FROM REGULATING HUMAN BEHAVIOUR TO REGULATING DATA

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PART I

INTRODUCTION

CHAPTER

I

Introduction

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1. Introduction

This chapter lays the groundwork for this book, which contains research on the intersection between innovation, regulation and democracy. Section 2 describes the background of the research agenda developed by the Tilburg Institute for Law, Technology and Society (TILT), which ultimately resulted in this edited volume. Section 3 outlines the research questions that ground this research agenda, as well as this book. Section 4 homes in on nine specific projects developed under the umbrella of this research agenda and discusses the most important perspectives, methodologies and questions that drive these projects. Finally, section 5 provides an overview of the content of this book. It contains answers, solutions and proposals but also – perhaps more often – further complications and dilemmas these projects have exposed.

2. Background of this Book

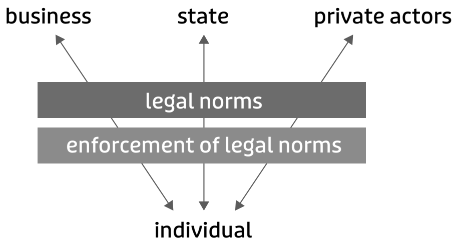

FIGURE 1. *The classic, human-centric regulatory paradigm*

Historically, regulators have targeted human behaviour, aiming to achieve public policy goals by influencing how both natural and legal persons act and how their activities affect others and society.[2] Law regulates human behaviour in various relationships. Classically, public law regulates relationships between citizens and states, while private law regulates relationships between consumers and industry as well as relationships between individuals and between businesses.

Under the influence of, inter alia, globalisation, privatisation and digitisation, changes to this classic approach have taken place over the past decades. Polycentric governance, shifting power relations, and complex networks of regulatory structures have forced regulators to broaden their toolbox and include instruments such as soft-law, self-reg-

[2] Sections 2–4 are based on TILT's Sectorplan description, which in turn was based on text contributions from various Sectorplan members and composed by, among others, Ronald Leenes and Bert-Jaap Koops.

ulation and certification. What has been left unaltered, however, is the focus on human behaviour and relationships. In the 21st century's data-driven society, with the rise of artificial intelligence (AI), big data and robotics, the classic regulatory paradigm has been challenged in fundamental ways:

- The extent to which public policy goals can adequately be achieved by regulating human behaviour in the context of human relationships is increasingly uncertain. In contemporary debates on regulatory challenges in the context of data science and algorithmic decision-making, the focus is on how data behaves and how technological systems operate, rather than seeking to understand individual or collective human behaviour.
- Increasingly, rules are automatically enforced through data systems that can self-adapt based on feedback loops. The clear distinction between norm-setting and norm enforcement (i.e. substantive law versus procedural law; the content of legal rules versus the enforcement of legal rules through the judicial system) is thereby blurred. Human discretion and human interpretation of rules as key features of the legal system may over time fade to the background.

These two interrelated developments imply that the regulatory paradigm is gradually shifting from a human-centric paradigm to a data-centric paradigm, raising fundamental questions on the formulation and enforcement of norms and how to shape adequate checks and balances in regulatory processes.

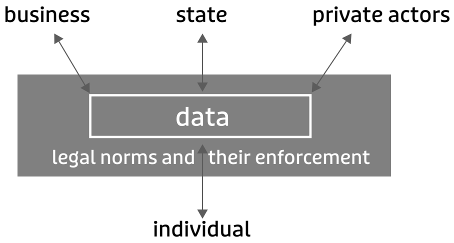

FIGURE 2. *The new, data-centric regulatory paradigm*

3. Research Agenda

This is why TILT started a research programme, funded by the Dutch government, with this guiding question: how can the shift from a human-centric regulatory paradigm to a data-centric regulatory paradigm be mapped, understood and, if possible, shaped?

Three research lines were developed to answer this question, which are based on three key elements of regulation.

- Stream 1 has as its overarching research question: how can **rules** be formulated and enforced when regulation shifts from a focus on human behaviour and human relations to data relations and the behaviour of data systems?
  - How does data-driven decision-making affect the legal system?
  - What legal and social challenges arise as people interact with data and AI systems within the legal system?
  - What rules are appropriate to regulate digital competitive advantage in a data-driven platform economy?
- Stream 2 has as its overarching research question: what **concepts** can be used in regulation, when regulation shifts from a focus on human behaviour and human relations to data relations and the behaviour of data systems?
  - What concepts are suitable for regulating data relations, when all data are personal data and the General Data Protection Regulation (GDPR) seems to have become the law that governs everything?
  - What concepts are suitable for capturing privacy protection in regulation to adequately protect trust and identity in the context of data-driven technologies?
  - How can a common understanding of the concept of consent in data protection and in contract law guide the legitimate processing of personal data and the entering into a contract?
- Stream 3 has as its overarching research question: what **values** are vital when regulation shifts from a focus on human behaviour and human relations to data relations and the behaviour of data systems?
  - What is the role of human autonomy in an era of machine autonomy and data-driven decision-making?
  - How can economic regulation safeguard the autonomy of individuals and businesses vis-à-vis digital giants in a data-driven society?
  - What regulatory, social and ethical challenges emerge when healthcare personnel interact with data and AI systems within the healthcare setting, and how can code contribute to supporting a normative framework?

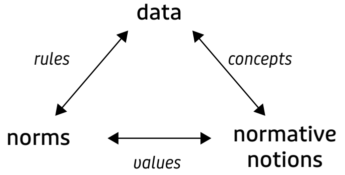

FIGURE 3. *The data-oriented regulatory triangle*

4. The Projects

To answer these questions, TILT started nine interdisciplinary, cross-sectional research projects, each with a dedicated team of researchers with backgrounds in law, philosophy, sociology, technology, psychology and economics.

Project 1 – The Impact of Data and AI Systems within the Legal System

The first project focusses on the question of how data-driven AI and decision-making affect the legal system and aims to develop a fundamental conceptual framework for comparing the classic, human-centred legal system to a new, data and AI-centred legal system as well as to apply legal data science techniques for measuring (qualitatively and quantitatively) the effects of (big) data and AI on the legal system. In order to understand the impact of AI systems, the project team develops and evaluates methodologies for assessing the effects such systems have on the legal system. This has an epistemological component (where should we look to understand the effects of [big] data and AI on the legal system and on legal practice and are we asking the right questions about these effects?) as well as a methodological component (how can we successfully employ use of legal data science techniques [e.g. natural language processing] on legal research questions to assess the impact of AI on the legal system?).

Three case studies, which focus on the use of AI for immigration decision-making by immigration services, the use of AI for decision-making on environmental permissions, traffic fines and legal oversight of the vulnerable, and the use of AI by law enforcement agencies, yield the concepts and questions that underpin our understanding of possible effects of AI on the legal system. For example, the behaviour of AI systems can be evaluated from both a technical and a legal perspective. In AI and machine learning, there are technical evaluation metrics for algorithms – such as accuracy, precision and computational complexity. Comparatively, from a legal perspective, one evaluates the impact on the rights of the subject and due process. AI and data-driven decisions require rethinking the conceptual framework. For instance, does the fact that an algorithm can predict a human judge's decisions with a high accuracy mean that we can, in the future, give the algorithm the power to make similar decisions?

Project 2 – Integrating AI into the Human-Centric Legal System

The driving question for this project is what legal and social challenges are arising as people interact with data and AI systems within the legal system. This project focusses on understanding problems of human interaction with AI in the legal system and interrogates how notions of fairness and justice are operationalised within the legal sector.

This project builds on Project 1 and looks at whether automation bias (a tendency not to question machines' guidance) occurs, what level of discretion is left to decision-makers and whether this is changing with the embedding of AI, how the quality and risks of decision-making processes based on AI are evaluated, and how explainability is conceptualised in different applications and environments. The project team employs methodologies and insights from media studies, which is currently one of the most important 'home disciplines' for studies of AI and fairness, and which increasingly produces researchers who can work on theoretical questions incorporating technical understandings of AI systems.

Project 3 – Competitive Advantage in the Digital Platform Economy

Society being data-driven increases the risk of interferences with fundamental rights. Fundamental rights infringements by tech giants are more likely to be consented to or ignored by citizens, since they have no market alternative to the services these entities provide. The absence of competition thus renders existing legislation, such as the GDPR and the Charter of Fundamental Rights (CFR), insufficiently capable of guaranteeing fundamental rights in a digital society. Competition law's adaptability to economic reality allows it to better tackle the digital transformation because it does not depend solely on a centralised authority, being fully open to enforcement by private parties. It has the tools to consider the exchange of personal data against services on digital platforms as a market transaction, and it provides a framework to balance innovation, regulation and ethical aspects of new technologies.

The third project focusses on two strands of research. On the one side, there are questions of market power related to the lack of short-term alternatives to digital services: the tipping of markets with network effects, the data necessary to enter those markets, the reduction of choice and data protection, the exclusion of competitors using the same platform. On the other side, there are questions of strategic action across the digital sector: the use of shared assets like platforms and intellectual property, the profiling of consumer preferences through personal data, the mobilisation of data and other resources for future innovation, and the influence over regulatory and infrastructure design.

Project 4 – Understanding Data as an Economic Good and Data Governance Through Property

The fourth project – situated on the intersection of law, economics and political economy – explores the concept of data as an economic good as a possible alternative analytical framework for informing regulation of data relationships. Conventional ideas about information as a public good are transferred by some to the modern context of data without question. The recent leaps in information technology, however, challenge these ideas, as technology fundamentally alters the nature of something as a good, for example, by making it excludable or subtractable. This project explores property rights to data. For instance, market mechanisms enabled via private property are traditionally considered a preferred solution for governing a private but not a public good. Collective property rights may provide a legal tool to limit access to data, which is essential for sustainable data use. This project aims to understand the nature of data as an economic good within a data-driven society through the lens of data relationships, as well as to formulate strategies for regulating data relationships, informed by the understanding of data as a good.

Project 5 – Exploring the Interaction Between Privacy, Trust and Identity in the Data-Driven Age

Under the current paradigm, privacy is predominantly seen as an individual right, protecting individual interests like personal autonomy. The GDPR aims to empower data subjects by providing them with more control over their data, among other things. However, there is a growing gap between the legislative approach and the everyday privacy experience of data subjects. First, data subjects do not experience control over their data. Their privacy expectations are predominantly based on the trust they have in the apps and devices they use. Second, data subjects are increasingly confronted with unwanted information about themselves, illustrating the ineffectiveness of the current legal regime to achieve one of its major goals, namely the protection of digital identities. That is why this project on the interrelationship between privacy, trust and identity focusses on two points in particular:

- First, data subjects seldom make active decisions on the sharing of personal data, and if they do, this process is characterised by confusion, dependency and vulnerability rather than by autonomy, confidence and control. Moreover, technological applications are increasingly designed to invoke trust, regardless of whether that trust is justified or not. While user perceptions about privacy and the limits of exercising meaningful control in data-driven environments have been studied empirically, theory-building on such experiential aspects of privacy is mostly lacking.
- Second, in the data-driven environment, the individual will be confronted with unwanted information about themselves. Although the current legal paradigm does grant the individual a right to withhold access to personal data from others, it is silent on the question of how the individual should be protected vis-à-vis information communication to herself. Consent and control cannot be the only mechanism used to solve this dilemma.

Project 6 – Consent and Contracts

An increasing number of contracts in the data economy requires that personal data is provided in some way by the buyer of goods and services. Consumers agree to provide the suppliers of those goods and services with all kinds of data about themselves and their preferences. However, the use of data often goes beyond what consumers thought they had agreed to and not always in beneficial ways. Data protection legislation provides for principles relating to processing of personal data, such as lawfulness, fairness, purpose limitation and data minimisation and for a set of rules that specify rights and obligations relating to data processing. Consumers often provide their consent and agree to uses of data that are undesirable or that they would not have wanted to agree to if they had been entirely free to choose. However, contracts can mostly only be concluded by agreeing with the general terms and conditions of the supplier. These terms and conditions can generally not be partially accepted.

One particularly striking problem is the inclusion of terms that give the supplier the right to unilaterally change the terms and conditions. It is further unclear whether the agreement expressed by the consumers qualifies as valid consent under the data protection regulatory framework. In which cases can a data controller rely on the ground that legitimates data processing when it is necessary for the performance of a contract with the data subject? This ground should be interpreted narrowly, covering situations when processing is really necessary for the performance of the contract or if it is really necessary to take steps at the request of the data subject prior to entering into a contract. Both consumer law and data protection law refer to consent and contracts in all facets of user interaction within the data economy. Accordingly, this project aims to create a theoretical framework that would allow for a common understanding of the concept of consent in data protection and in contract law that would enable the legitimate processing of personal data and the ability to enter into a contract more consciously.

Project 7 – The Value of Human Autonomy in Legal AI

This project looks at the changing role and position of human beings in relation to AI technologies. In particular, it focusses on the legal and ethical meaning of human autonomy in judicial systems pervaded by AI technologies. The starting point is that AI applications are not neutral instruments but have a fundamental impact on what it means to be human. As data-driven decision-making tools are increasingly designed to act and even proactively intervene in seemingly autonomous ways – without any human beings in the loop – this immediately evokes the fear that these technologies will 'take over' and diminish human autonomy and discretion. Accordingly, this project examines and re-evaluates human autonomy in the data-driven regulatory paradigm.

Rather than framing AI as an unstoppable force that will dominate and overrule human autonomy, this research assesses the possibility of understanding human autonomy as inherently relational and connected to AI.

This project focuses on how the use of AI in the judicial system affects and interacts with the autonomy of both citizens and public authorities, such as judges and prosecutors. How does AI shape human discretion in the judicial system? How is responsibility allocated in relation to systems that may be opaque to those who work with them and are usually constructed by private-sector actors? How does the shift to a data-driven paradigm shape the positioning of human autonomy in conceptions and evaluations of the rule of law and associated problems, such as due process, predictability and fairness? Consequently, the objective of this project is to examine and re-evaluate the value of human autonomy in the shift towards a data-driven regulatory regime in order to identify possible ways of safeguarding this key value in legal systems.

Project 8 – Protecting Autonomy in a Data-Driven Society

The freedom of individuals to make informed and uncoerced choices is at the heart of modern democracies. However, digital giants are gaining an increasing level of control over individuals. By tracking our behaviour and using data analytics tools, these companies know more about our interests than we do ourselves, thereby enabling them to manipulate our preferences. These concerns no longer only relate to the simple consumption of goods and services; they also affect our autonomy in the consumption of news and the beliefs that ground political voting behaviour. Digital giants are furthermore turning into gatekeepers that other businesses depend on for access to markets and to reach consumers. Through the design of their platforms, digital giants also determine how individual and business users can express themselves and innovate on the basis of the tools provided. Digital giants are thereby able to arbitrarily impose their own rules on the competitive process and the autonomy of businesses and individuals, as well as on the creativity and freedom of expression of others.

Competition, consumer and intellectual property law are becoming increasingly relevant as regimes that can provide additional mechanisms to protect autonomy in a data-driven society. On the one hand, the way in which behavioural targeting and personalisation restrict the freedom of choice of individuals also affects the nature of competition and thereby triggers competition law issues. This changes the relationship between competition and consumer law. While competition law is traditionally concerned with protecting the availability of a range of consumer options through competition, consumer law is primarily responsible for protecting consumers' ability to choose effectively among these options. However, if a consumer is nudged towards one option by having their ability to choose freely restricted, the effect may be the same as only having one option, so that competition issues occur. On the other hand, the 'gatekeeping' nature of platforms and the resulting dependence of other businesses on them raises questions about the role of level playing field discussions in competition and internal market law more broadly. There is therefore a need to take a more holistic view of the different regimes that are at stake in the protection of the autonomy of individuals and businesses in a data-driven society, which this project lays the groundwork for.

Project 9 – Evaluating Code as a Mechanism for Regulating AI in Healthcare

The final project starts from the premise that the range of emerging and potential applications of AI in health and medicine is substantial, offering promise for more efficient and effective healthcare, as well as undergirding the shift to personalised medicine in its preventive, therapeutic and care dimensions. Already, various forms of machine learning are improving on or equalling physicians' performance in diagnosis (e.g. diabetic retinopathy and skin lesions), and additional complex clinical processes are currently under investigation (e.g. prognosis, prevention and treatment decisions). However, the healthcare domain operates within the context of strictly observed normative frameworks that range from fundamental rights to ethical and professional norms that are deeply entrenched. Some of these algorithmic applications run up against legal, ethical, policy and social aspects of these normative frameworks. For example, data protection law specifically deals with issues of privacy and protection of personal data but also with issues such as transparency and non-discrimination (e.g. automated decision-making). These in turn may invoke other legal, ethical and social considerations through the impact that the use of AI systems may have on clinical and care practices.

AI offers opportunities in all phases of the research-clinical care spectrum (diagnosis, prognosis and treatment), as well as in the context of social work and prevention. However, the existing regulatory schemes that target human behaviours demonstrate gaps in the ability to reach aspects of the use of AI in medicine and health that could violate existing norms, and the values and interests that these norms are designed to promote and protect. For example, prognoses based on algorithms have the potential to trigger several concerns. Are there ways to facilitate 'non-discrimination or equal access by design' or to promote preservation of key aspects of the doctor-patient relationship or shared decision-making by the use of code? Additionally, data collection for research or clinical care may offer opportunities for code in the service of non-discrimination or data minimisation/protection. Thus, this project examines the interaction of healthcare personnel with AI systems in the healthcare and social work context. It also explores the opportunities and merits of the use of 'code' in AI as a way of translating key aspects of existing normative frameworks that govern the health domain. This project examines where code may be appropriate based on legal, ethical and practical criteria, what options for code may look like, and the merits of using code versus alternative regulatory measures or modalities, including existing governance mechanisms.

5. This Book's Contents

This book contains the first output of the nine projects. As such, it contains a wide range of topics, ideas, questions and dilemmas. Part II contains five shorter chapters that show how classic divides that underlie many of the contemporary legal frameworks, in particular the divides between the private and the public domain, between the private and the public sector, and between private and public law, are challenged in the data-driven environment. Given these complexities, new legal frameworks have been proposed and adopted by the European Union, the Council of Europe and other organisations with regulatory powers. Notable regulation includes the GDPR, the Digital Services Act, the Digital Markets Act, the AI Act and the AI Liability Directive. There is discussion, however, regarding to what extent these laws are capable of adequately addressing the many challenges that arise in the data-driven environment. Part III discusses the revision of doctrines that are typically associated with private sector bodies, such as consent, consumer law and competition law, while Part IV assesses doctrines that find their origin in public law, such as fairness, non-discrimination and justice. Part V concludes.

Part II – Challenges to the Private-Public Divide

In Chapter 2, Shweta Degalahal shows that the groundwork for most theories on democracy, the rule of law and public participation depends on the conceptualisation of a public domain. In the digital sphere, however, a thorough conceptualisation is lacking. This chapter shows that there are many trends that undercut the traditional idea of the public domain in the digital realm. In particular, it discusses how the public space can be reconceptualised in light of a right to informational privacy.

In Chapter 3, Manos Roussos builds on a similar idea, namely the classic divide between the public and the private sector, where public sector organisations execute public sector tasks and private sector organisations pursue private interests. This model, however, no longer works in the digital era. Banks, for example, are required by law to help with tracing terrorist financial transaction and to identify signs of money laundering in order to aid law enforcement authorities in their tasks. To complicate matters further, combating money laundering and terrorist financial transactions requires data sharing between parties in different jurisdictions. This means that often, four or more legal instruments apply (e.g. the EU framework for data processing by private parties as laid out in the GDPR, the EU framework for data processing by law enforcement authorities as laid out in the Law Enforcement

Directive, and the US frameworks for data processing by banks and by law enforcement authorities). Ensuring these are applied effectively and legitimately presents a challenge.

Chapter 4, written by Taner Kuru, explores the erosion of the public-private divide by homing in on the use by law enforcement authorities of DNA databanks held by private sector organisations. Although this has led to the resolution of several cold cases, there are obvious concerns of privacy. The legal regime is inadequate in providing proper safeguards and questions arise as to the legitimacy of the actions by the police as European courts have adopted several judgments that do not yield clear and detailed guidelines.

Both Keyomars Khaleghi, in Chapter 5, and Aimen Taimur, in Chapter 6, discuss the importance of microtargeting, profiling and manipulation in the area of elections. Through the use of these tactics, as well as by using fake news, both private parties and foreign agents can affect the outcome of political processes, elections and decision-making. Khaleghi discusses these developments in light of the right to free elections and assesses to what extent the contemporary legal framework needs reconfiguration. Taimur, in turn, asks how we can protect our mental integrity and *forum internum* through a rights-based approach.

Part III – Reconfiguring the Legal Paradigm for the Private Sector

Ana-Maria Hriscu and Eleni Kosta present their thinking on the role of consent in the data-driven era in Chapter 7. They show that informed consent, as a legal basis for processing personal data, has been framed in the EU data protection law framework as a tool to empower individuals. However, the analysis of processing activities of three very large online platforms, Google, Meta and Microsoft, reveals how they fall short of meeting some of the main transparency and consent requirements set in the law. Therefore, in the online context, consent can be said to have a disempowering effect rather than an empowering one. Hriscu and Kosta discuss possible solutions to this problem.

In Chapter 8, Thomas Tombal and Inge Graef analyse whether the Data Act can reach its objective of stimulating the European data economy. They show that the Data Act is a welcome but complicated piece of legislation that brings together various interests, in particular the interest of the data holder in protecting its investments, the interest of third parties in accessing data to develop own products and services, and the interest of individuals in protecting and controlling the use of their personal data. This chapter provides a detailed discussion of the Data Act, including critical reflections on how the Act is framed.

Competition law and merger regulation, in particular in the healthcare sector, is the focus of Chapter 9. In this contribution, Tjaša Petročnik and Inge Graef provide a review of data-driven mergers in the healthcare sector that illustrates how economic concerns relating to competition become increasingly intertwined with non-economic considerations regarding privacy and health protection, among other aspects. The chapter argues that this development requires a more proactive approach by the European Commission and national authorities, and it makes suggestions for achieving better coordination and cooperation within the existing regulatory framework.

Part IV – Reconfiguring the Legal Paradigm for the Public Sector

In Chapter 10, Aviva de Groot and Siddharth Peter de Souza argue that the regulation of AI by the EU lawmaker provides a particular momentum for critical engagement. There is broadly voiced urgency to legally protect against AI-fuelled harms but, they argue, the digital rights field needs to engage with those harms from a less privileged standpoint, in order to ensure that society is just and fair. They map justice-related aspects of automated decision-making and argue that these should be considered when updating and revising the AI Act.

Bart van der Sloot, Merel Noorman and Linnet Taylor discuss the theoretical framework that guides anti-discrimination law. They argue that on many accounts, this framework needs a reconceptualization in light of the rise of AI. The current paradigm is ill-applicable to the potential arbitrary ways in which AI can make decisions as well as reproduce and reinforce data biases. This is why they propose understanding discrimination law's main rationale as requiring adequate and sufficient reasons for making decisions, rather than preventing decisions made on the basis of racial, religious, sexual or other distinctions. In Chapter 11, they explore the possibility of drawing inspiration from the republican idea of freedom, which is not based on being free from interference, as is the liberal conception of freedom, but on non-domination.

In Chapter 12, Bart van der Sloot discusses legal AI, or the ideal of automating law-making and in particular, assisting or replacing judicial decisions in which laws are applied to specific cases. The chapter shows that there are three prominent philosophies of law: the legal positivist view of the legal order, the natural law theory and legal pragmatism. The ideal of legal automation aligns with the legal positivist view while, if law is understood through the lens of natural law theory, it may be complicated to capture the essence of the legal order in code. For legal pragmatists, however, the very idea of legal automation goes against what it means to have a legal order. Van der Sloot explains this point by discussing the philosophical framework of Lon Fuller in detail.

Part V – Conclusion

Finally, Chapter 13 contains the concluding chapter and provides an overview of the most important lessons drawn from this book as well as an outlook to future research necessary to answer the many questions, dilemmas and intricacies raised by the authors of the various chapters.

PART II

CHALLENGES TO THE PRIVATE-PUBLIC DIVIDE

CHAPTER

II

Informational Privacy Rights in the Digital Public Space

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