 'A country is not a company'. Krugman tried to make it clear that the managerial know-how of corporations is not transferable to the one of public finances. As he said, 'an executive who has made $1 billion is rarely the right person to turn to for advice about a $6 trillion economy'. A specific type of expertise is needed to run public finances. Today's digital capitalists have refined the idea that a good businessperson makes a good politician (a notion sadly embodied by Mr Donald Trump). Drawing on the silicon doctrine, contemporary innovators demand the state to become a massive start-up platform government.

Behind every social transformation lies a history. It might be written or not, but beyond the author's expectations it becomes viral, inspiring the generational influencers. Path-breaking conceptual technologies, such as Wikipedia, Netscape or the idea of marketable open-source run software, wouldn't exist as we know them without the contributions of a book published in 1999. That was the year of Napster, Californication, The Battle of Los Angeles, The Mars Polar Lander, the Euro and, of course, David Fincher's *Fight Club* announcing the permanent end of the world/crisis in where we live today. But above everything it was the year when F. A. Hayek was elevated to Geek heaven in Eric S. Raymond's *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary.*

This remarkable work details the advantages of a libertarian way of software programming (the bazaar), business management and, more generally, social organisation, as opposed to the hierarchical cathedral one. For Raymond, bazaars are a cooperative marketplace with no identifiable centre, where spontaneous order merge from the free interactions of individuals. Spaces of controlled chaos, where an invisible line connects the spots and brings order and structure. Raymond named that line as the Linus' law: "Given a large enough beta-tester and co-developer base, almost every problem will be characterized quickly and the fix obvious to someone, or, less formally, 'given enough eyeballs, all bugs are shallow' " (Raymond, 1999, p. 30).

This law will become the open source's thinking and social ordering's master stone, as was stated by Raymond itself:

> The "severe effort of many converging wills" is precisely what a project like Linux requires—and the "principle of command" is effectively impossible to apply among volunteers in the anarchist's paradise we call the Internet. To operate and compete effectively, hackers who want to lead collaborative projects have to learn how to recruit and energize effective communities of interest in the mode vaguely suggested by Kropotkin's "principle of understanding" They must learn to use Linus's Law (Raymond, 1999, p. 52).

The Cathedral and the Bazaar was, and still is, a tremendously important work, not because it was especially imaginative or was written in a breath-taking style, but because it advanced the logic of today's monopolistic digital capitalism. And it did it, neither as a business manual nor as software for dummies, but as a grow-up hacker manifesto intended for hackers. Raymond, who was something of a hacker historian and intellectual, knew very well the teenage-narcissistic hacker mind-set forged in the mid-80s and developed in the 90s. He intuited that the way hackers were communicating, having fun, some of them even making money, was announcing something new and different. Hackers were neither failed engineers nor potential entrepreneurs, nor were they meant to be another subculture like the cyberpunks (which he considered a waste of time). Hackers, as talented individuals, as makers,

deserved their rightful space within the ruling class. They just needed a strategy, a way to reach their potential in their own terms. And that would be open-source, software 'with source code that anyone can inspect, modify and enhance.' (Opensource, n.d.)

The way open-source is described in the book does not only points as a way of enabling communication, sharing information, coding or doing business. For Raymond, open-source is the genuine social technology of the hackerdom, the hacker way of doing things. The book fundamentally says that hackers have the keys to success. That they already know how to code faster, better, efficiently, having fun, reducing costs and redundancies. Linux was the best example. The book is a call to arms to the hackers, open-source will be the means to obtain the hackers vengeance. The best strategy not just as 'a way to grow markets but as a strategic manoeuvre against a company's competition' (Raymond, 1999, p. 148). Sounds familiar? As I explained in chapter 2, Google is successfully promoting and using open-source in its services, especially in its hegemonic OS Android for years now.

The book was released at the right moment at the right place, right before the dot-com boom. Yet, although the evangelic word of open-source had been active for a while, very few took it as the next big thing, and no one was considered hackers as anything else than useful freaks, dangerous criminals or failed ITs. Raymond reconceptualised the term Hacker and turned it into the disruptive entrepreneurial version that many young hackers of the Web 2.0 later vindicate as a way of life. Perhaps the clearest example of Raymond's theoretical success is Facebook. In 2012, Mark Zuckerberg filled the prospectus for the Facebook initial public offering. His letter to the potential investors had for title *The Hacker Way*:

> The Hacker Way is an approach to building that involves continuous improvement and iteration. Hackers believe that something can always be better, and that nothing is ever complete. They just have to go fix it—often in the face of people who say it's impossible or are content with the status quo. (…) Hacking is also

> an inherently hands-on and active discipline. Instead of debating for days whether a new idea is possible or what the best way to build something is, hackers would rather just prototype something and see what works. There's a hacker mantra that you'll hear a lot around Facebook offices: "Code wins arguments" (Zuckerberg, 2012).

Zuckerberg's words (and acts) not only incarnate but complete Raymond's sketch of the Hacker Übermensch. In his book, Raymond was not encouraging hackers to code but to dominate the world along with their corporate friends. A gentle, fun and not-evil Jedi domination, claim that ended up being an essential aspect of the silicon doctrine narrative:

> We half-joke about 'world domination', but the only way we will get there is by serving the world. That means J. Random End-User and his Aunt Tillie; and that means learning how to think about what we do in a fundamentally new way, and ruthlessly reducing the user-visible complexity of the default environment to an absolute minimum. Computers are tools for human beings. Ultimately, therefore, the challenges of designing hardware and software must come back to designing for human beings—all human beings. This path will be long, and it won't be easy. But I think the hacker community, in alliance with its new friends in the corporate world, will prove up to the task. And, as Obi-Wan Kenobi might say, ''the Source will be with us'' (Raymond, 1999, p. 191).

From today's perspective, the open-source move seems like an obvious one. We live in the world of 'free services' like Google, Facebook and so on. Not only that; the coding universe is also coped by corporate lead 'open-source' initiatives, for instance, Android. But back in the days when Microsoft Imperium was on its peak, to propose open-source (a grammatical construction only respected by Californian weirdos playing *Doom* and skating) as a business and social model was relatively a crazy move. Or perhaps not that crazy. After all, around fifty years before, the well-respected Austrian economist F. A. Hayek published an influential paper advancing much of what many have been saying and doing with regards free information flux and capitalism:

> We must look at the price system as such a mechanism for communicating information if we want to understand its real function—a function which, of course, it fulfils less perfectly as prices grow more rigid. (...) It is more than a metaphor to describe the price system as a kind of machinery for registering change, or a system of telecommunications which enables individual producers to watch merely the movement of a few pointers, as an engineer might watch the hands of a few dials, in order to adjust their activities to changes of which they may never know more than is reflected in the price movement (Hayek, 1945, p. 526).

Or, in other words, the price system enabled by a well-ordered free market would allow a decentralised coordination of the socio-economic order. Hayek's thought (or better said, some very specific aspects of it) lays the foundation of two of the most important layers of the silicon doctrine ideas on state and regulation: cybernetics and neoliberalism. It falls out of the reach of this study to analyse in depth the thought and works of the Austrian. But still, Hayek is an unavoidable figure. As we are about to see, the influence of his ideas of spontaneous order, flux of information remain as source of inspiration for corporations and policy makers worldwide. There is no clue of what Hayek may have thought of the monopolistic becoming of open-source-digital corporations like Google. Someone asked a similar question fifteen years ago regarding the Microsoft antitrust case, with no conclusive answer (Paul, 2005).

2.2. Digital Capitalist Theory of the State's Two Pillars of Wisdom

If it were something called the Silicon Valley Mainstream Hacking Culture chair at Stanford University, Tim O'Reilly would hold it. He is not a programmer or an engineer but a book publisher who succeeded in becoming the transmission gear between geek programmers, hackers and academics. Without coding a line, he managed to become part of the contemporary trinity of digital capitalist thinkers, along with Jarod Lanier and Peter Thiel. Disdained by high culture academics, who have to justify the use of O'Reilly's concepts (for instance in Yeung & Lodge, 2019), he has become nevertheless a game-changer, shaping how society sees and talks about technology. To

illustrate this, he is responsible for the concept of web 2.0 (O'Reilly, 2005) (is there another way to define the Facebook era?). O'Reilly has been able to nurture, name and influence two of the pillars of the emergent field of digital governance: government as platform or gov. 2.0 (2009-2010) and algorithmic regulation (2013).

a) The Platformisation of the State

The first pillar of the digital governmentality has to be the architecture of the state. Tim O'Reilly outlined the seven amendments (sins?) of the Government as a Platform paradigm, which fundamentally urge governments to become platform capitalism's copycat. The work became an instant classic, framing further research and providing with a fancy name discredited neoliberal theories. It is worth highlighting the defining features of the 'new' government as platform theory of the State, in O'Reilly's own words:

> The whole point of government as a platform is to encourage the private sector to build applications that government didn't consider or doesn't have the resources to create. Open data is a powerful way to enable the private sector to do just that. (…) Being a platform provider means government stripped down to the essentials. A platform provider builds essential infrastructure, creates core applications that demonstrate the power of the platform and inspire outside developers to push the platform even further, and enforces "rules of the road" that ensure that applications work well together (O'Reilly, 2010, pp. 20-36).

In short, government as a platform means private sector hegemony over the fundamental infrastructures of contemporary everyday life, all with the assistance of a public sector reduced to the minimum. Hidden behind a curtain of vibrant tech, open data, free software rhetoric, we found the classical neoliberal argument of 'the private is better'. For instance, in the cited works of O'Reilly, governments are encouraged to ignite a digital revolution. For that reason, governments should follow the 'the examples of Microsoft, Google, Amazon, Apple and other

giants of the technology world as it is clear that they succeeded by changing all the rules, not by playing within the existing system' (O'Reilly, 2010, p. 38). Unsurprisingly, O'Reilly is inviting governments to follow the example of publicly known corporate criminals, who not only haven't paid for their crimes of the past but are perpetrating and planning the crimes of the future (fact that is undisputedly arguable thanks to the extent and publicly available records of litigation involving the mentioned corporations) (Brandon, 2020). O'Reilly does not provide a working definition of what Platform as a Government means, but former member of the founding team at the UK Government Digital Service and Government as a Platform advocate Richard Pope does: 'Reorganizing the work of government around a network of shared APIs and components, open-standards and canonical datasets, so that civil servants, businesses and others can deliver radically better services to the public, more safely, efficiently and accountably' (Pope, 2019).

Pope also wrote an interesting white paper titled *Playbook: Government as a Platform* for the influential Ash Centre for Democratic Governance and Innovation (Kennedy School, Harvard). There, he details recommendation for governments willing to take seriously the Platform as a Government paradigm using as role models commercial platforms (digital criminal corporations) like Google. Following the agile and design thinking methodologies, governments should become efficient service providers, and citizens, customers. Hence, the public administration should embrace user-centred structures and be open to share and engage in fruitful relationships with the private sector in order to provide the best possible services at the minimum cost. After all, as Stephen Foreshew-Cain, former leader of the UK's Government Digital Service, and hence former Pope's co-worker, said: 'Users don't care about the structure of government. They don't care which department does this or agency does that. They don't care about your process. They just want to do what they need to do, get stuff done, and get on with their lives' (Foreshew-Cain, 2016).

Now, I shall outline three different government as a platform strategies I have identified: 1) E-Government; 2) State as a service market; and 3) Free range corporate disruption. The public-centred approach is well represented by Estonia, in their own words 'the coolest digital society' (Estonia, n.d.). There, the entire government agencies and functionalities have been uploaded, demolishing the departmental silos between agencies, and, therefore, redundancies in bureaucracy and formalities. The Estonian way is an example of state led and planned digital strategy that also encompasses broader digital transformation in different areas such as urban design (smart cities), science (strengthening of networks and digital infrastructure) and education (curriculum, tools and infrastructures). The UK Government has fully adopted the state as a service market approach, establishing a digital market place for the public actors to buy services from providers (public and private). The intention, following O'Reilly's advice, is to tear apart government structures, enabling as much decentralisation as possible. However, government remains as an arbiter, setting the standards and defining the general frame. For example, in 2018, the UK Government set up the GOV.uk Design System (UK Government, n.d.), which provides working teams with the tools to 'normalise' their service.

In the third example (free-range corporate disruption), digital corporations disrupt the provision of public services, offering an often free-of-charge product in an unregulated or poorly controlled sector. That might be because the state has little or no resources, and hence is impossible for it to provide the public with a service; because digital capitalists have a better product and states cannot compete, or because a new necessity arises out of a situation of crisis. All of the above are fairly represented by the rapid penetration of Google Education and Zoom on the educational system around the globe during the second quarter of 2020 (Baker, 2020). The generalised Coronavirus lockdown and closure of schools forced to a rapid adaptation of education providers to a distance learning environment. However, not everyone was on the same starting point. Despite the challenging situation, rich universities of the Global North were better equipped with digital infrastructures, proprietary

programs, know-how and resources than universities in the Global South. In any case, most primary, secondary and professional schools lacked basic tools, methodologies and skills in order to provide distance learning. That was a fertile field for digital corporations avid of new markets, captive customers, and the opportunity of becoming the infrastructure to completely take a new market, setting the conditions. The educational digital divide was also palpable on the side of the students. As research is starting to show, those in a better economic situation, with adequate devices and study places, were in a better position to deal with the distressing situation and with the sudden digital environment (Finley, 2020). At the moment of the Covid-19 epidemic, Google was already facing legal scrutiny for the alleged violation of children's private data in the State of New Mexico, but the situation exceeded a data breach. As stated by New Mexico Attorney General Hector Balderas:

> By tracking and cataloguing everything children do online and on their digital devices, Google has unprecedented visibility and access into the online lives of children across the country (…) though it is marketed to schools as purely educational tool, Google education provides far more benefit to Google than it does students or schools. Google recognizes that by giving children free access to its online tools and habituating them at a young age, Google obtains something much more valuable: generations of future customers (New Mexico v. Google, pars. 45-46).

b) Automating Decisions: Algorithmic Regulation and its Critiques

What I have here identified as the second pillar of the digital governmentality has to be the 'bugaboo of today's politics' (O'Reilly, 2013, p. 289) that is law and regulation, here broadly understood as a way to regulate behaviour and shape social order. For O'Reilly, the question of law and regulation is not about inputs (in political: science language legitimacy) or processes (in legal jargon: due process and fairness in decision making) but about outcomes (in popular culture: justice served). O'Reilly thinks of law as a program to execute, intended to pursue an objective defined by the programmer. O'Reilly's algorithmic regulation has four characteristics: '1) A deep understanding of the desired

outcome; 2) Real-time measurement to determine if that outcome is being achieved; 3) Algorithms (i.e., a set of rules) that make adjustments based on new data; 4) Periodic, deeper analysis of whether the algorithms themselves are correct and performing as expected' (O'Reilly, 2013, pp. 289-290).

The algorithmic regulation envisioned by O'Reilly is not static. It evolves, learns and adapts. What matters is not the content of the regulation but the objective. Let's say we aim to achieve safer roads (as mentioned by O' Reilly in the aforementioned text). The adaptive automatized laws, defined by O'Reilly as algorithmic regulation, would be reflecting an endless sequence of feedback loop obtained through multiple sensors, such as GPS or speed cameras. For instance, reducing or increasing the speed limit depending on the traffic conditions. That is a legal machinery that works capturing inputs and outputs, and, accordingly, self-adjusting to each situation (O'Reilly, 2013). But, how may it look in real life? For O'Reilly, a good example of algorithmic regulation is the one used by Uber in its exploitative endeavour. O'Reilly understands that the legal machine regulating drivers and users' behaviour with a different set of surveillance techniques ranging from rating to tracking, the price of the fare, the salary of the worker or the route successfully leads to a situation in where efficiency in providing the service is maximised. Summarising, for O'Reilly, the key for the success of Uber lies on its ability to enable a decentralised self-regulatory system based on an immense flux of information between the different agents (note here the resemblance with Hayek arguments on knowledge, information and prices). This self-regulatory system aims to avoid conflict and disruption while reaching the homeostatic nirvana dreamed by the cyberneticist. O'Reilly's description of algorithmic regulation does not really go much further beyond the catchy name. So, before I proceed with my analysis, it is worth clarifying the question with the help of law and technology scholars Karen Yeung and Mireille Hildebrandt.

Yeung (2011; 2018) considers algorithmic regulation as an example of cybernetic governmental strategy. Algorithmic regulation's cybernetic roots were outlined by Hildebrandt (2016), who traced back its conceptual and technological grounds to three main contributions, two authors and one sub discipline: Claude Shannon's mathematical theory of communication (based on the conceptualisation of information as a regime of signs); Norbert Wiener's cybernetic theory of distant control of human and machines; and the development of ML, that is, 'the use of computing systems to detect patterns in data that allow a system to update its own program' (Hildebrandt, 2018, p. 9). Yeung defines algorithmic regulation as:

> [D]ecision making systems that regulate a domain of activity in order to manage risk or alter behavior through continual computational generation of knowledge from data emitted and directly collected (in real time on a continuous basis) from numerous dynamic components pertaining to the regulated environment in order to identify and, if necessary, automatically refine (or prompt refinement of) the system's operations to attain a prespecified goal (Yeung, 2018, p. 507).

In appearance, algorithmic regulation looks like any other architectural or design-based technique of control and hence it is structured around three core components: Setting standards, gathering information and finding the ways to enforcing standards and modifying behaviour. However, Yeung (2018), considers that algorithmic regulation differs from architectural regulation in two critical aspects: its adaptive feature and the technological power driving the algorithms. Thus, this form of algorithmic power is leading to a new form of a cybernetic social ordering. From this point, Yeung's socio-technical analysis coincides with other theoretical developments highlighting the intimate relation of this system with digital capitalism, datafication, data colonialism and so on. Yeung's legal critique of algorithmic regulation draws on the works of legal & tech liberal scholars (such as Frank Pasquale). Standing on them, Yeung details how key aspects of legal liberalism such as fundamental rights, due process or liberal representative democracy itself are threatened by the

lack of accountability, transparency and public review of automated decision systems. Hildebrandt (2018, p.11) highlights several arguments against algorithmic regulation: ML software decisions are opaque, inscrutable and, eventually, incontestable; the computational roots of the automatized decision-making process entails a shift from reason to statistics; fundamental rights such as right to privacy or to non-discrimination may be threaten in the creation and developing process of data driven artificial intelligence.

Both Hildebrandt and Yeung arrive to a similar concussion. The progressive implementation of AI is driven by new forms of capitalism threatening 'our capacity for democratic self-government' (Yeung, 2017, p. 132). Yeung claims that we 'must establish more effective, practically enforceable constraints to tame the excesses of Big Data-driven hypernudging' (Yeung, 2017, p. 132), while Hildebrandt, more concrete, defends this constrain should be coded, a legal protection *by the design* that would 'safeguard our ability—as individuals—to challenge automated decision systems, by providing time and space to test and contest the workings of such systems' (Hildebrandt, 2018, p. 16).

Hildebrandt and Yeung's analyses correctly point out how the silicon doctrine threatens fundamental rights and liberal democratic values. However, they fail to establish an overarching critique of cybernetic algorithmic regulation, firmly rooted in the socio-economic structure of digital capitalism. And they do it for two main reasons. First, as it has been outlined in multiple places (Kline, 2015; Wiener, 1950), the touchstone of the neoliberal socio-cybernetic political thought is its quest for an anti-entropy system, a conflict-free autopoietic space of equilibrium and dynamic control. For digital capitalists, the purpose of algorithmic regulation is to reach this situation of control. And control is obtained and achieved through an efficient management of information. If the algorithmic regulation system fails, it may be due to two reasons: defects in design or obstacles in the extraction, flux and interpretation of information. This unveils a key aspect of algorithmic regulation: its pretension to

being a purely technical task based on neutral technologies. The liberal critique, including here not only Hildebrandt's and Yeung's contributions but also those produced by representative research groups and organisations such as AI Now (2018) or Algorithm Watch (2019), among others, doesn't really explore the political questions hidden by allegedly technical condition of algorithmic regulation.

Secondly and more importantly, even if liberals acknowledge that there is a political and economic project behind the cybernetic-algorithmic revolution, they don't fully depend on the totalitarian negation of politics through the automation of decisions. What algorithmic regulation really means, and what concepts such as algorithmic governmentality (Rouvroy, 2016) can't grasp, is that behind the term algorithmic regulation hides the substitution of the active subject in politics by machines. Or put it into other words, the abduction of the political decision from humans in favour of state-corporate algorithms is the founding moment of the digital capitalist state. For 'the sovereign is he who decides the exception' (Schmitt, 1985, p. 5):

> All law is "situational law." The sovereign produces and guarantees the situation in its totality. He has the monopoly over this last decision. Therein resides the essence of the state's sovereignty, which must be juristically defined correctly, not as the monopoly to coerce or to rule, but as the monopoly to decide. The exception reveals most dearly the essence of the state's authority. The decision parts here from the legal norm, and (to formulate it paradoxically) authority proves that to produce law it need not be based on law (Schmitt, 1985, p. 13).

Carl Schmitt's quote has to be placed within the broader tradition of Western constitutionalism, and, more specifically, with its epistemic foundational moment incarnated by the notion of constituent power. That is the idea that power vests in the people. Summarising, while it is concerning the way automated decision systems undermine fundamental rights, what is really at stake is the very

fundament of Western constitutionalism, the political decision, the sovereign decision. In the next section, I will explain how the technical composition of algorithmic governmentality hacks the conceptual linkage that bounds law and politics, depoliticising it and challenging with it most of Westernised legal and political philosophical schools.

3. The Hacked Rule of Law

3.1 Between the Legal and the Technical: The Political Question

In Westernised legal traditions, technical regulations and laws are (theoretically) firmly distinguished. Despite the apparent resemblances in the way they look or shape behaviours, both differ ontologically. For instance, Evgeny Pashukanis takes an explicitly dialectical posture to distinguish between one kind of rules from the other:

> A basic prerequisite for legal regulation is therefore the conflict of private interests. This is both the logical premise of the legal form and the actual origin of the development of the legal superstructure. Human conduct can be regulated by the most complex regulations. But the juridical factor in this regulation arises at the point when differentiation and opposition of interests begin. Gumplowicz states that 'controversy is the fundamental element of everything juridical'. In contrast to this, the prerequisite for technical regulation is unity of purpose. For this reason, the legal norms governing the railways' liability are predicated on private claims private differentiated interests while the technical norms of rail traffic presuppose the common aim of say maximum efficiency of the enterprise (Pashukanis, 1983, p. 81).

For him, the presence of conflict between parts, or, in Mouffle's (1999) softened and more philosophical language, agonism, defines the legal form. If what you see is unity of purpose, you are

in front of a technical regulation. For liberals like Kelsen, the validity, and hence the legal condition of a norm, is determined by its relationship with the broader legal system with which it is organically and hierarchically connected. Surely, the way the boundaries are established between technical regulations and laws is an inherently political discussion itself and will differ depending on the ideology fuelling the legal framework. To illustrate this, some may consider the prison code as a technical regulation while for others is the best example of biopolitics. Whatever the distinction might be, what matters is that between the legal and the technical exists a political hiatus, and that entails conflict, relations of contradiction and antagonism, lines of friendship and enmity.

In sum, generally, a rule is considered part of the legal reign as long as it is a political product. In fact, 2.500 years of western(nised)-Eurocentric political and legal philosophers have been asking the same question: how the legal connects with the political? For the diverse family of contractarians, the way a legal and political system is organised arises from the will of its people, yet because they wanted it, or because they need it (Olsaretti, 2018). For some materialists, it is just an emanation of the relations of production (Stučka, 1988). Carl Schmitt once said that 'all significant concepts of the modern theory of the state are secularized theological concept' (Schmitt, 1986, p. 36). Even in Kelsen's positivist thought, the radical distinction between law and the political evidences a dialectical opposition that only highlights the connection between each pole. A relation that is even more palpable in Kelsen's conceptualisation of the Grundnorm, or the basic norm underlying the legal system, in fact a political product (Kelsen, 1941; Correas, 2012).

Cyberneticists, in their pretended objectivity, aim to build a neutral, highly efficient legal technology, free of the sterile discussion around justice. After all, we don't know what justice really is, and even if we knew, what matters to the average citizen are outcomes not abstract values (Alsina & Martí, 2018). This argument is, of course, false. As a plethora of journalists, sociologists and philosophers of technology have proved (Noble, 2018; Eubanks, 2018; Chander &

Krishnamurthy, 2018, Morozov, 2011), there is not such a thing as neutral technology. The very code in which the algorithm is written embodies the politics of its time. In short, techno-determinism in the Google-Amazon era equates with digital capitalism advocacy. But perhaps what is more important is the question around data. After all, algorithms are digital machines built on data with the purpose of processing data. But how good is the data we are using to train our digital machines?

One of the best and most widely studied examples of biased technology is the policing systems used by law enforcement agencies to predict crimes. To illustrate this, in their *Dirty Data, Bad Predictions: How Civil Rights Violations Impact Police Data, Predictive Policing Systems, and Justice* Rashida Richardson, Jason M. Schultz and Kate Craw (2019) reveal how police data gathered during periods of flagrant racism that has been used to train predictive police tools is resulting in racist and biased algorithms. However, contemporary discussions on how bias data and technology are used to govern oppressed populations are not new but, in fact, continue to be an old debate around the allegedly neutrality of government by numbers. There is an extensive literature, a complete science I may say, analysing the close relationship of the modern/disciplinary state and the science of statistics (Sokhi-Bulley, 2011; Kalpagam, 2014). The rudimentary technologies of the eighteenth century have little to do with modern automatised data scrapers (Rouvroy et al., 2013). However, no matter the stage of development of the data gathering technology, the original sin is present: Who asks what about whom through which technologies, and how it processes the data? The subalterns don't speak neither under the colonial rule of the numbers nor under the algorithmic numeric governmentality. Asking the questions, measuring the data and making sense of the results, necessarily require one or another idea of justice.

3.2 State and Law

Since the advent of the colonial-capitalist modern state, the legal-political question presupposes the idea of the sovereign as the one who decides. Making laws necessarily involves it, whatever their interpreter is. It could be the king, the queen, the party, the soviet, the parliament, the Pope, for law, written or unwritten, given by God or by the common, incarnates the political processes constituting the imagined community whose political body is the sovereign. Simplifying what has been told in countless occasions, despite the diversity of forms and political systems, for the last five centuries the legal-political schema of Western and Westernised nations could be schematised as follows: There is a sovereign and there are rituals and processes. There is public sanction of the law and enforcement of it (if resources are available). There will be legal or political bodies established monitoring if the subjects are complying with the law, and the same or separate bodies reviewing if it the state apparatuses are adequately implementing what was sanctioned by the sovereign in its terms. Some might say—defending what was argued by Schmitt (1986), Benjamin (2019) and Agamben (2017)—that the sovereign really reveals its power when it proves the irrelevance of the political schema outlined above. That is, when the sovereign proves that law, that the legal and the political system, exists because the sovereign disposes it, decides it, wants it. Others (Tiqqun, 2010), following Pierre Clastres (1977) claim that the sovereign is a negative power, contested and rejected by the true power, society.

But what I am discussing here is not whether the sovereign is within or above the political system, if it exists in body and soul, or if its power is moral or legitimate. What is at stake here is the political condition of the social relations from where objective realities, such as states and laws, come into existence. Cybernetics clash with classical political thought in two dimensions. First, automated decision systems challenge the inner logic of the concept of decision, which is choosing, making choices. If a decision is automated then is not a decision. Second, automated *non-decision* systems will be de facto abolishing the notion of public sphere and action (understood in its political dimension) for it will be substituted by a network of nodes and sensors capturing opinions, intentions

and desires. A feedback loop that will replace action for an artificially mediated sub-product. Let's recall Arendt's words highlighting the foundational character of unmediated action in politics:

> Action, the only activity that goes on directly between men without the intermediary of things or matter, corresponds to the human condition of plurality, to the fact that men, not Man, live on the earth and inhabit the world. While all aspects of the human condition are somehow related to politics, this plurality is specifically the condition—not only the conditio sine qua non, but the conditio per quam—of all political life (Arendt, 2018, p. 7).

Automated 'non-decision' systems might be effective for whatever purposed aim, let's say governing, but the god-like machine will be reigning not over free folks but over slaves. In short, the very essence of state politics—not economy, not religion, not culture—consists in how the sovereign decides, implements and reviews laws, in a conflictual, contradictory, deliberative or even antagonistic process. The cybernetic negation of conflict and abolition of the decision question the grounds of how liberal political thinkers have discussed the relation of law, politics and the modern-state. For Schmitt, 'the concept of the state presupposes the concept of the political' (Schmitt, 2008, p. 19) and, as it is widely known, for Schmitt, the concept of the political means to distinguish the friend from the enemy. Liberal and social democratic political philosophers defend that agonism is the prerequisite of democracy (which even for the libertarians requires, at least, a minimum state). Their concern is not regarding the existence of conflict and dissension, undeniable facts, but in regard to its management:

> I consider that it is only when we acknowledge the dimension of "the political" and understand that "politics" consists in domesticating hostility and in trying to defuse the potential antagonism that exists in human relations, that we can pose what I take to be the central question for democratic politics. This question, pace the rationalists, is not how to arrive at a consensus without exclusion, since this would imply

> the eradication of the political. (...) The crucial issue is to establish this us/them discrimination in a way that is compatible with pluralist democracy (Mouffle, 1999, p. 755).

Hence, we may state that the political digital capitalist theory of state mutilates the political *potentia* of the act via compulsory mediating technological tools, embodying Schmitt's (2008) and Arendt's (2018) worst nightmares. The former was concerned with liberalism's depoliticising and individualising drift. While for the latter, as we have seen, the action, the body, the political, threatened by the mass society, was the quintessence of political life. Automated decision systems mean state as code. And no matter how open, the code is a set of instructions given in a particular programming language where no contradiction, antagonism or dissent would be allowed as the declared objective of cybernetics is to limit and encapsulate entropy. Cybernetic rule of law is a flow of prefigured instructions in an enclosed environment or circuit, under the attentive scrutiny of those capturing and handling the information. In Tiqqun's words:

> [C]ybernetics is not, as it tends to be understood, just the separate sphere of production of information and communication, a virtual space that would be superimposed on the real world. It has become clear that cybernetics is rather an autonomous world of apparatuses merged with the capitalist project insofar as the latter is a political project, a gigantic "abstract machine" made up of binary machines deployed by Empire, a new form of political sovereignty, and, it must be said, an abstract machine that has turned into a global war machine (Tiqqun, 2020, p. 24).

Cyberneticists interpret the perceptible world as a network of closed signalling loops. The interaction of machines, humans and animals, the vast complexity of the whole existence could be apprehended and reduced to signs having enough data points. Hence, 'govern would become a rational coordination of the flows of information and decisions that circulate through the social body' (Tiqqun, 2020, p. 18). A total mobilisation of global proportions.

4. Conclusions

Behind the surface of freedom, digital capitalists (contemporary cyberneticists) regard society as programmable and controllable state-capitalistic software. “The cybernetic modernization of power and the expired forms of social authority thus can be seen as the visible production of what Adam Smith called the ‘invisible hand,’ which until then had served as the mystical keystone of liberal experimentation” (Tiqqun, 2020, p. 30). This libertarian market is circumscribed to a controlled and state-surveilled environment. A place in where information will flow out of the catastrophic consequences of entropy, thanks to a surveilling system developed enough to make each node and vector transparent to each other. The open government and algorithmic regulation paradigm holds the flag of transparency and free flux of information. However, the openness of data is limited by the surveillance design of the controlled ecosystem. Those who are inside the matrix would be transparent to each other, but also to those who, like the opaque, inscrutable cyber-sovereign, would be looking from above. Uber has a name for that particular omniscient way of looking: God’s view (Fung, 2017). While workers and clients only have a segmented fragmented part of the information about the fares, routes, clients and workers available, Uber has complete live information, 24/7. The information is captured from a myriad of data points. The notion of God’s view falls beyond the economic, it is a very explicit political declaration. Tiqqun asserts that ‘with cybernetic capitalism, the *political moment* of political economy subsequently dominates its economic moment’ (Tiqqun, 2020, p. 69). What Silicon Valley techno-utopians are proposing is to embrace the market/bazaar as an ontological site of formation of truth for the new state. The allegedly ‘neutral’ scientific algorithmic governance stands on what Cohen named as informational capitalism (2019).

Raymond’s libertarian bazaar cannot hide what is in fact a place of extraction and exploitation, a biopolitical public domain intended to nurture the machinery of the latest manifestation of capitalistic governmentality. Algorithmic regulation presupposes the elimination of the distinction between the

legal and the technical by implementing a progressive suppression of the political. But algorithmic regulation is not an end but the means for a new way of governance where tech corporations will be playing a crucial role in the platform state. Digital capitalists envision a legal machinery able to regulate a country. A constitutional algorithmic regulation composed by many subsystems producing governance and sovereignty and modulating the behaviour of entire populations.

Chapter 6 Whose Digital Future?

> 'We need to think big. The natural habitat of the left has always been the future, and this terrain must be reclaimed' (Srnicek & Williams, 2015, p. 141).

1. Introduction

One of the lessons we have learned from the increasingly frequent cycles of economic crisis since 2008 is that the Global North hegemonic capitalist economic model is only alive thanks to its parasitic relationship with the public sector. During the great recession (2008-2009) some of the biggest financial institutions were nationalised after their absolute failure (Voszka, 2017). Ferocious capitalists survived only because nation States transferred them an immense amount of funds, in what was, for some, a de facto nationalisation. The 2020 economic crisis represents a qualitative leap of parasitic capitalism. This time is not the banks alone but the private sector as a whole that has to be rescued at the expense of taxpayers. 2020 was the year in which we witnessed the defeat of the neo-liberal fiscal orthodoxy in public spending. After decades of cuts in public expenditure and investment in essential services such as health or education, the Global North suddenly realised that, when a crisis arrives, the private sector can do little for the population (Saad-Filho, 2020), or that, without the safe network provided by the common effort, evils like pandemics and economic crisis threaten not only the government but society as a whole.

Sadly, neoliberalism orthodoxy's collapse has not arrived out of the strength of the revolutionary arguments or acts. Despite the hope placed on it by politicians and bureaucrats, neoliberalism has revealed to be counterproductive solving real world problems, inasmuch as market has shown its structural inefficiencies, for instance, in health (Navarro, 2020). Global North capitalist failure has led to an expensive collectivisation of economic losses, without having in return the same kind of

policies with regard to incomes. Questions that just a few years ago were considered taboo in most respectable circles are now openly discussed. Why do taxpayers have to take care of private-sector losses in bad times and are not seeing a penny when money flows to the hands of capitalists? Wouldn't it be more effective and cheaper for the public sector just to take the lead in strategic sectors such as digital infrastructures? Similar discussions around strategic nationalisation soon fallen into oblivion. For instance, just a few years after the massive expenditure rescuing bankrupted private banks, States such as Spain authorised the acquisition of its share of the banks for a fraction of the original price (Romero, 2012). However, the new cycle of crisis triggered by the Covid-19 pandemic has opened a new window of opportunity for rebooting the system. The EU and the US, among others, have revealed themselves as capable of mobilising an incredible amount of funds and resources in order to reconstruct their damaged economies. This is a massive public expenditure only comparable to the post-World War II recovery plans. While it is true that the Covid-19 era is not comparable to the 1940s war time's State planned economy, the economic recovery plans drawn by the EU or the EU show signs that the public is back. For instance, the EU recovery plan worth €750 billion (Von der Leyen, 2020) has the explicit name of Next Generation EU. The recovery plan, fully integrated in the wider EU's Green/Digital New Deal (EC, 2020b) strategies, is aimed to re-organise and align private and public factors of production towards a green and digital European economic reconstruction:

> The plan for European recovery will need massive public and private investment at European level to set the Union firmly on the path to a sustainable and resilient recovery, creating jobs and repairing the immediate damage caused by the COVID-19 pandemic whilst supporting the Union's green and digital priorities. The MFF, reinforced by NGEU, will be the main European tool (European Council, 2020).

The ambitious Next Generation Europe plan comes with very specific anti-austerity recommendations to different beneficiary countries. That is, the plan flagged where the money should go. For instance, the European Council recommendation for Spain, one of the countries more severely affected by the pandemic and the subsequent economic crisis, highlighted the structural deficiencies

of the Spanish economy, the weakness of its productive sector and the alarming increase of poverty and unemployment rates. In other words, the European Union kindly told the Spanish government to plan green and digital reindustrialisation as the only possible way to reduce poverty and inequality (EC, 2020a). The EU's recommendation for Spain responds to its wider strategy. This does not mean that the EU is advocating socialist planning. Despite what many conservatives say about European politics, the EU is not governed by communists, it is rather a neoliberal technocracy conscious of the market inefficiencies and a touch of socioliberal humanism (Colatrella, 2019). Neither the EU's digital nor green strategies are good places to look for alternatives to capitalism. However, the EU's broader strategy does show a change in the trend in mainstream political economy. Very few now think that capitalism, as it is, is workable or stable. And even few consider that structural reforms are not on the top of the list. The public has been entrusted again to reconstruct (or revive) and organise the damaged, inefficient and fragile market economy. And even vilified public agencies and institutions such as those belonging to the health sector, which have suffered the attacks of neoliberals for decades, have received renewed attention and public praise. As the recent events have proved, only a robust public health system is able to warranty the safety of the population.

We are living rough times, interesting times, times of transition and transformation. The window of opportunity is open for those seeking for structural and systemic transformations. An entire generation, the millennials, has lived its adulthood in a perpetual crisis. For Generation Z crisis is the name of normality since they haven't tasted any other thing. Perhaps, that's why socialism has become at least as popular as capitalism among them (Solis, 2020). At this stage, it is not crazy to, for example, propose the nationalisation of the digital infrastructures as the UK Labour did in 2019, or the break-up of Facebook, as many voices, including some of its founders, demand (Hughes, 2019).

This chapter aims to move from criticism to propositions, and hence it will be looking at alternatives to digital capitalism. In the early pages of this thesis I asked a question: Whose digital present? Sadly,

as I proved during this journey, the digital present is dominated by heartless corporations. In this chapter, I will be dealing with a, hopefully, more inspiring message. Whose digital future? In section two, I challenge the assumption that economic planning is dead, and, proving the opposite, I examine how the three hegemonic actors in the digital politics arena are actively planning their economies. Section three analyses the roots and main works of contemporary communist economic planning, a rising body of literature that questions the relation between technology, production, capitalism and social coordination. Finally, in section four, I examine practical examples of digital socialist ideas, paying special attention to the defeated—but nevertheless interesting—UK Labour plan for the digital economy.

2. The Return of Economic Planning?

For many, the idea of economic planning is inevitably associated with the 'evil' of the five-year Soviet plans or the chronic crisis of Cuban socialism. Until very recently, the undisputable neoliberal victory expelled sober discussions on economic planning in most Western academic and political circles. There, ideas outside the market box where considered, at best, unrealistic—if not totalitarian. As Morozov (2019) and Phillips and Rozworski (2019) have explained, the neoliberal main argument against economic planning targeted information and knowledge. As Hayek pointed out, central planning infeasibility lies in the impossibility of gathering, centralising and interpreting all the information generated by and required for the productive forces. Hence, a central authority organising the whole economy would not be only undesirable as totalitarian but also technically impossible:

> This is, perhaps, also the point where I should briefly mention the fact that the sort of knowledge with which I have been concerned is knowledge of the kind which by its nature cannot enter into statistics and therefore cannot be conveyed to any central authority in statistical form. The statistics which such a central authority would have to use would have to be arrived at precisely by abstracting from minor differences

> between the things, by lumping together, as resources of one kind, items which differ as regards location, quality, and other particulars, in a way which may be very significant for the specific decision. It follows from this that central planning based on statistical information by its nature cannot take direct account of these circumstances of time and place and that the central planner will have to find some way or other in which the decisions depending on them can be left to the 'man on the spot' (Hayek, 1945, p. 524).

In the same paper, Hayek, defended that the quintessence of information was already there. The free market, an open space where unlimited actors could trade goods of any kind, produces an accurate real time signal, the price system, for those needing to allocate, acquire or manage resources. No need of central authority gathering information and generating constant outputs on whether that industry or another should reorient its production according to variations in, let's say, the production of petroleum in any given date. The price system works in an 'economy of knowledge' where information, although not perfect, flows freely and fast between the actors:

> It is more than a metaphor to describe the price system as a kind of machinery for registering change, or a system of telecommunications which enables individual producers to watch merely the movement of a few pointers, as an engineer might watch the hands of a few dials, in order to adjust their activities to changes of which they may never know more than is reflected in the price movement (Hayek, 1945, p. 528).

However, despite Hayek's opinion, economic planning—that is, the organised allocation of resources within a given economy—has been present both at a micro and a macroeconomic level, in market and 'socialist' economies alike. As Phillips and Rozworski (2019) have demonstrated, economic planning has not been only useful but indispensable in big corporation's success, especially when those corporations rely on critical and wide infrastructures, national and international regulatory frameworks and, above all, a business built on massive economies of scale (Phillips & Rozworski, 2019; Morozov, 2019); all those elements present in the digital economy. Thus, despite the entrepreneurial spontaneist rhetoric, economic planning was never abandoned neither by politicians nor by corporations. Moreover, the technological shift in fields such as ML, networks, data

mining, processing and storing is leading to an even more planned scenario. Hayek's main argument against centralised economic planning has been overturned not by socialist and revolutionaries, but by a new wave of big data capitalists. As we have seen in previous chapters, they have established a data extractivist apparatus able to gather an unprecedented amount of information, and, what is more important, they have enough computational power to process it and to generate fairly accurate predictions.

Amazon is perhaps one of the most well-known examples of how the new science of big data is mashing together central planning and capitalism, altering the way we think of logistics, production or exploitation. But the retail business is not the only one altered by this new science. For instance, we only have to think of the predictive tools police departments around the world are using to 'prevent' future crimes. It would be oversimplifying to see *Big Data Policing* (Ferguson, 2019) just as the deployment of new surveillance technologies. The way Palantir crushes data from every possible imaginable source, including of course public criminal stats, to generate reports with hotspots of crime or potential offenders may resemble the classical black box (Brayne, 2020). But the key to understand predictive policing is not to look at the questionable oracles sold by shady companies. What we should be looking instead is at the more material neoliberal governance running behind the scenes. After all, underneath all the surveillance wizardry lies the last offensive to cut funding on public services and to externalise what remains to private actors. What companies like Palantir offer is a neoliberal automatised resource allocator for police departments, a central planning tool for repression. All the major actors in the digital political arena have been developing their own particular versions of new economic planning. In today's digital economy landscape, thee capitalist models of planning standout above the others: the European, the Silicon Valley and the Chinese.

In the first place we have the EU's social market economy (EC, 2020c). In 2010, the EU launched an ambitious 10-year plan with the intention of taking over the leadership of the rising digital economy.

The funding document of EU's digital politics was named *A Digital Agenda for Europe* (EC, 2010). Its introduction summarises its intentions: 'The overall aim of the Digital Agenda is to deliver sustainable economic and social benefits from a digital single market based on fast and ultra-fast internet and interoperable applications' (EC, 2010, p. 1). The document raised two main objectives. First, building a digital single market for the union. Secondly, designing the legal infrastructure required to govern it. However, despite the importance of the *Digital Agenda for Europe*, it was another document, the *Digital Single Market Strategy for Europe*, the one grounding EU's digital political economy (EC 2015; Schroff & Street, 2018). There, the EC described the European single digital market as the place where 'free movement of goods, persons, services, capital and data is guaranteed—and where citizens and businesses can seamlessly and fairly access online goods and services, whatever their nationality, and wherever they live.' (EC, 2019). Despite its emphasis on the liberal capitalist legal mantras of 'free movement of goods, persons, services, capital and data' (EC), it proposes what is in fact a controlled, state regulated market, part of a broader economy to be built with the impulse of public policies:

> Key policies will mainly fall in three groups: active labour market policies and policies ensuring that workers enjoy an adequate level of social protection comparable to the one they now enjoy; fiscal policies, to ensure that redistribution reduces potential inequality gaps that may result from labour market polarisation; education and training policies to ensure that the workforce has adequate skills to thrive in the digital economy (EC, 2017, p. 3).

The 2020-2025 EU plan is even more interventionist. Conscious of what is at stake, the EU Commission led by Ursula von der Leyen stated that:

> European technological sovereignty starts from ensuring the integrity and resilience of our data infrastructure, networks and communications. It requires creating the right conditions for Europe to develop and deploy its own key capacities, thereby reducing our dependency on other parts of the globe for the most crucial technologies. Europe's ability to define its own rules and values in the digital age will be reinforced

> by such capacities. European technological sovereignty is not defined against anyone else, but by focusing on the needs of Europeans and of the European social model (EC, 2020b).

In order to accomplish it, the EU is building a legal and political architecture which is a fact planning-by-regulation way of economic governance. The new strategy, divided in four main areas—'Technology that works for people', 'A fair and competitive digital economy', 'An open, democratic and sustainable society' and 'Europe as global digital player'—will frame further economic, politic, technological and social developments in accordance with 'European values'. Public institutions play a major role in this schema. Funded in part with the Next Generation Europe recovery plan mentioned earlier, bureaucrats will be deciding not only where to expend the budget but also how to prioritise the public investment in order to meet the goals. However, this model of economic planning has proved to be insufficient to meet the EU's objectives. On the one hand, the EU has not been able yet to secure a competitive environment free from the domination of powerful foreign actors. On the other hand, despite its extensive laws and recommendations, the EU has failed to reach the desired technological sovereignty, undermining its aspirations on influencing the way technologies are designed and implemented and, with it, how the digital economy is being built. Finally, as International Amnesty has pointed out (2020), the regulatory framework designed to protect the citizens' rights has not stopped EU-based companies from exporting surveillance technologies used to perpetrate severe violations of human rights overseas.

The second model of economic planning is having more success. We have had the chance to see many aspects of it in previous chapters. Designed and directed from Silicon Valley, the model is being orchestrated by corporate actors, who, nevertheless, have relied on public infrastructures, grants and public subsidies (Mazzucato, 2015). Despite the Silicon Valley Promethean rhetoric and Design Thinking charlatanism, they key for success of companies such as Amazon or Google lies in their comprehensive corporate economic planning. Contrary to other business models nurtured in the neoliberal era, digital capitalism does not prioritise immediate earnings. Instead, the patient capital

behind it has helped a handful of digital capitalists to seize a monopolistic dominance of specific parcels of the digital economy (Rahman & Thelen, 2019). The reason for that has to do with the very nature of the digital economy and its data dependence business model. Corporate power is defined in this era by the amount of data controlled by corporations and by the users producing it (Lynskey, 2019). At the current stage of the race for dominance, digital capitalists are more worried about increasing or securing their market share than they are about obtaining immediate returns. The development of game changing technologies depends on the control of data, and so does the competitiveness in a business where the networking effects of a product are more important than the product itself.

In order to achieve this dominant position over markets, users and data, digital corporations have opted for an economic planning model heavily structured around digital technologies. Think about Amazon, the formerly on-line bookstore that has ended being the everything-shop for much of the Global North markets, not to mention its most profitable business, its cloud services, where, for instance, Netflix 'floats'. Making use of massive and decentralised data extractive technologies in every purchase, along with extensive surveillance technologies over its workers, Amazon has been able to build a complex, fragmented but nonetheless effective planning machine (Phillips & Rozworski, 2019; Sadowski, 2020). First, with the exploitation of its users' data, it has a clear picture of what buyers desire to the extent that it can actually foresee future purchases. Relying on real-time tracking tech, Amazon has optimised its logistic infrastructure, defeating with it one of the worst retail business nightmares: logistics inefficiencies. Finally, the extent to which Amazon has implemented surveillance technologies in its workplaces has resulted in a terrible but also effective and functional machine (Delfanti, 2019). Algorithms are now run on humans, who, plugged into the system, are basically remote-controlled according to market demand, the production and the distribution processes. Together, these three elements conform a new kind of centralised but distributed cybernetic planning apparatus. In words of Phillips & Rozworski:

> In simplest terms, Amazon is a giant planned machine for distributing goods. It is a mechanism for forecasting, managing and meeting demand for an incredibly wide array of things we need and want. It is a collection of thousands of interlocking optimization systems that work together to carry out the deceptively simple task of moving objects from producers to consumers. Rather than the anarchy of the market, once we enter the Amazon, we are entering a sophisticated planning device—one that offers not only clues for how we could manage demand and supply of consumer goods in a society not built on profit, but also warnings to would-be planners for the public good (Phillips and Rozworski, 2019, p. 92).

This mode of economic planning has fulfilled capitalists' expectations, grounding today's tech monopolistic landscape. However, this has come at a terrible cost for small businesses, workers (Kollewe, 2020) and the rights of citizens around the world. As the advocacy group Colour for Change stated:

> [T]he promise of equality and opportunity has been crushed by the weight of consolidated communications and commerce power and corporate gatekeepers tipping the scale away from progress and circumventing the civil rights laws that have existed for generations. Further, the disappearance of choice and competition have destroyed the entrepreneurial spirit of innovation and have created de facto segregated access to opportunities for socio-economic mobility, privacy, access to information, and community autonomy. These corporations wield increasing power over our society and play a clear role in driving the racial wealth gap all while benefiting from Black labor and talent and erasing Black-owned businesses. The centralized power over the flow of information and access to data privacy, as well as the trading of goods and services that these platforms have, has triggered economic, health, and social disparities on par with what we saw during the Gilded Age before the U.S. plunged into The Great Depression (Colour for Change, 2019, p. 2).

For its part, China has been developing its own heavily centralised and influential path to digital capitalism. One of the main features of this model is the particular and intimate relationship between State and capital, which has been a predominant aspect in its five-year plans since Den Xiaoping's takeover of the formerly Maoist regime in 1978. Since at least the twelfth five-year plan (2011-2015), the digital economy has been a priority for the Chinese government, who, ever since, has been

steadfastly *Networking China* (Hong, 2017) and consequently investing in digital infrastructures, for instance, expanding exponentially its broadband. In its thirteenth five-year plan, China showed its determination to turn the country from the factory of the world to its creative and innovative tech powerhouse. In regard to this, it is worth mentioning two of its key strategic policy areas. First, 'Made in China 2025', which encouraged the development of Chinese high tech value manufacturing power (Congressional Research Service, 2020), and secondly, the 'Everyone is an entrepreneur, creativity of the masses', encouraging the development of a Chinese owned version of a generalised entrepreneurial mind-set (Sharma & Meyer, 2019). Both elements, along with the particular characteristics of the Chinese market, converged in the thick imbrication of the State and corporate actors, resulting in the rise of big tech behemoths comparable in power and influence to its counterparts in Silicon Valley.

Contrary to what Western media and politicians have said (e.g., Trump, 2020), China does not exert a direct control over corporations like Ali Baba or Tencent. Instead, we should rather be speaking about an alignment of interest between capital and the State. The Chinese digital interventionist mode of digital capitalism is not limited to a planning by regulation à la European, neither looks like the Silicon Valley private control of the upstream tech supply chain. Conversely, China has been able to establish a public/private model of governance for the digital economy that has proved to be successful enough to build from scratch a digital infrastructure envied by other powers. However, this rapid development has come at the expense of workers and citizens, who now suffer a high-tech surveillance capitalist regime (Bieler & Lee, 2017).

While it is true that surveillance and data extractivist technologies are part of the everyday life under the silicon doctrine, the Chinese model has not found, unlike the former, significant legal or political impediments for the imposition of its algorithmic governmental regime. Let's just mention an illustrative example of the widespread use of a controversial technology. Facial recognition, a technology based on the mass gathering and processing of biometric data, has become worldwide

ubiquitous, used alike by corporate or State actors in areas ranging from commerce to education and security. This technology has been contested in multiple jurisdictions (FRA, 2019). For instance, in the US, after Facebook's unauthorised gathering of biometric data from its users (Facebook v. Patel, 2019), or in the European Union, where it has been implemented on asylum seekers. While the unsettling developments of that particular technology have been, at least, questioned—if not stopped— in the Global North, the same cannot be said about China, where this technology has been widely used to control, surveil and punish, among others, an entire population, the Uighur, a majority Muslim population living in the Western regions of China (Leibold, 2020).

Economic planning is not only well alive but it has become the fundamental tool for the management and development of the digital economy. All the major actors of today's digital political scene, China, Europe and Silicon Valley, are making extensive use of it. However, as we have seen, the three models also show serious deficits with regard to efficiency (EU), democratic control and respect for basic human rights (US and China) and economic and social justice (all three models). Henceforth, if what we aim is a fairer, more efficient and non-exploitative digital economy, we should look into other places. But where to?

The anti-planning rhetoric that followed the fall of the Soviet Union covered nearly every concept relating to socialist planning or collective property of the means of production with a veil of discredit. However, the nearly chronic cycles of economic unease, followed by the astronomic rise of the power of digital corporations, have changed the state of affairs. Even the most recalcitrant advocates of limited State intervention have sent an SOS to the interventionist State (Inman, 2020). The public is back again in the first position of the political agenda. Now, the question is not if nation states should intervene but to what extent the state shall reorganise the chaos. Although it's not extraordinarily voluminous, there is a growing intellectual production hypothesising new ways of dealing with digital capitalism and organising the digital economy. Several scholars in the fields of communication,

philosophy, politics and management studies have been thinking about the idea of digital socialism. As with any political theory, there are as many digital socialisms as there are authors. Despite the contradictions, or even antagonisms, between these growing bodies of texts, they all share a commitment to the empowerment of people in the digital economy. The following section will be devoted to this rising body of critical theory. Hence, in the next pages I will analyse the roots, works and political implications of the new socialist economic planning debate.

3. Thinking in Communist Planning Today

3.1. Grounds

To understand the contemporary discussion on economic planning we have to go a hundred years back in time. In the 1920s, intellectuals from very different positions engaged in vibrant discussions on economic planning. They took it seriously. The Soviet Union was taking its first steps experimenting with radical new forms of social coordination (Mandarini & Toscano, 2020). The once revered market ideology was severely disputed not just theoretically but in the practice. Well respected intellectuals such as Ludwig von Mises and Friedrich August von Hayek (later F.A. Hayek) tried to demonstrate how their socialist counterparts' defence of central planning was epistemically, ethically and politically wrong (Phillips & Rozworski, 2019). They were trying to reassert and scientifically prove that market was the most advanced, democratic and efficient way of allocating resources. No clear winner emerged out of the debates (Whyte, 2020). The Cold War entrenched the positions in two opposite sides—market vs. central planning, rendering invisible more democratic ways of non-market social coordination (Morozov, 2019). The crisis of the1970s became a turning point moment for the Western parliamentary left, who expelled Marxism from its core postulates and embraced market ideology as the only possible system (Callinicos, 2001). The fall of the Soviet Union

in 1989 was considered an intellectual defeat for the left in the West, who rapidly fell into the false dream of a third-way, a barely hidden strand of neoliberalism. Nevertheless, some political parties in the West, a handful of intellectuals and the heroic resistance of the Cuban Revolution and the Zapatistas kept alive the dream of an alternative to the hegemonic presence of neoliberalism until the first-decade of the twenty-first century (Esteva, 1999). However, this does not really explain why we are discussing economic planning today in the way we are.

In the first decade of the twenty-first century, two major technological and political events took place at the same time; both embodied the dreams of a new generation of socialists and communists, eager for new ways of organising and thinking, sensitive about the question of diversity and plurality inasmuch as about the material conditions of oppression. First, the rise of the digital era and the information society standing on a vast, apparently decentralised network called the internet. We have had the chance to analyse the nuts and bolts of the rise of the digital economy in the previous chapters, but it is worth remembering a few things. In a very short time the number of users grew exponentially, although not symmetrically, around the world. That space was not yet fully colonised by capitalism. Promising collaborative technologies were on the rise, allowing activist users and intellectuals to dream about a decommodified world with no single authority, neither the state nor the market, surveilling it (Kellner, 1999). The technological shift propelled the imagination of an entire generation of activists and hacktivists, who firmly believed that the new technopolitics would generate non-hierarchical ways of organising. For instance, the social movements that erupted between 2011 and 2014, among others the US Occupy movement, the Spanish Indignados and the Arab Spring in Egypt or Libya, made extensive use of the new digital infrastructures at their disposition. They not only repurposed social networks such as Twitter or Facebook to organise and coordinate powerful movements (Castells, 2015). They settled the grounds for new public spheres and political agora, designing digital tools where citizens could propose, discuss and vote in a fraction of the time and the cost of analogous electoral processes, enabling with it new ways of imagining

what a direct democracy may look like. Even if today we don't share the same hopes and beliefs for technological solutions to social problems, the seeds of the movement are well alive in the form of conceptual demands such as data commons, or very practical and specific struggles such as those related to the demands for public digital infrastructures.

Politically, the arrival of the new century brought with it new revolutionary hopes for Latin America. Suddenly, social movements in the whole region forced their neoliberal governments to resign. In country after country, a new wave of socialist leaders switched from being union leaders or military rebels to become elected authorities. Unlike their Global North counterparts, Latin American leaders such as Hugo Chavez, Nestor Kirchner, Evo Morales and Lula da Silva tried to build alternatives to the neoliberal governance in place, giving new meanings to diversity and pluralism, popular education and economic justice (Sader, 2011; Linera, 2011). In an extraordinary little time, major neoliberal policies were revoked. The neoliberal regulatory framework was overturned by progressive constitutions where a wide new wave of social and economic rights was explicitly recognised. But the socialist revolution was not limited to symbolic aspects. Public services and assets privatised in the 1990s by neoliberal governments were renationalised. In this regard, as George Ciccariello has pointed out, countries such as Venezuela tried to implement a new political economy based on the communities and the co-management of industries between workers and the State (Ciccariello, 2013; 2016; 2020). Brazil was doing its part regarding the countryside through a redistribution of land inspired by the MST (Landless Workers' Movement). Bolivia, which was showing incredible economic growth until the 2020 neoliberal coup d'état, developed a completely new way of understanding the relationship between the political and economic commons, giving at the same time new meanings to the notion of legal pluralism (Linera, 2011). Along with the political revolution an epistemic revolt took place. The Eurocentric canon of critical theorists based on mostly white male authors from the Global North was questioned and revisited at the light of the historical particularities of Latin America, indigenous thought and practices, and a revalorisation of neglected female intellectuals (in this regard, it is worth taking a look at the many books and essays published by the

former vice-presidential office of Bolivia). This epistemic revolution took the name of the decolonial movement and served to establish a coherent and powerful critic to the theoretical grounds of contemporary colonial capitalism (Escobar, 2007; Maldonado-Torres, 2007).

With these processes running behind scenes, a new left emerged in the Global North out of the massive protests in the early 2010s. Heavily influenced by the successful Latin American socialism of the twenty-first century, political parties such as Syriza, Podemos and radicalised factions of the Labour party in the UK started questioning not only the many and palpable evils of neoliberalism but also the poor response of the traditional left to it (Iglesias, 2015). In settler colonial States a new generation of indigenous, black and brown activists brought to the front pages of the mainstream media and the political agenda the structure of racial and class inequality imposed to them (Taylor, 2016; Coulthard, 2013). As in 2020, most of the Latin American revolutionary governments have been defeated by a coup d'état. The now institutionalised Global North radical left has also lost some of its energy, but the desire for a new order, planted in a whole generation, has been nurtured by the evidence that the neoliberal system is unable to manage the catastrophe of our time. It was in this political environment of sudden technological shift, new political references in Latin America and revitalised and radicalised discussions within the Global North where the new socialist calculation debate emerged.

Now I will briefly examine some recent contributions looking at different forms of critical economic planning. They share a socialist common ground, which, although critical with the role played by the Soviet Union, seriously considers economic planning as an alternative to the societal despair caused by 'market anarchy' and their neoliberal and digital capitalist lords. Theoretically, these authors, although extremely diverse, represent a return to Marxian roots. They've done so in a critical way, taking into account some of the limitations of orthodox Marxism, for instance, with regard to gender, race and the question of power and democracy. This return to the roots has helped to build a new

critical way of engaging with the role of technology and industrialisation in society the question of work, the relation of democracy and economic planning and the relevant matter of what means to be politically organised today.

3.2. Counterplanning Today

It is worth starting this brief analysis on recent critical economic planning thought with Nick Srnicek and Alex Williams' *Inventing the Future: Postcapitalism and a World Without Work* (2015). The authors were intuitive enough to read the political and technological momentum and to condense it into a manifesto. The book is not a piece of high intellectualism but, instead, a call to action for those political activists who, in their opinion, are trapped in 'folk politics'. For these authors, the radical left was stuck in a political mindset that, while oversimplifying contemporary problematic, idealised local politics, spontaneism and horizontalism:

> Protests, marches, occupations, sit-ins and blockades all have their place: none of these tactics in themselves are fundamentally folk-political. But when they are marshalled by a strategic vision that sees temporary and small-scale changes as the horizon of success, or when they are extrapolated beyond the particular conditions that made them effective, they are inevitably going to be bound up within folk-political thinking (Srnicek & Williams, 2015, p. 52).

When they wrote those lines, they had in mind the Indignados and the Occupy movement. The authors were as captivated by the energy of both phenomenon as they were concerned by how ephemeral and inefficient it was to translate the energy of the masses into any palpable political victory. In the authors' opinion, the left needed to think bigger in a much more ambitious way. The authors found the theoretical recipe to cure Folk-politics in Laclau's notion of left populism. Simplifying, Laclau's left populism means disputing the hegemony of neoliberalism over the definition of what is realistic, achievable common sense (Laclau, 2005). The left, limited in its analysis and tactics, was unable to

imagine alternatives to the neoliberal regime. Hence, the mission for the left was to collectively recover the future, that is, the ability to imagine, plan and achieve a postcapitalist society (Mason, 2016). For Srnicek and Williams the question is as clear as difficult. Capitalism has organised our societies around work and exploitation; therefore, in order to build socialism, we shall be able to imagine a post-scarcity society where most tasks are performed and automatised, and wealth is fairly distributed. To achieve that, the left must be able to:

> [D]evelop a sociotechnical hegemony: both in the sphere of ideas and ideology, and in the sphere of material infrastructures. The objective of such a strategy, in a very broad sense, is to navigate the present technical, economic, social, political and productive hegemony towards a new point of equilibrium beyond the imposition of wage labour (Srnicek & Williams, 2015, p. 130).

But, as the authors pointed out, reaching this stage requires finding new points of leverage—that is, having the capacity to disrupt the capitalist system, not only to defeat the monster but to establish a new and emancipatory socio-technical order. Despite Srnicek and Williams' techno-optimism, the final chapters of the book, the ones looking at solutions, are focused on the future of emancipatory political organisation and not on the nuts and bolts of the hypothetical structure of the communism to come. While not explicitly addressed, the book has all the ingredients of what I named as the new economic planning debate: How to build new political organisations, the question of scale, the necessary discussion of the role of technology on emancipatory projects, and the unbearable need to democratise global productive and logistical structures. The book successfully offered an answer for the big political question: How do we build political organisations and a new common sense that allow us to build a socialist future? However, it left unresolved an important part of the revolutionary equation: how can we build from scratch a global and counter-hegemonic logistic apparatus?

Leigh Phillips and Michal Rozworski accepted the challenge and tried to give an answer to this question in a quite interesting way. In their provocative *People's Republic of Walmart* (2019), they

reopened the question of socialist economic planning not by hypothesising a new economic structure, but by analysing some of the biggest capitalist behemoths of our days: Walmart and Amazon. For them, activists should consider the relevant socialist calculation debates at the light of contemporary technical, logistical and even managerial developments. In their opinion, corporations such as Walmart and Amazon are planning and allocating resources and goods at a scale only dreamed by the most ardent advocates of the Soviet Union central planning, without falling in the bureaucratisation and inefficiencies derived from the Gosplan (Soviet State Planning Committee). In short, capitalism has demonstrated itself the advantages of planning and cooperating. The problem is that big corporations are only applying economic planning within their enormous economies. Hence, for them the question is not as much how to start planning but, in fact, how to plan 'The Good Anthropocene'. What do they mean by that? Phillips and Rozworski's conception on economic planning is heavily influenced by the Chilean socialist cybernetic experiment. Cybersyn (the name of the project) was President Allende's (1970/1973) attempt of building a cybernetic system for a decentralised economic planning, linking factories, mines, bureaucrats and workers (Medina, 2011). That is, a sociotechnical infrastructure intended to regulate and adjust the needs, skills and productive capacities of the country in order to satisfy the common good and not a bunch of capitalist shareholders. Phillips and Rozworski consider that good planning is necessary not only to put an end to the blatant structure of economic, gender and racial inequality but to survive as a species. After all, the very idea of cybernetics is to study and build systems of control and regulation for entire ecosystems:

> Counteracting climate change and planning the economy are projects of comparable ambition: if we can manage the earth system, with its all its variables and myriad processes, we can also manage a global economy. Once the price signal is eliminated, we will have to consciously perform the accounting that, under the market, is implicitly contained in prices. Planning will have to account for the ecosystem services implicitly included in prices—as well as those that the market ignores. Therefore, any democratic planning of the human economy is at the same time a democratic planning of the earth system (Phillips & Rozworski, 2019, p. 241).

In a similar leftist cybernetic vein, we can find Evgeny Morozov's 'Digital Socialism' (2019). While sharing much of the theoretical grounds with Phillips and Rozworski, Morozov's main concern has to do with finding alternatives—that is, socialist ways for organising the allocation of goods, different to the price-based market or to the bureaucratised central planning. Acknowledging Hayek, Morozov highlights the relevant role that data and information have in the way social coordination takes place, for instance, in markets. But, opposed to the Hayekian understanding of a cybernetic system governed by price (the signal of millions of inputs and outputs), Morozov proposes a socialist feedback infrastructure. That is, a sociotechnical system in where a decentralised network will be able to gather and manage the information of a given system, matching capacities and needs:

> One could imagine the use of digital feedback infrastructure to match 'problem-finders', who would express their needs and problems, and react to those identified by others—either explicitly, by voicing them or writing them up, or 'automatically', via machine learning, or—with 'problem-solvers', equipped with cheap but powerful technologies and the skills to operate them. Once the two groups have been 'matched' by the feedback infrastructure, the activity of the 'problem-solvers' can help to render the implicit needs of 'problem-finders' tangible and explicit, adding to the pool of solutions which can then be drawn upon by other 'problem-finders'. Assuming this takes place outside the commercial realm, there would be no barriers, such as patents, to impede the sharing of knowledge (Morozov, 2019, p. 56).

Morozov claims for the socialisation of the 'means of feedback production' (Morozov, 2019, p.65.) now in hands of digital capitalism corporations such as Amazon. The socialisation of the means of digital production will allow the masses to establish new non-market solutions for allocating goods, non-competitive strategies to fuel scientific progress, and automatised and decentralised ways of economic planning. Both, 'Digital Socialism' and *People's Republic of Walmart,* share the same interest in repurposing the current exploitative sociotechnical apparatus for the socialist revolution, however, the authors of both works have not said much about one relevant question: Is using master's tools a direct path to alienation? Brett Neilson has delved inside this treacherous question naming this process as the 'Reverse of Engineering' (Neilson, 2020). Neilson flags how problematic it could be

to just uncritically take over capitalist technologies without acknowledging its exploitative nature. For him, 'the reverse of engineering posits neither the liberation of labour in a planned economy nor an ontological horizon of communization separated from challenges of organization. Rather, it raises the challenge of warding off capital's tendency to capture and incorporate its multiple outsides' (Neilson, 2020, p. 87).

In the same issue, Jasper Bernes stresses his concern for what he considers one of the most problematic issues of the cybernetic-based economic planning technologies: control. As I explained in Chapter 5, cybernetics means essentially control over the flow of communications between nodes of a system. In Bernes' words 'one cannot separate planning from the question of command, control, and decision' (Bernes, 2020, p. 59). For him, the question of emancipation and liberation struggles has not only to do with fairer distribution of wealth but with an equitable distribution of the control over the means of production and over life itself. Bernes considers that previous literature on economic planning has failed to empower the working class; moreover, for him 'the biggest weakness of the planning literature is that it assumes labour is, more or less, a resource like any other, as receptive to the determinations of the plan as a pile of pig-iron is to the embrace of a backhoe.' (Bernes, 2020, p. 59). The cybernetic dream of harmonious total control of entire ecosystems clashes with the very notion of dialectic and class struggle. Hence, for him:

> [T]he only alternative to the anarchy of capitalist production is a planning that embraces this kind of anarchy, a planarchy if you will, an organization of human activity that accepts the fundamentally self-directed, spontaneous, and creative character of human action. Under this truly communist planning, the link between calculation and control would be definitively broken (Bernes, 2020, p. 70).

Bernes' paper and several others sketched above were published in a special issue of the *South Atlantic Quarterly* titled 'The Return of Economic Planning'. The issue was edited by Marxist sociologist Campbell Jones, who, in the introduction, made a statement that fully connects with the

spirit of Srnicek and Williams's *Inventing the Future*. I wish to end this section with the following words, as they express both the complexity of contemporary socialist calculation debates and its unashamed political compromise:

> Because we have our own distinct understanding of economic planning, there is a kernel of truth in the fact that, according to the logic of capitalist economics, our projects are strictly speaking impossible. Of course, without knowing this and without that sense that we are facing up to the impossible, we have no politics in the proper sense of the word. This is why, when we speak with confidence about economic planning, we are also making clear the stakes and the ambition of our politics (Jones, 2020, p. 8).

Summarising, there is a rich body of literature dealing with the question of critical economic planning. As we have just seen, the authors do not intend to scholarly discuss about the past, but rather they are trying to dispute the future. Scholar debates are well alive, and the rhythm of publications is vibrant. But are these questions permeating the social and political life? Or, as often happens, those radical ideas are trapped in the academic bubble. Now I shall analyse the version of digital socialism inspired by scholars in the orbit of Momentum, the socialist grass-root organization affiliated with Corbyn-wing of the UK Labour Party, who have inspired what can be considered the first serious proposal for a digital socialist project.

4. The Treacherous Path Towards Digital Socialism: The Defeated Labour Plan in Context

The UK Labour Party, under the leadership of Jeremy Corbyn and the pressure of Momentum, issued a series of documents in where two sets of fundamental measures aiming to fix the gigantic tech power were outlined: The nationalisation of basic digital infrastructure, and the institution of cooperative structures of ownership and management for digital corporations. In the 2019 *Labour Manifesto* it is indicated that:

> We will establish British Broadband, with two arms: British Digital Infrastructure (BDI) and the British Broadband Service (BBS). BDI will roll out the remaining 90–92% of the full-fibre network, and acquire necessary access rights to existing assets. BBS will coordinate the delivery of free broadband in tranches as the full-fibre network is rolled out, beginning with the communities worst served by existing broadband networks. Taxation of multinationals, including tech giants, will pay for the operating costs of the public full-fibre network. The plan will boost jobs, tackle regional inequality and improve quality of life as part of a mission to connect the country (UK Labour, 2019, p. 52).

What Labour was proposing is a public entity entrusted with the monopolistic management of the physical and digital infrastructures of the internet in the UK. The main difference between these thinkers and their European liberalism is that they do not only struggle for a stronger regulation but also for the nationalisation of what socialists consider as public utilities. In the opinion of the Labour Party, this would guarantee people's access to the fundamental resources of the digital economy, ending the gatekeeping power of large corporations alongside their control over data. These digital socialists imagine the nationalisation of digital infrastructure leading to an alternative information economy not beholden to the neoliberal capitalist dogma. Not only would the state control of these critical assets serve to guarantee the democratisation of digital media but also to enable a fairer distribution of the wealth produced in the digital economy by funnelling profits to citizens through the state in the form of mechanisms like a Universal Basic Income or Universal Basic Services. Ultimately, this digital socialism would strengthen the grounds of a new and broader democratic socialism in which the people and its institutions are in control of the means of production. The Labour Party and their co-thinkers also proposed measures to institute an environment in which co-operative, worker owned corporations are the norm in the digital space. To simplify, this means not only nationalising but socialising and democratising the management of much of the digital infrastructure (Hanna et al., 2020). This 'platform cooperativism' has recently been receiving a great deal of attention as an alternative to the hyper-exploitative business model on which companies such as Uber and Deliveroo rely. Alongside proposals like these to reorganise the digital economy from the top down, bottom-up challenges to platform-induced precarity are also emerging in the form of

union organisations and worker activism. The merger of these currents can be seen in the US, where the material grounds for platform cooperativism are currently taking shape, with nearly one third of workers enmeshed in the gig economy.

One of the epicentres of this emerging movement could be located in the Institute for the Cooperative Digital Economy, linked to the New University. There, authors such as Trebor Scholz (2017, 2012) are writing about the possibility of transforming criminal corporations like Uber into large cooperatives of workers. Similarly, other authors such as Keith Taylor (2019) or Nathan Schneider (2018) have been enquiring into the role of communities with regard to energy management companies and start-ups. Although reflecting these tendencies, the policy of the Labour Party gives greater relevance to the State than their US counterparts in keeping with the British socialist tradition and experiments that are being carried out in other European countries. Thus, the Labour document proposes three complementary models of alternative ownership: a) Cooperatives; b) Municipal and locally-led ownership; and c) National ownership.

The first model, cooperative ownership, shares many features with the proposed by Scholz and is gaining prominence in the US, although it reserves a space for state participation. Instead of looking to the United States, we can look to Barcelona for an exponent of the second model of municipal and locally-led ownership. Under Ada Colau's leadership, the Barcelona Council has established a Municipal Data Office, which is 'responsible for the management, quality, governance and exploitation of data relating to Barcelona City Council and all its associated bodies (public and private) that provide services to the general public' (Barcelona City Council, n.d.). But Barcelona is not the only example. In the United States, rural city councils forged an alliance to create the digital infrastructure necessary to provide broadband service. The citizens of rural areas in the US (and those in many parts of the UK) lack fast and sometimes any access to the internet, as private corporations considered those services not to be cost-effective. Similarly, the city of Stockholm created Stokab, a

public company providing analogous services (Stokab, n.d.). When we bear in mind that more and more states and public administrations are turning to large digital corporations like Amazon and Google for the management of their data and web services, a massive privatisation by stealth, this appears especially relevant. These digital corporations, in providing essential services to state administrations, steadily encourage a dependence on private platforms that is hard to break. Currently, these corporations have massive amounts of data at their disposal for the development of new technologies, thereby broadening the digital divide between the public and the private sector and solidifying the dependency relationship while eroding digital sovereignty. Finally, as discussed above, the *Labour Manifesto* proposes the national ownership of companies dominating strategic sectors of the economy. This proposal follows some of the arguments outlined by Srnicek:

> What's the answer? We've only begun to grasp the problem, but in the past, natural monopolies like utilities and railways that enjoy huge economies of scale and serve the common good have been prime candidates for public ownership. The solution to our new-fangled monopoly problem lies in this sort of age-old fix, updated for our digital age. It would mean taking back control over the internet and our digital infrastructure, instead of allowing them to be run in the pursuit of profit and power. Tinkering with minor regulations while AI firms amass power won't do. If we don't take over today's platform monopolies, we risk letting them own and control the basic infrastructure of 21st-century society (Srnicek, 2017).

The public ownership of digital corporations presents several advantages. First, it would end the blatant technological and political relation of dependence between privately owned corporations and public institutions. Secondly, it would stop at once the gatekeeping power of companies like Google, who currently control almost all access to the internet. Thirdly, it would allow a de-privatisation of the new political agora and public spaces of social networks. This is critical as, in our digitised context, voting patterns are becoming increasingly influenced by the discussions, debates, campaigns and propaganda that take place on the web. Finally, the public ownership of digital platforms would guarantee universal access to resources that have become fundamental for our personal or professional development. Although Jeremy Corbyn's leadership has abruptly ended and we can

expect a change in the Labour Party's attitude towards the digital economy, the measures proposed here lay the groundwork for other leftist political parties who are not scared of imagining new digital horizons far from the dogma of techno-solutionism and neoliberalism.

Having said that, as one would expect from the Labour Party even under Corbyn, the measures outlined above are essentially a social democratic solution, indeed more radical than those of the European neoliberals, but not pointing towards digital communism. This digital socialism points to a radical change in the management model of the digital capitalist political economy, whereas the thinkers of a new digital communism propose a whole new communist political economy based on the development or extension of technological tools such as AI and automation. Digital communism, like other communist projects, has a strong utopian component. Unlike most of the digital socialist measures, digital communism believes that the rapidly accelerated adoption of automated productive technologies will enhance and enable a post-scarcity society for all. In the same way, digital communists' criticism questions the centrality of 'digital labour' in both the liberal and social-democratic tendencies. For this reason, digital communism proposes an accelerated transition towards automated production in which robots and AI would perform nearly every undesirable, monotonous or overly labour-intensive task (Bastani, 2019). Digital communism also questions the national scope of the socialist measures propounded, among others, by the Labour Party, and the possibility of digital socialism in one country (Fuchs, 2020). Therefore, digital communists distrust state interventions that could merely lead to the replacement of private censorship with state censorship, a fragmentation and balkanisation of the internet, and the loss of net neutrality. An example of the extremes of this state-led approach can be seen in the dystopian digital surveillance state that is the People's Republic of China (Morozov, 2019).

Despite this theoretical criticism, socialists and digital communists remain at this point fundamentally indistinguishable in their practice. Both groups support the same union struggles and raise the same

harsh criticisms about the digital monopolist reign. Although there are certain frictions in the role that the state may have in the government of data flows, their schemes are fundamentally similar, at least in the short term. Perhaps the biggest difference lies in their respective conceptions of work. While digital socialists continue to advocate for better working conditions (chiefly in the form of fights against precarity and false contracting models of employment), and hence a society still based around the wage system and capital accumulation, the communists instead propose the abolition of waged labour and the constitution of a post-scarcity communist society through the radical automation of almost everything.

Conclusions: The Road to Digital Socialism

We inhabit a world dominated by tech corporations. Every space of our digital lives has been colonised and commodified in one way or another. The neoliberal myth, at this point almost a dogma, wants us to believe that any alternative to digital capitalism is not only impossible but unthinkable. It is hard to imagine a search engine other than Google or social media other than the ones belonging to the Facebook family (Instagram, Facebook and WhatsApp). Even the new ways of communicating feelings and experiences, such as TikTok, or free collaborative software development apps are coded in a way that makes it nearly impossible to use them outside the reproduction and circulation of capital. If code is law, the law of cyberspace is entirely capitalistic. Partly because of this, imagining a non-capitalist future is extraordinarily difficult, a fact easy to verify by taking a quick look at the latest sci-fi blockbusters. All of their plots are quite similar: an apocalyptic catastrophe of one sort or the other, caused by the capitalist contradictions of our times (generally environmental destruction), has wiped out the world as we know it, but the capitalist mode of production somehow, invariably, continues to reign. However, even if popular culture points at the inevitability of a capitalist future, we can still ask the old but never démodé question: Who is to own the means of production? Whose (digital) future?

The newness and disruptive character of digital capitalism has gathered the attention of the academic community and the general public alike. While there is a consensus on recognising the importance of the event, there is little agreement with its definition. Sharing Economy, Platform Capitalism, Gig Economy, Information Capitalism or Surveillance Capitalism are among the labels used to name a changing reality that has reached nearly every corner on Earth in record time. As you may have noticed, this thesis opted for the generic name of Digital Capitalism, which works both as an overarching label encompassing all the aforementioned labels while accurately points at its capitalist spirit and exploitative nature. As I explained in Chapter 1, scholars from many disciplines are looking at this multifaceted phenomenon. This has been extremely helpful given the aim of this chapter: to

provide a thorough but wide-scope analysis of the legal-political ideology underpinning digital capitalism, what I have named here as the silicon doctrine. Without the help of contributions coming from critical legal studies, sociology, politics, communication and technology studies, it would have been impossible to outline the disruptive features of the silicon doctrine, announced in Chapter 2 and further developed throughout the work: data extraction, domination of the digital infrastructure and labour exploitation.

As mentioned in Chapter 2, the silicon doctrine was born and raised in a very specific intellectual, technical and economic context characterised by a *frankensteinian* mixture of public funding, libertarian and neoliberal ideas, and a progressive/liberal environment. All of these ingredients were cooked and served to the public as an ideological plate by the CEOs of the same companies leading digital capitalism: Facebook, Google, Uber and so on. As opposed to other intellectual and material expressions of capitalist thought, the silicon doctrine has little scholar pedigree and way much more grounds in the hacker and nerd culture. These unorthodox and varied origins have made digital capitalism ideological features elusive to researchers. For instance, Eric S. Raymond's influential *The Cathedral and the Bazaar* synthesises the Bay Area hacker punk vibe with Hayekian postulates condimented with vulgar corporate greed.

The last three years have been a constant reminder of the digital capitalism's criminal activities. Scandal after scandal, digital corporations have abandoned their former veil of innocence. Despite reiterated apologies from CEOs before courts, senates and a variety of investigative bodies, digital corporations have shown a psychopathic lack of remorse for their actions, as it has been proved by their incorrigible recidivism. That sparked my attention—'there must be a logic behind that', I thought. Chapter 3, 'The Crimes of Digital Capitalism', is an exploration of the motives driving digital corporations in their recidivist law breaking behaviour. Drawing on the works of classic and contemporary legal scholars and criminologists, I hypothesised that, perhaps, the digital capitalism

business model necessarily requires the violation of privacy and competition laws and rules. Uber, Airbnb, Clearview, Palantir, Google, Facebook… wouldn't have succeeded hadn't they acted as the hackers their CEOs are. The chapter traces back to the neoliberal revolution, digital capitalism's legal roots. Specifically, neoliberal tolerance towards monopolies. While it is not clear that something like the uncompetitive digital market we have today was foreseeable in the 1970s, as I explain, capitalist animosity towards market control resulted in today's digital oligopoly. What is to be done? While I don't have a final answer, I propose something. Following the social harm critical theory of crime, I suggest we should face digital capitalism crimes with a framework, flexible enough to grasp the changing technological environment, the dual digital/material conditions of objects and subjects, and the seriousness of the offences.

Connected to the crimes of digital capitalism is the exploitative system digital corporations are creating. As described in Chapter 4, 'The Rise of the Legal Machines', the new capitalist mode of production is redefining the way we understand law and the relations of production. Some readers may have been surprised by the authors I chose to frame my enquiry, fundamentally Marx and Pashukanis. But, in fact, their clarity and intuitions were extraordinarily helpful in this particular journey through law, factories, workers and machines. It is worth highlighting two main findings from this chapter. First, I realised that algorithms, the key technologies of digital capitalism, are at the same time means of production and the code regulating the working conditions of the gig proletariat (that's why I have named them the legal machines). Second, liberals are trapped in a dead end. While the new labour law is being coded, carved in digital machines' hearts by private corporations with no overview or control, liberals are looking at paper-based law. Sadly, as has been proved, paper-law will not stop digital capitalism's disruptive drive to hegemony, it simply does not work with the hacker spirit.

As we have seen, Silicon Valley proposes (or imposes) a new way of doing business and organising relations of production. Digital capitalism's plans to disrupt governments and the rule of law are the logic consequence of their never hidden ambition. In Chapter 5, I trace and map the ideological grounds of contemporary trends in governance and law-making involving technologies and organisational methods influenced and/or controlled by digital corporations. What I hypothesise there is that, behind those allegedly neutral technologies, there lies a heavily ideologised political project rooted in cybernetics and neoliberalism. The chapter critically explores the pioneering works of Eric S. Raymond and Tim O'Reilly, two influential digital capitalist theorists largely disdained or ignored by more respectable academics. I tried to demonstrate how the digital capitalist theory of State is solidly structured in ontologies not always familiar to political scientists, sociologists or legal scholars. I wrote the chapter bearing in mind that we should be making more efforts to understand digital capitalism's beliefs. After all, what Palantir thinks of security, Google of education or Facebook about the public sphere is defining the way we are experiencing all those fields (to mention a few). However, the main question discussed in the chapter is not whether one or another element that used to belong to the sphere of State action is being privatised. Instead, what I argued with the help of authors such as Carl Schmitt or Hannah Arendt is that digital capitalism's theory of State is challenging the pillars of western(ised) understandings on law and politics as a whole.

Despite the utterly pessimist feeling towards technology the thesis exudes, I do believe that a better digital future is possible. That's why I was moved to write Chapter 6, 'Whose Digital Future?'. The intention behind the chapter is twofold. First, to demonstrate that, while it is true that digital corporations have imposed an outrageous regime of exploitation and technological dependency, we are in a very good position to reverse the situation. Governments, social movements and the general public have become aware of the crimes of digital capitalism. And it is not exaggerated to say that the times of the New Gilded Age will end soon. The question is not when or how, but what will come afterwards. A digital capitalist nationalism such as in China? A corporate State like in *Blade Runner*?

Or, perhaps, something else, something exciting, empowering, fairer. The question about the future links with the second intention of the chapter. That is, to connect the critical theory on digital economy with the broader anticapitalist discussions, especially those related to economic planning. There is so much going on at the moment that no one can predict what will happen in the medium or the long term—surely this is a bad time for oracles. However, despite the uncertainty of the future, we can be sure about a couple things. The confidence in neoliberalism is shrinking worldwide. The public is back, corporations are strengthening links with governments, and everyone is planning ways to manage the current catastrophe. We now know that the neoliberal end of history is dying. Are we ready to dare the impossible?

Although Corbynist digital socialism is not as attractive as the idea of automated post-scarcity factories producing everything we could imagine, it's not hard to still feel a thrill at the idea of socialising Google, Amazon and the others. Even this social-democratic programme would end at once their power over communications, access to information and connectivity. Yes, I want the public sphere returned to us from the hands of those governing it from Menlo Park. I can see Aotearoa/New Zealand building decentralised data centres in impoverished rural areas. Setting up a Kiwi Internet for all. Taking down the infrastructure of the attention economy that is keeping us hooked to our phones while using our data to develop the technologies of tomorrow's consumers. I can see a giant Kiwi Uber Co-op, or an Amazon-like co-op with unionised workers, enjoying public health, unemployment benefits, maternity leave and the rest of our hard-fought labour rights. Perhaps it wouldn't be a fully automated luxury communism, but, still, it would be great to have an anti-racist, anti-sexist state-owned, worker-managed 'coding factory' prepared to reverse the anti-poor, racist, misogynistic algorithms of the neoliberal hydra; including those used in our punitive welfare and criminal justice systems, the ones in banking and finance, and so on. In short, I don't know if what I demand is digital communism or not, but I want the people to own the digital means of production,

where a good chunk of what surrounds us is produced.

While it is true that the digital present is capitalist, patriarchal, racist and fundamentally criminal, this does not mean that the future is decided. Capitalist discourse aims to make us believe that there is no way beyond the narrow walls of the market. Even the allegedly novel proposals coming from Silicon Valley, those that speak of flying self-driven cars and space colonies, only reproduce the capitalist model of rule by large corporations. This corporate regime has reached such a level of degradation that the liberal states themselves are trying to tackle digital capitalists. The tradition of struggle of the oppressed leads us to question the obvious. It invites us to think the unthinkable and propose new emancipatory horizons beyond the current conditions and limitations. Both the social democratic approaches that propose a progressive takeover of the structure and infrastructure of the digital economy and the communists who invite us to imagine a tomorrow where scarcity and non-voluntary work are a bad memory of the past allow us to trust in the possibility of regaining control of our lives. They return our faith in a future that in fact belongs to us.

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