The State

A Key Actor in Shaping Data Infrastructure Space

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The datafication of society has become a significant feature of contemporary social life; emerging from the global uptake of personal computing, internet and mobile communications and cloud services society is now moving into the next phase which is characterized by data-driven decision-making, artificial intelligence (AI), sensors and edge computing. While society is still grappling to understand the social, cultural and political implications connected to these systems, the political imaginaries and economic drivers that are privileging data and technology often go unquestioned. Building on a growing body of research that is dedicated to understanding how technology intersects with governance, this chapter moves away from the notion of the state as being subjected to the dynamics of the data economy and position it as a key actor that actively tries to shape the contemporary relationship between technology and society. As such, this chapter draws on a close reading of the European Commission white paper on artificial intelligence (AI) to argue that for the state data and data infrastructures are seen as essential to sustainable economic growth and societal well-being which drives them to actively mobilizes its regulatory, resource and bureaucratic apparatus to stimulate the development of domestic data infrastructure spaces and a market for European trustworthy AI products.

Since its early days, the nation-state has enabled and been subjected to larger changes such as the industrial revolution, wars and civil unrest, the emergence of capitalism and in its wake the centrality of the market, privatization of state functions, securitization of politics, and globalization, through each paradigm the role and power of the state has shifted (Scott 1998; Harvey 2017; Dencik et al. 2019). A growing body of research has pointed to the multiple ways in which the "datafication" of society (Mayer-Schoenberger et al. 2013) has caused another significant shift in governance, where it is argued that the interplay between data, governance and the market is changing power relations in society. At the core of this transformation is the belief of states, companies and citizens in data to have the capacity to objectively represent social life and predict human behavior in ways that were inconceivable pre-datafication (van Dijck 2014; Andrejevic et al. 2020). Giving rise to the notion that complimenting or replacing human decision making with data analysis will lead to more efficiency and effectiveness decision-making. Therefore, van Dijck (2014) argues that turn to data is characterized by a deep trust in both the data and in those entities that can process large amounts needed to "predict" human behavior. Some even argue that from this premise emerged a rationale that places data central to the understanding of society, in such a way that it prevents the creation of an alternative political and economic imaginary (Andrejevic 2020; Dencik 2018; McQuillan 2019), suggesting that it is the deeply rooted belief in data that influences the state to privilege data as a key feature of modern statecraft.

As Henman (2010) points out, the turn to data for statecraft is both a means through which state policies are implemented as in itself shaping the political imaginary. He builds on Peter Miller and Nikolas Rose (1990) characterization of governmentality, which "involves both the political rationalities and technologies of government" (Henman 2010, 26), the first encompass the justification for governance and the latter the means through which a state governs. Henman (2010) argues that technologies of governance, in this chapter data that makes people and events legible to the state, are not merely a means for translating political ideologies of the state into action, but that these tools, in turn, shape the political rationalities. Thus, when data-driven decision-making becomes a tool for statecraft, and society and people only become legible through data, an

argument comes together to shape a number of political realities: it will justify increased government data collection and surveillance (Egbert 2019). It will prioritize governance that is aimed at managing a problem rather than trying to addressing the structural causes of the problem as data analysis privileges correlation over causations (Andrejevic 2014). And it will allow the state to increasingly disclose and connect data within and between governmental institutions to impose new conditionalities on those trying to access to specific government services (Henman 2011). Henman's (2010) argument implies that while data is primarily referred to as a tool of governance it, in turn, shapes the political rationalities and further entrenches the centrality of data within statecraft.

It is important to note that the conceptualization of contemporary governance needs to be understood in relation to capitalism and the political imaginary of how economic growth is increasingly tied to the value of data. An emerging body of research is exploring the relationship between data and capitalism, and while there is much debate about its exact nature, critical political economy scholars generally agree that the political and economic organization of data is transforming and enshrining the distribution of power relations in society. At the core of this new economical paradigm is the idea that data holds value and creates a new form of accumulation that "aims to predict and modify human behavior as a means to produce revenue and market control" (Zuboff 2015, 75). The nature of data, its replicability and transferability at almost no costs, makes it subjected to a different economy "where abundance is the norm rather than scarcity" (Brynjolfsson et al. 2014, 9), as such extracting value from data becomes a question of both having access to it and having the knowledge, skill and resources to analyze it (Andrejevic 2014; Wark 2019). Thus, as Srnicek (2017) argues, the competitive advantage in the data economy stems from the scale of data and computational power one has access to and the ability to dominate the niche one operates in, which has resulted in the rise of large monopolistic technology companies who are primarily based in the United States and China. These developments have both "entrenching a dependency on an economic model that perpetuates the circulation of data accumulation" (Dencik 2020, 1) and centralized control over data that is needed to develop the next-generation technologies. As such, the emergence of the data economy has confronted states with the rise

of large monopolistic technology companies that operate both inside and outside their domestic jurisdictions and control the means on which this new economic paradigm is based.

The spaces of conflict between domestic and transnational jurisdiction in which companies operate to maintain and gain a competitive advantage is conceptualized by Easterling (2016) as Extrastatecraft. In her historic analysis of free trade zones, broadband networks, oil exploration and spatial products she draws our attention to the establishment of infrastructure spaces in which there are "multiple, overlapping, or nested forms of sovereignty, where domestic and transnational jurisdictions collide, ... a portmanteau describing the often undisclosed activities of, in addition to, and sometimes even in partnership with statecraft" (Easterling 2016, 15). These infrastructure spaces are characterized by the drive of industries to gain access to new markets and new territories to increase capital through extraction and accumulation, and the regulatory exemptions and tax incentives within sovereign territories to attract or support specific industries without public dialogue. Which have often resulted in the creation of new physical or immaterial infrastructure spaces, where "labour and environmental abuse proceed unchecked by political process" (Easterling 2016, 15). Drawing on Easterling, this chapter argues that the turn to the datafication of society, the interwoven relationship between technology and governance and the emergency of a global data economy that operates inside and outside domestic jurisdiction has created data infrastructure spaces that go unchecked by traditional political processes and as such can be considered new sites of Extrastatecraft.

In the conceptualization of Extrastatecraft, the state is not considered weak or insignificant; it is often the initiators, supporters and at times the master of these infrastructure spaces. As I will argue in this chapter, the state has the ability to wield its legislative power, bureaucratic apparatus and institutionalized legal order to defend the interest of the dominant class and forward certain political ideologies (Jessop 2016; Smith et al. 1999). While the rise of the "big tech" companies is often attributed to the Silicon Valley's free-market ideology, the importance of favorable domestic regulatory environment and tax exemptions in the shaping of the data economy should not be dismissed (Meideros 2019). Chander (2014) exposes how legal innovations in the 1990s in the Unites States "reduced liability concerns

for internet intermediaries, coupled with low privacy protections, created a legal ecosystem that proved fertile ground for the new enterprises" (Chander 2014, 642). These favorable domestic policies were coupled with the global idea of technological exceptionalism, which assumes that there is something so fundamentally different about data that domestic legislation and government control is inapplicable and undesirable (Flyverbom 2016; Kahin et al. 1997). Since then, territories like the European Union have slowly been trying to master the data infrastructure spaces and its impact on fundamental rights and domestic market economy through erecting legal regimes like the General Data Protection Regulation and submitting "big tech" to antitrust investigations. These new historical analyses of the rise of the technology industry foreground a global tension of statecraft where the state as a regulatory body is both a contributor and a subject to the rise of global technology companies.

However, as Gates (2011) and Mazzucato (2011) note, the state is more than a regulatory body and has been instrumental in shaping the data economy beyond regulation. Mazzucato's (2011) notion of the entrepreneurial state describes how major technological advances in contemporary history were allowed to materialize through the structural financial support of the United State government. The Department of Defence (DoD), Defense Advanced Research Projects Agency (DARPA), but also the Department of Energy and the National Science Foundation made significant investments in internet protocols, search algorithms, GPS technology, microprocessors, LCD displays and touch screens through applied research grants, early-stage finance and strategic procurement, without which these technologies might never have emerged. Gates (2011) offers a historic account of the rise of facial recognition, through which she notes how the DoD started investing in research labs working on face identification technologies in the 1960s and once these identification systems matured into a commercial product by the 1990s, companies in search of a market found customers in a range of state institutions and agencies (Gates 2011, 27). As such, the state is both an early-stage investor in surveillance technologies and a primary consumer of these technologies once they become a commercial product. These insights allow us to move away from the notion of the state as a mere consumer or regulator of technology and towards the state as a complex assemblage of institutions, organizations and interactions that are working

for and position the state as an actor with the power to shape technological advances through its financial investment, policies and regulatory environment across spatio-temporal horizons in pursuit of its objectives.

Below, this chapter builds on these notions of the state as a key actor in shaping of data infrastructure spaces, to go on and argue that in their eyes the data economy has resulted in spaces that enact infrastructural powers that sit beyond or outside traditional political processes, as such it is in their interest to master the next technological paradigm to (re)gain its centralized authority in society. Therefore, I'm particularly interested in exploring how states engage with the emergence of new technologies like AI and wield their power to gain control over data infrastructures that operate between domestic and transnational jurisdiction. The following section explores Europe's approach to AI through a close reading of the European Commission "White Paper on AI – A European approach" (European Commission 2020) and foregrounds how the state directs its political rationale and, in turn, will allocate a variety of state resources to construct a European AI market. Using these developments in Europe, I advance the argument that those states with the ability to wield significant legislative power, mobilize resources and direct the bureaucratic apparatus will do so to stimulate a domestic AI market in order to decrease their dependency on the global commercial entities currently dominating data infrastructure spaces.

The white paper: an approach to construct a European AI market

The European strategy on AI articulates a political imaginary in which economic progress and social well-being have increasingly become dependent on a data economy that is dominated by non-European actors to argue that state interventions need to ensure Europe will reap the benefits of this next phase in digital transformation. Artificial Intelligence emerged as a distinct policy area for the European Union during the Jean Claude Juncker presidency from 2014–2019 (Nikolas et al. 2020) and was handed over to the European Commission new president Ursula von der Leyen in 2019. Her commitment to regulating AI in the first 100 days of her office resulted in intense internal and external lobby efforts to slow down any legislative process (de la Baume et al. 2019). Commissioner Thierry Breton, responsible for

Internal Market and Services and co-responsible for the conception of the white paper, expressed a reluctance to rush AI regulation and stated in his confirmation hearing in the European Parliament "I am not saying we will have regulation on AI in the first 100 days. I won't be the voice of regulation on AI" (de la Baume et al. 2019). These lobby efforts succeeded at dwindling down the legislative commitment to the development of a European AI strategy, which is presented in the "White Paper on Artificial Intelligence – A European approach to excellence and trust" (European Commission 2020). In it, the Commission sets out Europe's policy objectives to promote the uptake of AI and address the risk associated with it through a regulatory and investment-oriented approach.

President von der Leyen presented the Europe Data Strategy and the white paper on AI on the 15th of February 2020 in an opposite the editorial page (op-ed) on "Shaping Europe's Digital Future" (von der Leyen 2020). It is important to note that she opens her op-ed with the sentence "I am a tech optimist," after which she continues to outline her belief in digital transformation to power the European economy and hopes that it becomes "the norm right across our society: from farming to finance, from culture to construction, from fighting climate change to combatting terrorism." In this first section, she frames technological development and uptake as crucial for both economic progress and social well-being in Europe. After a minimal acknowledgement of the need to safeguard rights, preserve privacy and increase trust in the technologies and those who own them, the op-ed quickly moves on to outline how Europe needs a digital transformation that is "European by design and nature." She closes her op-ed with the statement, "We successfully shaped other industries – from cars to food – and we will now apply the same logic and standards in the new data-agile economy." As I will outline below, President von der Leyen op-ed echos the political rationale put forward in the white paper on AI, in which technological innovation is framed as being a crucial driver for sustainable economic growth and state investments are needed to ensure that Europe will not miss out on the next wave of digital transformation, as such public institutions and services should be both investors in and early adopters of these European made technologies.

A key feature of the white paper is the need to create a European data space that acts as a counter-weight to an otherwise US- and

China-dominated AI market. In a reflection on the current data economy, the Commission notes that 80% of data analysis happens in centralized cloud infrastructures, a market that is dominated by non-European companies, which limits access to data and computation power for European actors and decreases the states ability to govern and control it. The emergence of new technology like AI and edge computing offer opportunities to level the playing field as "today most data relates to consumers and tomorrow far more abundant data will come from industry, business and the public sector" (European Commission 2020). Directing state research and innovation investments towards European industries that both hold a strong global position and are crucial to the next phase of digital transformation is seen as a way to (re)gain access to data infrastructure spaces. Here, they refers to industries such as low-power electronics needed for edge computing or sectors that hold a wealth of European data like health, transport, finances, energy, forestry and space. The Commission warns that the current level of European investments are only a fraction of that of North America and Asia and is urgently calling upon the public and private sector to increase their combined AI investment €20 billion a year. State investment in next-generation technologies as such are seen as a powerful tool to level the global playing field, decreasing the dependency on non-EU actors in the future data economy and turn the EU into a "global hub for data."

In addition, the white paper places a strong emphasis on the role of public institutions in the development of an AI market. They argue that a rapid uptake of AI across public and commercial sectors is needed to enable better access to public and consumer services for its citizens, access to new generation business products, and increasing the efficiency and effectiveness of public services like health care, transport and law enforcement. A close reading suggests that this call to action, specifically for the public sector, is aimed at gaining access to new data sources needed to train AI models and creating a demand-side for European made AI. Shifting the focus from consumer data towards industries data from sectors such as transport, energy, and health allows research institutions and companies to gain access to the wealth of data held by the public sector, who are considered to be a key producer of tomorrows data economy. In addition, the white paper argues that "it is essential that public administrations, hospitals, utility and transport services, financial supervisors,

and other areas of public interest rapidly begin to deploy products and services that rely on AI in their activities" (European Commission 2020, 8). Healthcare and transport are identified as industries that are ready for AI experimentation as the technologies for these areas are "mature enough for large scale deployment" (European Commission 2020, 7). This language suggests that the uptake of AI by the public sector is not envisaged to meet the actual needs in the sector but as a vehicle to increase demand for those European AI products that are mature enough to be deployed but do not have a clear market yet.

The Commission acknowledges potential risks associated to the use of AI, "such as opaque decision-making, gender-based or other kinds of discrimination, intrusion in our private lives or being used for criminal purposes" (European Commission 2020, 1), but positions the state more as a catalyst rather than a regulator of the AI market. It foregrounds the notion that any new technologies bring with them both opportunities and risks and hints at the idea that certain risk will be the result of implementing dominant AI models that are developed and owned by non-European actors. While the Commission argues that these risks can be mitigated by investing in AI models build on European values like the right to human dignity and privacy protection, what the Commission frames as "trustworthy" AI, it is primarily seen as a way to create a unique European selling point that will allow companies to carve out a niche in the global AI market. For other harms that could lead to bias, discrimination and inequality, the white paper proposes a light-touch regulatory regime that aims to govern only those sectors that are labelled as "high risk," like health care. Meanwhile, it would allow sectors determined to be "low risk" to innovate without any new regulatory frameworks, instead proposing a form of self-regulation through voluntary labelling of AI models. As such, I argue that even when the Commission tries to address the risks associated with AI, the market logic prevails.

Conclusion

The central aim of this paper is to further explore the relationship between society and technology, where it moves away from the technology as the object of study towards the political structures that drive it. Here, I'm particularly interested in the state as a key actor that enables and is subjected to larger paradigm shifts and build on Jessop's (2010) notion that the state has the agency to intentionally shape society

through its financial investment, policies and regulatory environment. While its role as a driver of contemporary technologies is often underexplored, a growing body of research argues that its investments and favorable regulatory environments have been instrumental to the emergence of the data economy. This phenomenon gave rise to data infrastructures that are dominated by a few large monopolistic companies that are primarily based in the United States and China, and in turn enables and restricts statecraft. Now that increased prominence for sustainable economic growth and societal well-being is attributed to data, I argue that the data economy has become an important site for statecraft, the state initiates and supports domestic technological developments with the goal to master emerging data infrastructure spaces.

In order to make sense of the state as a key actor that enables and is subjected to the technological paradigm, this paper engages in a close reading of the European Commission "White Paper on AI – A European approach" to explore how their political rationale and technology agenda is directed at shaping the state-market nexus. Here, I argue that the Commission proposes to wield Europe's financial investment, bureaucratic apparatus and regulatory environment to ensure the creation of a European AI market, which is justified by the belief that missing out on the next phase in the global data economy will be more harmful to Europe than any possible negative impacts of AI on society. The Commission hopes to further the European position on the global AI market by prioritizing state investment in "domestic" research institutions and companies, unlocking data held by public authorities as raw materials to train AI models, creating demand for the domestic AI products by encouraging the rapid adoption of these technologies in the public sector, promoting European values as a unique-selling-point of trustworthy AI and developing a light-touch regulation system. As such, it can be argued that states see major shifts in technological development as opportunities to (re)gain control over data infrastructure spaces by directing its centralized authority, legislative power, ability to mobilize resources and direct the bureaucratic apparatus to create a domestic market.

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For N.: I found a reason to keep living/
Oh, and the reason, dear, is you

Let's start with the end of the world, why don't we?
Get it over with and move on to more interesting things.
— N.K. Jemisin, *The Fifth Season*, 2015.

I've seen the future and left it behind.
— Black Sabbath, "Supernaut," 1972.