Eduardo Gill-Pedro
Andreas Moberg   *Editors*

YSEC Yearbook of Socio-Economic Constitutions 2023

Law and the Governance of Artificial Intelligence

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Eduardo Gill-Pedro • Andreas Moberg
Editors

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Editors
Eduardo Gill-Pedro
Faculty of Law
Lund University
Lund, Sweden

Andreas Moberg
Department of Law
University of Gothenburg
Gothenburg, Sweden

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Part III

Law and the Governance of Artificial Intelligence

Andreas Moberg and Eduardo Gill-Pedro

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When the Editorial Board of the Yearbook of Socio-Economic Constitutions decided, at the start of 2022, to dedicate the 2023 Yearbook to 'Law and the Governance of Artificial Intelligence', we did not fully anticipate just how timely this publication would be. The year 2023 can be described as the year in which the governance of artificial intelligence (AI) became a matter of global concern. It is the 'breakout year' for generative AI.[1] ChatGPT, the much-talked-about large language model from OpenAI, might have been launched at the end of 2022, but it was in 2023 that it became the fastest-growing app on the Internet.[2] Together with its successors and other generative AI systems, these large language models form the

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[1] Editorial 'A Breakout Year for Artificial Intelligence' Financial Times, 3 January 2023 https://www.ft.com/content/1a329ad3-f696-4ee2-a730-2f8b700f15a1, See also Chui et al. (2023), Market Trends "Why 2023 is a Breakout Year for Generative AI" Analytics Insight, 6 January 2023. Available at: https://www.analyticsinsight.net/why-2023-is-a-breakout-year-for-generative-ai/ and and Sideco (2023).

[2] Hu (2023).

A. Moberg
University of Gothenburg, Gothenburg, Sweden
e-mail: andreas.moberg@law.gu.se

E. Gill-Pedro (✉)
Lund University, Lund, Sweden
e-mail: eduardo.gill-pedro@jur.lu.se

foundation for hundreds of different applications and underpin the development of dozens of new startups.[3] Many analysts and business leaders see these remarkable developments as just the start of the transformation to the economy and society brought about by emerging AI technologies. In a recent survey, a majority of business leaders expected AI 'to cause significant or disruptive change in the nature of their industry's competition in the next three years'.[4] The Financial Times affirmed that '[j]ust as machines augmented muscle in the industrial revolution, so AI can augment brainpower in the cognitive revolution'.[5]

The articles presented in this volume certainly point to the enormous potential that AI brings to a range of technical, social and economic issues facing our world. Naarttijärvi explains how the use of law enforcement represents a clear example of 'shifting technological affordances' that provide law enforcement authorities with possibilities for the identification and location of individuals who did not previously exist. Müllerová highlights how new technologies are facilitating the expansion of quick and affordable mental healthcare to Europe's ageing possibilities, alleviating the pressure on overloaded healthcare services. In a similar vein, Lau notes how AI technology underpins significant advances in physical rehabilitation programmes, in diagnostic techniques and in biomedical developments. In the field of recruitment, Schloetzer and Yoshinaga describe how companies are increasingly aware of the opportunities that AI can bring to improve the speed, accuracy and effectiveness of hiring and employee evaluation processes. More generally, Colonna acknowledges the central role of scientific research, including research on AI, in addressing major societal problems in contributing to economic growth.

At the same time as the enormous transformative potential of AI, and the economic opportunities that these new technologies provide became increasingly apparent, 2023 was also the year where the risks posed by AI became much more widely acknowledged. In March 2023, an open letter demanding a pause to the development of powerful AI systems was signed by hundreds of AI experts, entrepreneurs and thinkers, including leading names such as Stuart Russel, Yoshua Benjio and Steve Wozniak. It noted that '[a]dvanced AI could represent a profound change in the history of life on Earth, and should be planned for and managed with commensurate care and resources' and therefore '[p]owerful AI systems should be developed only once we are confident that their effects will be positive and their risks will be manageable'.[6] The historian and philosopher Yuval Noah Harari argued in April 2023 that AI has already 'hacked the operating system of human civilization'[7] and poses a threat to the survival of humanity, and in May 2023, Geoffrey Hinton,

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[3]For an updated table of startups deploying generative AI see https://airtable.com/shrBeWpMlxf3 e14E8/tblS4TkbJbm0cqT0o.

[4]Mackinsley Consultancy 'State of AI', p. 4.

[5]Editorial, FT.

[6]'Pause AI Experiments: An Open Letter' *Future of Life Institute,* 23 March 2023, available at: https://futureoflife.org/open-letter/pause-giant-ai-experiments/.

[7]Harari (2023).

whom many regard as 'the godfather of AI' and whose team invented the technology behind the current large language models, left Google, calling for companies developing these technologies to stop scaling up AI models until they have understood whether they can control it.[8] Even Sam Altman, the CEO of OpenAI, the company behind ChatGPT, testified before the US congress in May 2023 that generative AI technologies could 'cause significant harm to the world'.[9]

1 AI Governance

These different voices highlighting the need for greater control over the development and deployment of AI can be said to be calling for better governance. The governance of artificial intelligence (AI) can be defined as *the array of institutions, practices and standards which are intended to guide the development and deployment of artificial intelligence systems and applications in a way that avoids negative outcomes and promotes positive outcomes.*

This definition seeks to encapsulate the range of definitions of AI governance that we identified in the literature but that we considered had some limitations. Butcher and Berdize define AI governance as 'a variety of tools, solutions and levers that influence AI development and deployment'.[10] This is somewhat overbroad – we suggest that governance refers to measures or processes that are intended to influence AI development, not to all those that might in fact influence it. Taeihagh describes governance as structures that 'enhance the benefits of AI while minimising the adverse risks they pose'.[11] This is perhaps the desired output of successful governance. But measures that intended to enhance the benefits of AI but that do not succeed would still be called governance—ineffective or failed governance but governance none the less. Erman and Furendal refer to governance (in their case global governance) as 'the coordination of collective action in order to provide public goods and avoid public bads'.[12] This is nicely concise but perhaps too vague to be helpful as a definition. Allan Defoe, then of the influential Future of Life Institute, defined the field of AI governance as '[the study of] how humanity can best navigate the transition to advanced AI systems'.[13] This is an important facet of AI governance, which is concerned with the potential development of advanced general intelligence (AGI), but there are other facets of AI governance that concern

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[8] 'Godfather of AI' quits Google (https://www.youtube.com/watch?v=LWiM-LuRe6w&t=2s) and gives warning about the future of technology' *The Independent*, 30 May 2023, available at: https://www.independent.co.uk/tech/geoffrey-hinton-leaves-google-artificial-intelligence-b2331367.html.

[9] 'OpenAI's Sam Altman Urges Regulation of AI in Senate Hearing' New York Times, 16 May 2023, https://www.nytimes.com/2023/05/16/technology/openai-altman-artificial-intelligence-regulation.html.

[10] Butcher and Beridze (2019), p. 88.

[11] Taeihagh (2021), pp. 137–157.

[12] Erman and Furendal (2022), pp. 267–291.

[13] Defoe (2018).

AI systems that are currently being developed and that have not reached AGI level. Floridi sets out a helpful definition of digital governance: 'the practice of establishing and implementing policies, procedures and standards for the proper development, use and management of the infosystem'.[14] However, as will be shown below, he adopts a narrower understanding of the term than that proposed here.

2   Law as a Governance Tool

Law is one such 'institution, practice or standard' that can form part of the governance of AI. However, the governance of AI is not limited to the legal regulation of AI, that is to say, by the setting down of binding rules, backed by sanctions, mandating, prohibiting or permitting specific conduct on specific actors. The governance of AI can be achieved by legal regulation,[15] but it can also be achieved by other means. Lessig famously argued that there are four modalities to the governance of digital environments—law, the market, social norms, and the design and architecture of the digital environment. Market forces, such as supply and demand or the presence of competition from other companies, limit and constrain the action of market actors. Social norms about the acceptability of certain uses of AI may constrain providers and users, even in the absence of binding legal rules. And the limitations and path dependencies of AI systems, and the way in which the technology is developing, impose constraints on how AI systems can be developed.

It should be remembered that law is still at play, even in these modes of governance that are not dependent on direct legal regulation. Markets are not wholly spontaneous natural orders – modern markets are created by law and are dependent on a highly sophisticated legal superstructure to function.[16] Social norms also evolve alongside a legally constructed social world—social norms both shape the law and are shaped by it.[17] And technological and resource limitations are the outcome of political choices that have been codified in law and that in turn shape and limit law.[18] Technological and design choices made now will guide and constrain the range of technological and design choices available in the future.[19]

Up until recently, the attitude of many engaged in AI research or AI policy was that governance was a matter of lesser concern. There was a 'race to AI', where

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[14]Floridi (2018), p. 3.

[15]C.f. Floridi, who defines digital regulation as a separate and distinct normative approach from digital governance, rather than as a subset of governance (Floridi, 'Soft Ethics').

[16]For an overview, see Brazeal (2023).

[17]See classically, Posner (2002).

[18]Lessig (1999).

[19]Araujo and Harrison (2001), p. 5. It should be noted that, as Araujo and Harrison insist "path dependency does not imply that the future is in any way closed and technological development predetermined" (p. 7).

corporations, states and institutions strived to advance the development of AI systems and to become leaders in the technology.[20] In the rush to develop better and more sophisticated AI, scholarly attention to questions of governance of AI in order to avoid the potential adverse effects of such AI remained negligible.[21] The 2016 Report of the 100 Year Study of Artificial Intelligence found that there was 'no cause for concern that AI is an imminent threat to mankind' and emphasised the need to approach AI technologies 'without fear and suspicion' so as not to slow AI development.[22] In a 2018 Opinion piece, Chris Reed asserted that '[m]asterly inactivity in regulation is likely to achieve a better long-term solution than a rush to regulate in ignorance'.[23] According to Brian Krzanich, then CEO of the chip manufacturer Intel, AI was in its infancy, and it was too early to regulate. Instead, according to Krzanich, the focus should be on fostering innovation and allowing the development of AI to grow.[24] Straub argued that, in light of the great potential of AI technologies, and the great benefits it could deliver, the work of AI scientists 'should be free from concern that some AIs might be banned, and from the delays and costs associated with new AI-specific regulations'.[25]

The governance initiatives that emerged at this time were primarily voluntary codes of conduct promulgated by leading tech companies[26] and non-binding principles promulgated by governments[27] and international organisations.[28] Standard-setting bodies began developing certification procedures that would allow companies to demonstrate their efforts to deliver safe and trustworthy AI.[29] Binding regulations were seen either as too difficult and costly or as counterproductive.

This relaxed attitude began to change, and in 2021, the Commission of the European Union proposed a binding regulation for AI, to be known as the AI

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[20] For an overview of this 'race' dynamic, see Smuha (2021), pp. 57–84.

[21] Dafoe (2018).

[22] Stone et al. (2016). Doc: http://ai100.stanford.edu/2016-report, Executive Summary. It should be noted that the panel's recommendation was not that AI should not be regulated, but that "policies should be designed to encourage helpful innovation, generate and transfer expertise, and foster broad corporate and civic responsibility for addressing critical societal issues". Nonetheless, the overall tenor of the Report is that one should be slow to impose regulatory constraints on the development of AI technology.

[23] Reed (2018).

[24] Kharpal (2017) at: https://www.cnbc.com/2017/11/07/ai-infancy-and-too-early-to-regulate-intel-ceo-brian-krzanich-says.html.

[25] Straub (2017).

[26] Such as Google's AI Principles of 2018 (https://blog.google/technology/ai/ai-principles/).

[27] For example, Australia's AI Ethics Framework of 2019, available at: https://www.industry.gov.au/publications/australias-artificial-intelligence-ethics-framework.

[28] OECD AI Principles, adopted on 22 May 2019, available at: https://oecd.ai/en/ai-principles.

[29] See for instance the IEEE SA CertifAIEd™, at https://engagestandards.ieee.org/ieeecertifaied.html?_gl=1*11fzjeg*_ga*MTQxOTMyMjAzNC4xNjkxNjY4MDc1*_ga_XDL2ME6570*MTY5MzIzNTc2Mi4yLjEuMTY5MzIzNTgwNC4xOC4wLjA.

Act.[30] If the regulation is enacted, it will be the world's first binding legal framework governing the development and use of artificial intelligence. It is likely that it will influence the governance of AI not only in Europe but also around the world, perhaps for years to come.[31] Other important actors have also realised the need for AI regulation. The UN Secretary General launched a Global Digital Compact[32] affirming the need for resolving the 'governance gap', insisting that industry self-regulation would not be sufficient and that a 'global, multi-disciplinary conversation' was necessary. The Council of Europe is developing a binding Framework Convention on AI and Human Rights, and the Working Draft published in July 2023[33] stated that the parties to the Convention were:

> [convinced] of the need to establish, as a matter of priority, a globally applicable legal framework setting out common general principles and rules governing the design, development, use and decommissioning of artificial intelligence.

Even in the United States, calls for binding regulatory intervention are growing, with one Congressman insisting that Congress 'must create a binding regulatory framework',[34] and in China, the concern about the need to maintain control over fast-developing technologies has led to extensive regulatory measures being recently proposed.[35]

The year 2023 can therefore be seen as the year where binding regulation of AI became the focus of the AI governance debate and the 'race to AI' became the 'race to AI governance'.[36]

3   The Challenges of Regulating AI

Nonetheless, while there may be a critical mass of actors acknowledging the necessity of a binding regulation, the difficulties associated with creating such a regulation have not gone away. This volume of the Yearbook highlights some of the challenges and particularities that are entailed when using law in the governance of artificial intelligence. The challenges present themselves in various contexts. Two key contexts that are rendered visible in the chapters of this Yearbook are, first, a set

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[30]Proposal for a Regulation Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act), SEC(2021) 167 final.

[31]Gill-Pedro (2021).

[32]UN Secretary General Policy Brief "A Global Digital Compact" May 2023, available at: https://www.un.org/sites/un2.un.org/files/our-common-agenda-policy-brief-gobal-digi-compact-en.pdf.

[33]Committee on Artificial Intelligence *Consolidated Working Draft of the Framework Convention on Artificial Intelligence, Human Rights, Democracy and the Rule of Law* CAI(2023)18, available at: https://www.caidp.org/app/download/8468539363/CAI(2023)18%20-%20Consolidated%20Working%20Draft%20Framework%20Convention.docx.pdf?t=1693605881.

[34]Ted Lieu 'I'm a Congressman who codes: AI freaks me out!' NYT 23 Jan 2023.

[35]Zheng and Zhang (2023).

[36]Smuha 'From a 'race to AI' to a 'race to AI regulation' (*supra*, n. 13).

of challenges derived from the emergence and development of the new technology in our society and, second, a challenge that stems not only from the technology itself but also from the introduction of the new regulation in the existing legal system. The disruption caused by AI in society is quite easy for everyone to register, but ripples on the surface caused by the introduction of the new technology make their way into the legal system.[37]

3.1 AI as the Subject of Governance

One challenge that falls in the first category and is inherent in the nature of the technology itself is that governing AI entails governing a moving target. This has been made painfully obvious in the context of the proposed EU AI Act. In the draft first proposed by the Commission, generative or foundational AI applications were not listed as high risk nor subject to any specific regulatory requirements. Following the release of ChatGPT in November 2022, and the impact of that system, it became clear that such systems posed particular challenges that needed to be accounted for in the text of the Regulation.[38] As Schütte points out, in her contribution to this volume, developments in the technology can happen very rapidly and leave existing legislative solutions obsolete. Furthermore, AI is a broad term that covers a wide range of technologies, which can be applied in a wide range of contexts. A regulation that might be appropriate for an AI controlling the use of electricity in a building would not be appropriate for the same technology controlling a nuclear power station. As Schütte points out, a 'one-size fits all' approach risks under- or over-regulating. The breadth of applicability of the technology also means that several aspects of AI technology might fall under already existing regulations.

Another challenge posed by AI as a subject of governance, and perhaps the key distinguishing feature of modern AI, is that it can make decisions, at least to some degree, autonomously, that is to say, without human intervention.[39] That makes AI systems of great potential value.[40] However, as Carretta points out in her chapter, such autonomy can result in opacity and unpredictability. It might be impossible for humans to predict how a machine will decide in a particular case, and it may not even be possible to fully explain the decision ex post facto. In her contribution, Lau sets out the implications of such a lack of explainability in the context of the use of AI in healthcare: the rights of patients to informed consent and to be actively involved in

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[37] On a meta-level, it is quite feasible that future legislation already today is prepared by, or with the use of, AI technology in some way, shape or form.

[38] Both the Council and the European Parliament proposed versions that included a section on regulating what the Council referred to as 'General Purpose AI' and the European Parliament 'Foundational Models'. The fact that the institutions could not even agree on what these kinds of AI systems should be called perhaps tells its own story about the difficulties of governing AI.

[39] See generally Chesterman (2020), p. 210.

[40] See generally Agrawal et al. (2018).

decisions about their care may be undermined. This opacity can be a challenge to governance as it can be difficult or impossible to specify what measures to take to prevent particular outcomes.[41] In his contribution, Granmar discusses how the use of artificial intelligence in automated decision-making may well be economically viable but potentially difficult to reconcile with the right not to be subjected to automated decisions stipulated in Article 22 of the EU's General Data Protection Regulation (GDPR). Furthermore, Müllerová explains, the opacity can also make it difficult to hold the developers or deployers of AI systems accountable for the harm suffered as a result of outputs generated by the AI system as proving the causal link may be increasingly difficult.

Closely connected to autonomous decision-making, accountability is one of the challenges highlighted by Córcoles in the field of public procurement law as the authorities procuring AI systems need to acknowledge that the acquisition of artificial intelligence systems is different from procuring traditional technology. Córcoles highlights the difficulties in ensuring adequate human supervision of systems that can otherwise make decisions autonomously of human control.

3.2   AI and the Disruption of Current Governance Regimes

The development of AI technologies is leading to what many consider as a 'worrying concentration of power', particularly in the hands of a handful of private companies that have the resources and knowledge to develop and control advanced AI systems.[42] The power imbalance between these companies and other actors in the field, such as academia or the public sector, is being entrenched as such companies are able to dominate what has been described as 'the three key ingredients of AI research: computing power, large datasets and highly skilled researchers'.[43] Such dominant actors are able to not only shape the direction in which AI develops but also play a leading role in shaping the regulatory measures that are contemplated by governments and institutions.[44] In this volume, Laukyte argues that AI technologies are not merely the subjects of governance, but they can also be used as tools for governance—tools that are in the hands of private actors that do not have the democratic legitimacy to exercise such power. Carretta goes further and argues that the accumulation of personal data and algorithmic decision-making capacities in the hands of private corporate actors not only undermines the fundamental rights of individual data subjects but can also undermine the rule of law as it can leave individuals vulnerable to arbitrary decisions over which they have no control. In this new regulatory landscape, the private corporations that develop and deploy AI are

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[41] Taeihagh (2021), p. 137.

[42] See for instance Murgia (2023), Mahendra (2023).

[43] Ahmed et al. (2023), pp. 884–886.

[44] See David (2023).

given significant responsibilities to ensure not only that the AI is safe and in conformity with regulatory demands but also that it protects fundamental rights. Viljanen develops the legal theoretical implications of this new governance landscape. He calls this the meta-horizontal effect of fundamental rights, whereby private actors are obliged to identify potential fundamental rights impacts and to take appropriate measures to mitigate these through the development of internal processes.

Another example of the implications of AI governance that challenge current legal theoretical conceptions is presented in Carretta's piece, which identifies a need to re-conceptualise our understanding of the principle of the rule of law in light of the super-dominant position in both data collection and technology development that large private corporations are creating for themselves.

This blurring of the distinction between public and private, regulated and regulator, which governance approaches that are emerging to address AI risks entail, is a theme that recurs in several of the contributions. Colonna zooms in on a very specific aspect of the proposed EU AI Act—the way in which AI research may be exempted from the regulatory burdens that companies engaged in the development of AI technologies might otherwise face. Colonna highlights how *private* actors, pursuing private ends, will collaborate with public institutions in order to reap the benefits from exemptions that originally were designed to protect *public* goods – innovation, the development of socially or environmentally beneficial AI or simply the expansion of human knowledge.

4   Engaging with the Governance Challenge: This Volume's Contribution

As Geoffrey Hinton warned, we need to understand the implications for our societies of developing advanced AI if we are to have a chance of being able to control it. In this volume, we have collected 11 contributions to the ongoing process of collectively trying to understand AI governance better.

The volume is divided into three parts. Part I takes a closer look at the proposed AI Act and consists of two chapters written by Beatrice Schütte and Liane Colonna. In her chapter, Schütte analyses the EU's proposed AI Regulation and examines how it will interact with other EU regulatory frameworks, in particular the GDPR, proposed data governance measures and the product liability regime. Schütte identifies significant gaps and inconsistencies between these different regulatory frameworks and the conceptual and definitional apparatus that they rely on and calls for greater coherence.

Colonna's contribution is focussed on the proposed AI Act's research exemption. This is an important provision for researchers, both in industry and academia, but one that has not received much attention from legal scholars. Colonna points out how the provisions in the AI Act may allow the blurring of the distinction between

public and private actors and allow private actors to create mechanisms for regulatory arbitrage that would allow them to circumvent the obligations that the AI Act would impose on them.

In Part II of the volume, the authors discuss challenges to AI governance from a system perspective rather than challenges to AI governance brought by the introduction of AI technology in fields already regulated—which is the focus of Part III. The four contributions that make up Part II are written by Migle Laukyte, Mika Viljanen, Silvia Carretta and Claes Granmar. Laukyte shows how the current human rights framework may be insufficient to address the challenges posed by AI and in her contribution presents ideas on how to bring existing human rights provisions up to date to ensure that the development and use of advanced AI technology under the control of governments, private companies or its own agency continues to respect these fundamental values.

In his contribution, Viljanen also focuses on human rights protection but highlights how the proposed AI Act is an example of an emerging EU regulatory practice that transforms the nature of fundamental rights. They are no longer subjective rights that individuals can invoke against the state or against each other. Nor are they mere programmatic instruments that need to be implemented by additional legislative measures. Instead, fundamental rights are given, what Viljanen calls, a 'meta-horizontal effect' by transforming them into obligations imposed on (primarily) private actors, which must incorporate them into their internal decision-making processes.

Silvia Carretta's contribution to the volume invites us to rethink our conception of the rule of law in light of societal changes such as the emergence of powerful private actors that hold super-dominant positions like data collectors and technology developers. Although traditionally associated with the relation between the state and the individual, the concept of the rule of law may be given a new meaning in the age where personal data are a commodity.

Concluding Part II, Claes Granmar's contribution highlights several challenges brought by the integration of artificial intelligence in human life but focusses on the particular phenomenon of automated decision-making and the potential conflict between the economic interests behind such decision-making and the right expressed in Article 22 of the EU's GDPR not to be subjected to automated decisions. As such, Granmar's contribution also works as a bridge to Part III of the volume, where we revisit the challenges to AI governance brought by automated decision-making in several contributions.

The five contributions that make up Part III span a wide range of legal issues. All of the contributions deal with disruptions to various practices caused by the introduction of new AI technology. The first contribution of Part III is written by Jason D. Schloetzer and Kyoko Yoshinaga. They examine the use of algorithmic hiring systems from the perspectives of both organisations and policymakers in Japan and the United States. Dr. Schloetzer and Ms Yoshinaga examine these systems primarily from the perspectives of data protection and the potential reproduction of selection bias and present recommendations to mitigate risks associated with both the development and use of such systems.

The second contribution to Part III is written by Pin Lean Lau, and in her chapter, she focusses on biases encountered by women in the context of AI-driven healthcare. Lau notes that data and algorithms are not neutral entities but inevitably carry biases and subjective perspectives that affect their creators and the societal and historical context in which they were developed. Lau highlights the urgent need to develop strategies to develop gender health equality in the face of rapidly advancing AI technologies. The proposed strategies are multifaceted and include data feminism, enhanced regulatory frameworks and strengthened informed consent practices.

Petra Müllerová's contribution also draws on examples from the healthcare sector, as it is focused on the role of artificial intelligence in mental health applications. Müllerová's contribution confronts the thorny problem of liability and the proposed changes to the EU's product liability regime in the context of AI applications. As she notes, the specific nature of AI makes it difficult to determine causation between the harm suffered and any defect in the AI system.

The fourth chapter in Part III is written by Isabel Gallego Córcoles, and in it, Córcoles examines how public procurement rules in the EU may or may not need to be adapted to the specific situation of procuring AI systems. Based on the analysis of a number of soft law instruments, she proposes a series of guidelines for the procurement of AI systems.

In the final chapter of Part III, and thus the volume, Markus Naarttijärvi returns to the question of the interaction of the different EU regulatory frameworks highlighted by Schütte in the first chapter. Naarttijärvi shows how the EU data protection legislation can complement the proposed AI Act in providing meaningful limits to the use of AI technology in law enforcement. Nonetheless, he points out that the conflation of the concept of effectiveness and efficiency in the application of the principle of necessity, which has been in evidence in the case law of the CJEU, may weaken the protection of fundamental rights. His conclusion, that the real potential of the AI Act and other regulatory measures lies in the evolving interpretation and application of fundamental principles such as privacy and human dignity, may also serve as a conclusion for this volume – law will play a key role in the successful governance of AI, but it will require us to engage with what is truly at stake for individual human beings and human communities when we share our world with AI.

4.1 Conclusion

As the leading AI researcher Stuart Russell put it in his influential book *Human Compatible*, the development of AI might require us to confront what could be 'the most important question facing humanity'.[45] He was considering the possibility of the emergence of human- or super-human-level artificial intelligence. We may never develop such systems. Nonetheless, today there are a few who would not agree that

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[45]Russell (2019).

artificial intelligence (AI) is set to be 'one of the most transformative forces of our time, and is bound to alter the fabric of society'.[46]

The challenge of governing the development and deployment of such systems, and of navigating the transformations that these technologies will bring about, is a key challenge facing humanity. This volume of the Yearbook of Socio-Economic Constitutions has brought together legal scholars who tried to think through the role that law plays and can play in the governance of AI.

References

Agrawal A, Gans J, Goldfarb A (2018) Prediction machines: the simple economics of artificial intelligence. Harvard Business Review Press

Ahmed N et al (2023) The growing influence of industry in AI research. Science 379:884–886

Araujo L, Harrison D (2001) Technological trajectories and path dependence. Technol Anal Strategic Manage 14:5

Brazeal G (2023) Markets as legal constructions. Univ Cincinnati Law Rev. 91595–679

Butcher J, Beridze I (2019) What is the state of artificial intelligence governance globally? RUSI J 164:88–96

Chesterman S (2020) Artificial intelligence and the problem of autonomy. Notre Dame J Emerging Technol 2:210

Chui M et al (2023) The State of AI in 2023: Generative AI's Breakout Year. MacKinsley Consultancy, 1 August 2023, Available at: https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-in-2023-generative-ais-breakout-year#research

Dafoe A (2018) AI governance: a research Agenda. Future of Humanity Institute. Available at: https://www.fhi.ox.ac.uk/wp-content/uploads/GovAI-Agenda.pdf

David E (2023) AI regulation is taking shape, but startups are being left out. The Verge, 8 August 2023. https://www.theverge.com/2023/5/19/23728174/ai-regulation-senate-hearings-regulatory-capture-laws

Defoe A (2018) Governance of AI: A Research Agenda. FHI Working Paper. Available at: https://cdn.governance.ai/GovAI-Research-Agenda.pdf

Erman E, Furendal M (2022) The global governance of artificial intelligence: some normative concerns. Moral Philosophy Polit 9:267–291

Floridi L (2018) Soft ethics, the governance of the digital and the general data protection regulation. Phil.Trans.R.Soc. A376

Gill-Pedro E (2021) The most important legislation facing humanity? The proposed EU regulation on artificial intelligence. Nordic J Eur Law 4

Harari YN (2023) AI and the Future of Humanity. Frontiers Forum, Keynote speech delivered 29 April 2023, Available at: https://www.youtube.com/watch?v=LWiM-LuRe6w&t=2s

High Level Expert Group (2018) Draft ethics guidelines for trustworthy AI. European Commission, p i

Hu K (2023) ChatGPT sets record for fastest-growing user base Reuters, 2 February 2023. Available at: https://www.reuters.com/technology/chatgpt-sets-record-fastest-growing-user-base-analyst-note-2023-02-01/

Kharpal A (2017) A.I. is in its 'infancy' and it's too early to regulate it, Intel CEO Brian Krzanich says. CNBC TechTransformers 7 November 2017

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[46]High Level Expert Group (2018), p. i.

Lessig L (1999) Code and other laws of cyberspace. Basic Books

Mahendra S (2023) Dangers of AI – Concentration of Power. AIPlus Info, 31 August 2023

Murgia M (2023) Risk of 'industrial capture' looms over AI revolution. Financial Times 23 March 2023

Posner E (2002) Law and social norms. Harvard University Press

Reed C (2018) How should we regulate artificial intelligence? Philosophical Transactions of the Royal Society

Russell S (2019) Human compatible: artificial intelligence and the problem of control. Viking

Sideco F (2023) The Dawn of Creation: 2023 Rise of Generative AI. Forbes, 12 April 2023. Available at: https://www.forbes.com/sites/tiriasresearch/2023/04/12/the-dawn-of-creation-2023-rise-of-generative-ai/?sh=6f29ac851a7f

Smuha N (2021) From a 'race to AI' to a 'race to AI regulation': regulatory competition for artificial intelligence. Law Innov Technol 13:57–84

Stone P et al (2016) Artificial Intelligence and Life in 2030. In: One hundred year study on artificial intelligence: Report of the 2015-2016 Study Panel. Stanford University, Stanford

Straub J (2017) Does regulating AI save humanity or just stifle innovation? The Conversation

Taeihagh A (2021) Governance of artificial intelligence. Policy Soc 40:137–157

Zheng J, Zhang S (2023) China Wants to Regulate its AI Sector Without Crushing it. Time Magazine 14 August 2023, Available at: https://time.com/6304831/china-ai-regulations/

Part I

AI Regulation in the EU: The Future Interplay Between Frameworks

Béatrice Schütte

Contents

Abstract The purpose of this contribution is to analyse existing and proposed AI regulations and to identify the critical implications of their future interplay, that is, how the regulatory framework as a whole will function in the future. Given the abundance of legislation, it is essential that all measures dovetail into each other; otherwise, legal uncertainty, fragmentation, and regulatory gaps would be inevitable.

B. Schütte (✉)
University of Helsinki, Faculty of Law, Legal Tech Lab, Helsinki, Finland

University of Lapland, Faculty of Law, Rovaniemi, Finland

Information Society Law Center (ISLC), University of Milan, Milan, Italy
e-mail: beatrice.schutte@helsinki.fi

1 Introduction

The technological development of artificial intelligence (AI) is advancing at an ever-faster pace, and it influences almost every aspect of our lives. Wearable devices track whether we get enough sleep, facial recognition features integrated in CCTV cameras can identify offenders and our smartphones are the gateway to the answer to almost any question we might have. While these tools certainly make many tasks easier, there are also significant inherent risks for fundamental rights. Many existing laws date from the pre-digital era and are thus often ill-suited to address these risks and to remedy harm if these risks materialise. Against this background, the regulation of AI has been on the agenda of the EU institutions for some time now. They have acknowledged the potential benefits of digitalisation in addressing societal challenges that are related to climate change, health care, education, and transport.[1]

In the last few years there have been several proposals for laws that tackle the challenges that the emergence of AI poses. These proposals should not be examined in isolation. It is important to focus on general matters and to scrutinise the fit between instruments. This is so because an AI system can be subject to multiple legal regimes, such as the General Data Protection Regulation (GDPR),[2] the Artificial Intelligence Act (AI Act)[3] and the Digital Services Act (DSA).[4] Therefore, it is important that the terms that are used in them have the same meaning or that different usages be explained clearly. It is equally crucial to ensure that the applicable legal rules are not contradictory.

The purpose of this contribution is to analyse existing and proposed AI regulations and to identify the critical implications of their future interplay, that is, how the regulatory framework as a whole will function in the future. Given the abundance of legislation, it is essential that all measures dovetail into each other; otherwise, legal uncertainty, fragmentation, and regulatory gaps would be inevitable.

The foregoing propositions accord with the 'Better Regulation' system that the Commission and other EU institutions have adopted. Its aim is to ensure that the quality of legislation is high and that it is accessible and transparent.[5] The Commission has stated its intention is to establish an 'ecosystem of excellence' and an

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[1] Georgieva et al. (2022), p. 697.

[2] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation), OJ L 119, 4.5.2016, pp. 1–88.

[3] Proposal for a Regulation of the European Parliament and of the Council laying down harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) COM(2021) 206 final.

[4] Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services and amending Directive 2000/31/EC (Digital Services Act), OJ L 277, 27.10.2022, pp. 1–102.

[5] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 'Better regulation: Joining forces to make better law' COM(2021) 219 final, pp. 3, 6.

'ecosystem of trust' for AI.[6] The pursuit of excellence and trust should not be restricted to technological matters; it is also important that the legislation that governs new technologies be optimal. In general, effective governance can mitigate the risks that are associated with AI. Those risks, as indicated above, may be related to fundamental rights, including the ones that pertain to personal data, privacy protection, and non-discrimination. Safety and the effective functioning of the liability regime are also important desiderata.[7] In addition, many AI systems are opaque, which causes information asymmetries between their developers and other stakeholders such as consumers, authorities and businesses.[8] Therefore, one of the main goals of contemporary EU policy is to implement trustworthy AI and to avoid legal fragmentation across Member States. It is only in this way that developers, public authorities, companies or consumers, and all other affected stakeholders can reap the benefits of legal certainty.[9]

This contribution examines a selection of frameworks in detail. Section 2 points to some of the challenges for the regulation of AI. Section 3 overviews the AI Act, which can be considered the centrepiece of contemporary regulation of technology. Section 4 presents other relevant pieces of legislation in this domain. Section 5 highlights the critical features of interplay between these frameworks.

2 The Challenges of Regulating AI

It is difficult to futureproof regulations on AI and other rapidly developing technologies. Significant developments can necessitate amendments to existing legislation or delay the development of new laws. These tendencies were in evidence after the launch of ChatGPT by Open AI in 2022. That launch prompted EU regulators to engage in a thorough reassessment of the risk that generative AI poses and of its regulation in the AI Act.[10] An additional obstacle is the fact that currently, the law in this domain is in flux. Several regulations and directives are work in progress and constantly being amended. If corresponding amendments in related legislative proposals are omitted, this will lead to confusion and legal uncertainty.

In the AI race, the aim of the EU is to achieve digital sovereignty, regardless of the difficulties of competing with technological giants that operate outside of the EU.[11] The notion of digital sovereignty is relatively new, and the term has no official

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[6]European Commission 'White Paper On Artificial Intelligence - A European approach to excellence and trust', COM(2020) 65 final, p. 3. (Hereafter: White Paper).

[7]Wirtz et al. (2022), p. 2; White Paper, pp. 10–13.

[8]Gasser and Almeida (2017), p. 58.

[9]White Paper, p. 3.

[10]See, e.g. Volpicelli (2023).

[11]Stix (2022), p. 11.

definition.[12] The German Ministry for Economic Affairs and Energy formulated a definition when presenting its 'GAIA-X' project, which has the development of a strong, competitive, secure, and trustworthy data infrastructure for Europe as its purpose. In that presentation, digital sovereignty was defined as follows:

> the 'possibility of independent self-determination by the state and by organisations' with regard to the 'use and structuring of digital systems themselves, the data produced and stored in them, and the processes depicted as a result'.[13]

In short, the concept of digital sovereignty refers to 'Europe's ability to act independently in the digital world'.[14] The pursuit of digital sovereignty is a consequence of the growing concerns about the economic and social influence of non-EU technology companies, which makes it difficult for EU citizens to control their personal data, for EU high-tech companies to grow, and for the EU and its Member States to enforce their laws.[15] Digital technologies and competition in the technological industries are becoming increasingly important for internal affairs.[16] In the pursuit of a comprehensive and integrated approach to AI governance, all efforts must be directed towards the regulatory landscape. If the contemplated ecosystem of excellence materialises, the emergence of an infrastructure for the development, deployment, and use of AI will increase ownership of the technology. Such a development would also make it possible shape AI through regulation, which will make the EU less dependent on external actors.[17]

There are high hopes that AI can contribute to solutions to the gravest problems that humanity faces. Those who entertain such hopes have been said to disregard the human factor in both origins of the problems in question and the prospective solutions. The underlying expectation, the argument runs, is that technology alone will tackle climate change, pandemics, and the likes. However, the influence of AI on societal structures is often underestimated, particularly in the context of Big Data.[18] At the same time, certain properties that are attributed to AI, such as opacity and complexity as well as its supposedly inherent biases and fluidity are said to pose difficulties for legal certainty, transparency, explicability, and equal treatment under the law. These clashes can lead to harm, undermine trust, and hinder the development and use of AI.[19] Nonetheless, the functioning of legal measures has been challenged by technical development for centuries.[20]

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[12] Celeste (2021), pp. 216, 217.

[13] Federal Ministry for Economic Affairs and Energy (BMWi) (2019), p. 7.

[14] Madiega (2020), p. 1.

[15] Ibid.

[16] Monsees and Lambach (2022), p. 377.

[17] Stix (2022), p. 11.

[18] Ruschemeier (2023), p. 362.

[19] Ibid., p. 363.

[20] Ibid., p. 362.

The regulation of technology also poses problems of scope. This is so due to the variety of use-cases for AI and the wide array of capabilities that AI systems possess. The impact of an AI system on society or particular individuals can vary dramatically, depending on its purpose. An AI-enabled system that a law-firm uses to manage appointments cannot be compared to AI that is used for autonomous driving or for facial (or emotional) recognition technologies. AI systems that can interact with their physical environments may even cause injuries.[21] Therefore, one-size-fits-all-regulation is hardly feasible or desirable—over- and under-regulation are obvious risks.[22]

A coherent framework can also be important for achieving first-mover advantage in what Smuha called the 'race to AI regulation'.[23] If the EU does end up a first-mover, the main pieces of legislation are likely to exhibit the 'Brussels Effect', that is, they are likely to have significant de facto or de jure influence in jurisdictions outside of the EU.[24] The EU has a long track record in passing on emerging technologies, the GDPR being a paradigmatic example.[25] When a regulatory regime can balance the needs and interests of stakeholders and provide legal certainty, it is likely to also engender trust in the technology that is being regulated and thus to facilitate its uptake.[26] If the framework as a whole lacks coherence, fragmentation and legal uncertainties are likely to manifest across the globe. The worst-case consequences include a slower uptake of AI and new technologies as well as the abuse of loopholes on the part of powerful economic or state actors that find that it is in their interest to undermine Fundamental Rights.

The regulatory efforts of the Commission are thus directed at enabling innovation while increasing trust and designing a regulatory framework that is 'flexible enough to promote innovation while ensuring high levels of protection and safety' for the citizens of the EU.[27]

3 The AI Act as the Heart of the Regulatory Framework

The proposal for an AI Act that the Commission issued in April 2021 is the first attempt to regulate AI comprehensively.[28] It is one of the centrepieces of regulation of new technologies. So much is in evidence from the fact that proposals for laws

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[21] See also, e.g. Schuett (2023), pp. 3, 14, 15, 16.

[22] See, e.g. Wheeler (2023).

[23] Smuha (2021), pp. 59, 60.

[24] The term 'Brussels Effect' describes 'the EU's unilateral power to regulate global markets', meaning that EU legislation influences policies and laws in third countries (Bradford 2020).

[25] Kolt (2023), p. 24.

[26] Smuha (2021), p. 59.

[27] Stuurman and Lachaud (2022), p. 2.

[28] See, e.g. Dempsey et al. (2022), p. 8.

that have been issued after April 2021 refer to the AI Act for the definitions of important terms.[29] However, the AI Act remains to be aligned with existing legislation such as the GDPR.

The AI Act is a form of specialised product safety legislation.[30] It accords with the product safety *acquis* from the New Legislative Framework (NLF).[31] The NLF posits that manufacturers must complete pre-marketing controls to ensure that their products are safe and perform well. These controls take the form of conformity assessments and the exact requirements for these assessments are prescribed by law. When a product passes the conformity assessment, a CE marking may be affixed to it, and it may move freely within the Internal Market thereafter. One of the assumptions of the NLF is that the manufacturer is best placed to complete this assessment because their employees are familiar with the design and the making of the product.[32]

The AI Act aims to ensure that only safe AI systems that users can trust are placed on the market. Since there are no means of guaranteeing that all AI systems are completely safe *ex ante*, the proposal also includes provisions for *ex post* market surveillance.[33] The Explanatory Memorandum to the AI Act implies that the latter is meant to be a form of product safety legislation.[34] In addition, Article 6 of the AI Act, which is on risk classification, refers to AI systems as safety components of products or AI systems being the product.

Is the AI Act genuinely a piece of specialised product safety legislation? The Commission's websites on product safety focus on consumer protection and health and safety. The same is true of the EU legislation on product safety.[35] Conversely, Recital (1) to the AI Act mentions health, safety and fundamental rights.[36] Presumably, these objectives take precedence over product safety or consumer protection. A similar conclusion can be drawn from the newly introduced Recital (2) (c), which posits that AI systems in the EU are subject to product safety legislation. This

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[29] See, e.g. Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence (AI Liability Directive) COM(2022) 496 final, Article 2.

[30] See also, e.g. Kop (2021), p. 2.

[31] Mazzini and Scalzo (2022), p. 27.

[32] Veale and Zuiderveen Borgesius (2021), p. 102.

[33] Mazzini and Scalzo (2022), p. 27.

[34] See AI Act, Explanatory Memorandum, p. 13.

[35] See, e.g. European Commission, 'What is the General Product Safety Regulation?' <https://commission.europa.eu/business-economy-euro/product-safety-and-requirements/product-safety/general-product-safety-regulation_en>; Directive 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on general product safety OJ L 11, 15.1.2002, pp. 4–17, Recitals 1, 3, 4; Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC, OJ L 157, 9.6.2006, pp. 24–86, Recital 3.

[36] European Parliament, Artificial Intelligence Act, Amendments adopted by the European Parliament on 14 June 2023 on the proposal for a regulation of the European Parliament and of the Council on laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts (COM(2021)0206 – C9-0146/2021 – 2021/0106(COD)).

formulation might lead to the conclusion that the AI Act is not a piece of product safety legislation. Clarifying the exact classification of the Act would be desirable.

The starting point of any discussion of the regulation of AI should be its legal definition. In the latest version of the AI Act, which was adopted by the European Parliament (EP) in June 2023, an AI system is defined as follows:

> a machine-based system that is designed to operate with varying levels of autonomy and that can, for explicit or implicit objectives, generate outputs such as predictions, recommendations, or decisions, that influence physical or virtual environments.[37]

Recital (6) sets out that the definition of AI must be clear, and that it should accord with the definitions that have been adopted by international organisations that are involved with the matter. Such consistency would foster legal certainty and avoid contradictions between the AI Act and future international instruments. At the same time, the definition should be capable of accommodating rapid technological developments. It should refer to key characteristics such as learning ability, in order to enable AI to be distinguished from simpler software systems.[38] The contemporary definition reflects the criticism of the first definition of an AI system, which was part of the proposal that was issued in April 2021.[39] It was allegedly too broad and covered almost every computer program.[40] The definition adopted in the AI Act version adopted by the EP in June 2023 is similar to that presented by the OECD, which states that

> an AI system is a machine-based system that is capable of influencing the environment by producing an output (predictions, recommendations or decisions) for a given set of objectives. It uses machine and/or human-based data and inputs to (i) perceive real and/or virtual environments; (ii) abstract these perceptions into models through analysis in an automated manner (e.g., with machine learning), or manually; and (iii) use model inference to formulate options for outcomes. AI systems are designed to operate with varying levels of autonomy.[41]

The AI Act is underpinned by a risk-based approach, which is consistent with the earlier policy discussions that were described in the White Paper.[42] Devices or programs that are defined as AI are allocated to one of four different risk levels: unacceptable risk, high-risk, low risk and minimal risk. AI systems that pose unacceptable risks will be banned. Conversely, minimal-risk AI will not be subject to any specific regulation. Low-risk AI will be subject to certain transparency obligations.[43] The AI Act focuses chiefly on high-risk AI systems, and much of the draft is dedicated to setting out obligations that apply to them as well as to related

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[37] Ibid.

[38] Ibid.

[39] See AI Act, Article 3 (1), Annex I.

[40] Ebers et al. (2021), p. 590.

[41] See OECD AI Principles Overview, available at <https://oecd.ai/en/ai-principles>.

[42] See, e.g. White Paper, p. 17.

[43] Ebers (2021), p. 335.

administrative matters.[44] The risk-based approach prioritises centralisation because it is the European legislator that determines which AI systems are to be classified as high-risk. The goal is to establish thresholds of risk to health, safety, and fundamental rights. Exceeding those thresholds will trigger regulatory (or legislative) intervention.[45]

The AI Act stipulates that high-risk AI systems must meet specific requirements. These requirements pertain to risk management (Article 9), data and data governance (Article 10), drawing up technical documentation (Article 11), record-keeping (Article 12), transparency (Article 13), human oversight (Article 14) and accuracy, robustness and cybersecurity (Article 15). The AI Act does not elaborate on the information that must be provided to meet the transparency requirement and does not indicate whether users should be capable of interpreting the output of the systems properly.[46] The requirement of human oversight has been criticised for lacking feasibility.[47] This criticism may be justified in relation for highly complex and autonomous systems, which to date do not exist. Throughout the legislative process concerning the AI Act, it seems to have been taken into account, as the version adopted in June 2023 by the EP presents a slightly more elaborate version of Article 14: the provision now sets out more precise requirements as to the persons in charge of the human oversight, such as an adequate degree of AI literacy in relation to the AI system in question. However, the AI Act still is not very precise in defining when and how human oversight is required and what makes it effective and meaningful.[48]

The requirements for high-risk AI systems can shape liability: failure to comply with them can be indicative of fault. The AI Act has been criticised for failing to address important issues, such as social media or private enforcement, sufficiently.[49] Some such matters are expected to be regulated by the implementing measures that should be issued in the future. Technical standards are yet to be established. Compliance with these standards will result in a presumption of conformity. More problematically, standardisation will be outsourced to private organisations. Although those organisations are not mentioned in the proposal, they might be decisive for the operation of the law in practice.[50] Reliance on harmonised standards is a core feature of the NLF. Standards might contribute to the establishment of uniform principles for the implementation of legal requirements and ethical values. There are also hopes that standards can foster the transfer of technologies from research settings to real life and that they can ensure the interoperability of AI systems.[51] Critics have suggested that it will be very difficult to develop effective

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[44] See also, e.g. De Cooman (2022), p. 52.

[45] Gellert (2021), p. 19.

[46] See also, e.g. Varošanec (2022), p. 103.

[47] Ebers et al. (2021), pp. 596, 597.

[48] See also, e.g. Laux (2023), pp. 5, 6.

[49] See, in more detail, Sect. 5.1.

[50] Kolt (2023), p. 25.

[51] Ebers (2021), p. 331.

standards, particularly for highly complex systems such as neural networks, which may behave unpredictably.[52] Yet, these highly complex systems are in general difficult to regulate, also in view of future technological developments. More problematic is the fact that private organisations will be given significant power in shaping the law. Even though standards are not legally binding, they can have significant power in defining, for instance, product safety or compatibility.[53]

4   Other Relevant Pieces of Legislation

This section examines a selection of legislative measures that are relevant to the regulation of AI will be examined. The fields to which those pieces of legislation pertain are data, safety, and liability.

4.1   Data

4.1.1   The GDPR

The GDPR entered into force in May 2018. AI is not explicitly mentioned in the GDPR, but many of the provisions of the latter are relevant to the former.[54] Recital 15 states that, in order to protect natural persons, the Regulation should be technology-neutral. The GDPR applies when personal data is processed by automated means wholly or partially and to the non-automated processing of data other than by automated means of personal data that forms or is intended to form part of a filing system.[55] The focus of the Regulation is on the effects of processing data and on the attendant impact on risks for fundamental rights, not on the technologies that are used for data processing.[56] The GDPR applies to the development of AI systems and to their use for analysis and decision-making about individuals.[57]

Article 4 (1) GDPR defines personal data as follows:

> any information relating to an identified or identifiable natural person ('data subject'); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.

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[52] Pouget (2023).

[53] See, e.g. Rühlig (2022).

[54] Sartor and Lagioia (2020), p. II.

[55] See Article 2 (1) GDPR.

[56] Mitrou (2018), p. 26.

[57] Ibid., p. 27.