

WHAT IS ARTIFICIAL INTELLIGENCE & WHY IS IT SO HARD TO REGULATE?

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From the wondrous creations of Hephaestus in Homer’s Iliad, to the malevolence of HAL 9000 in *2001: A Space Odyssey*, artificial intelligence (AI) has appeared throughout the ages. The idea of imbuing an artificial construct with the intelligence of humanity has existed since time immemorial. As technology continues to advance, this onetime fantasy is becoming an ever more imminent reality, forcing lawmakers to grapple with challenging new ideas. In a time where prominent members of the technology industry are already voicing concerns over AI,¹ the legal profession is bereft of almost any explicit guidance regarding this subject. Currently, substantive AI policy is hindered by its many varying definitions, the uniqueness of its supply chain, and its potential as a finished product.

DEFINING AI

One of the first hurdles to regulating AI is the ambiguity surrounding what it actually is. Unfortunately, no widely accepted definition for AI currently exists.² Historically, the idea of AI has evolved as the field itself has matured.

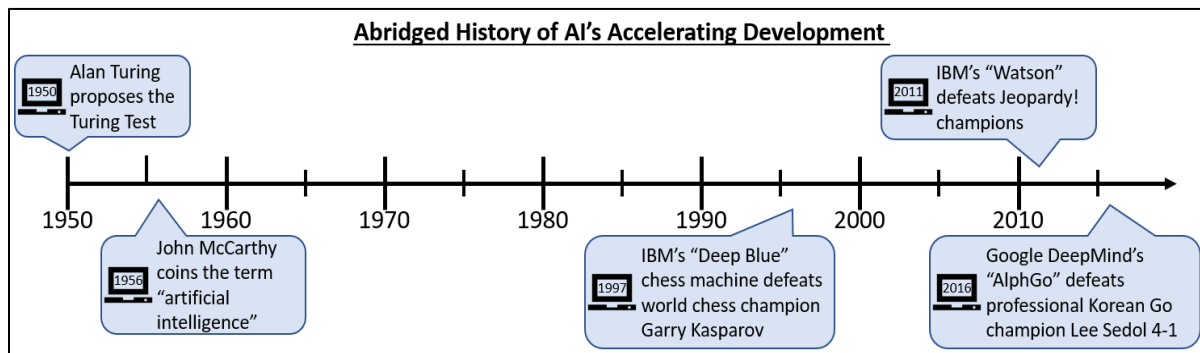


Figure 1

¹ See, e.g., Stuart Russell, Daniel Dewey & Max Tegmark, *Research Priorities for Robust and Beneficial Artificial Intelligence*, FUTURE OF LIFE INST. (2015), <https://futureoflife.org/ai-open-letter/?cn-reloaded=1>; Peter Holley, *Bill Gates on Dangers of Artificial Intelligence: "I Don't Understand Why Some People are Not Concerned"*, WASH. POST (Jan. 29, 2015), https://www.washingtonpost.com/news/the-switch/wp/2015/01/28/bill-gates-on-dangers-of-artificial-intelligence-dont-understand-why-some-people-are-not-concerned/?utm_term=.9a75a9a3949e.

² See John McCarthy, *What is Artificial Intelligence*, STANFORD (last visited Oct. 25, 2018), <http://www-formal.stanford.edu/jmc/whatisai.pdf>.

Alan Turing, creator of the eponymous “Turing Test”, wrote on the subject of “computing machinery and intelligence” before the phrase AI had been coined. He focused not on the idea of whether a machine could think, which he considered “too meaningless to deserve discussion,”³ but whether it could replicate the external manifestations of thinking.⁴ His proposed “imitation game,” now widely referred to as the Turing Test, was meant to test this question by having a computer attempt to convince a human interrogator that it is also human.⁵

John McCarthy, the late computer scientist credited with coining the term “artificial intelligence,” defined AI as “the science and engineering of making intelligent machines, especially intelligent computer programs.”⁶ However, he freely opined that “intelligence” in this context has no solid definition because “we cannot yet characterize in general what kinds of computational procedures we want to call intelligent.”⁷

These two examples help to showcase the ambiguity surrounding any attempt at defining AI. Should the focus of regulation be on the internal mechanisms creating the intelligence, in a similar vein to McCarthy’s definition, or, instead, on outcomes driven by the AI, a la Turing? Further complicating things is the fact that these two potential definitions are hardly binary, nor do they even represent the spectrum that AI could theoretically cover. Without a clearly bounded definition, attempts at regulation would ostensibly be very difficult. Using more circular language: without a definition of what is being regulated, the regulator is hard pressed to know what it is regulating.

³ A.M. Turing, *Computing Machinery and Intelligence*, 59 MIND 433, 442 (1950).

⁴ *Id.* at 433-35.

⁵ *Id.*

⁶ McCarthy, *supra* note 2.

⁷ *Id.*

DISTINGUISHING AI

While a clear definition is decidedly important, it alone does not preclude regulation. Two people describing the components of an automobile may not agree on its key aspects, but they could still find enough common ground to understand they were discussing the same mechanism. Why, then, is AI so different? To answer this question, one has to look at both the potential of AI as a product and at its supply chain. These problems, identified and discussed in considerable depth in *Regulating Artificial Intelligence Systems: Risks, Challenges, Competencies, and Strategies*,⁸ are summarized in the figure below.

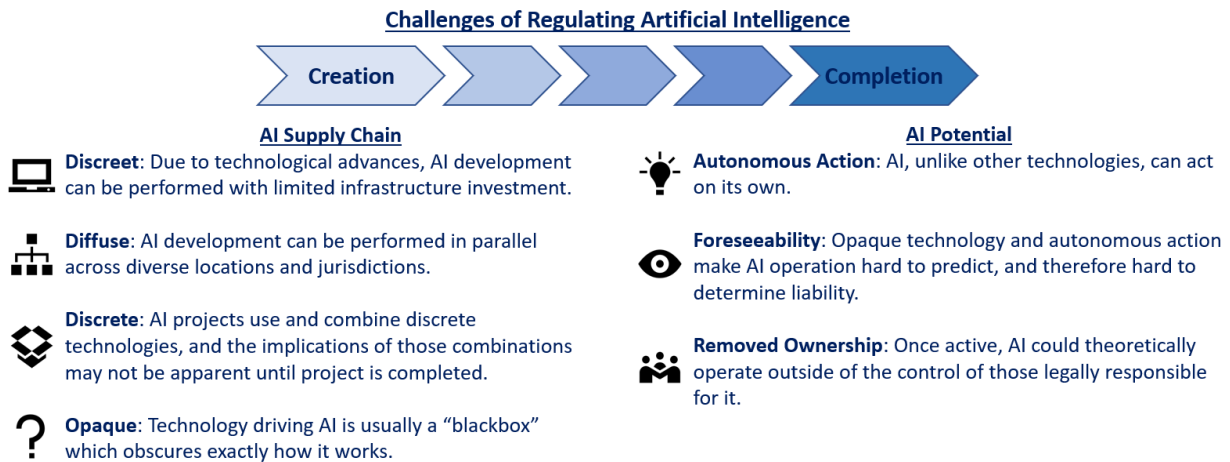


Figure 2

Further expounding on the differences between AI and “public risks” of past centuries, Scherer explains:

The sources of public risk that characterized the twentieth century—such as nuclear technology, mass-produced consumer goods, industrial-scale pollution, and the production of large quantities of toxic substances—required substantial infrastructure investments. This simplified the regulatory process. The high cost of building the necessary facilities, purchasing the necessary equipment, and hiring the necessary labor meant that large corporations were the only non-governmental entities capable of generating most sources of public risk. Moreover, the individuals responsible for installing, operating, and maintaining the infrastructure typically had to be at the physical site where the infrastructure was located.

⁸ Matthew U. Scherer, *Regulating Artificial Intelligence Systems: Risks, Challenges, Competencies, and Strategies*, 29 Harv. J.L. & Tech. 353 (2016).

The physical visibility of the infrastructure—and of the people needed to operate it—made it extremely unlikely that public risks could be generated clandestinely. Regulators thus had little difficulty determining the "who" and "where" of potential sources of public risk.⁹

AI does not necessarily require anything close to the level of investment that past “public risks” did,¹⁰ making it harder for regulators to construct targeted regulations.

Additionally, the idea of autonomously acting intelligence, so popular in media, implies legitimate barriers to the idea of foreseeability. If someone is harmed by AI—assuming the intelligence itself does not have legal personality, of course—that person may be left with no clear path to compensation. Barring the implementation of strict liability for AI, a court would need to decide if the harm caused by the machine, acting autonomously, was foreseeable by its coders, trainers, owners, users, or other potentially culpable parties.¹¹ Once liability is established as existing, the court then needs to determine who was liable. Returning to the idea of AI’s supply chain, courts would need to determine how to address apportioning liability across parties in cases where the development was discreet, diffuse, discrete, and opaque.¹² As an example of the potential harm AI can cause, in 2016 a ProPublica investigation concluded that the data driving an AI system, used by judges to predict the recidivism of convicted criminals, appeared to be biased against minorities.¹³ Discoveries like this highlight the nuances of AI regulation: no party appears to have set out to create a biased system, but now that one exists it has to be acknowledged and a remedy must be identified.

⁹ *Id.* at 369.

¹⁰ John O. McGinnis, *Accelerating AI*, 104 NW. U. L. REV. 1253, 1262 (2010).

¹¹ RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 29 (AM. LAW INST. 2010).

¹² *See id.* § 22; *see also* Scherer, *supra* note 8.

¹³ Julia Angwin, et al., *Machine Bias*, PROPUBLICA (May 23, 2016), <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>; Joy Buolamwini & Timnit Gebru, *Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification*, 81 PROC. OF MACHINE LEARNING RES. 1 (2018), <http://proceedings.mlr.press/v81/buolamwini18a/buolamwini18a.pdf>.

CURRENT AI REGULATIONS

In the United States, the hurdles of defining and regulating AI have yet to be tackled in any meaningful way. Abroad, multiple nations have begun to slowly acknowledge the need for substantive regulation and have taken the first steps toward that end.

In March of 2018 the European Union (EU) published a communication on “Artificial Intelligence for Europe.”¹⁴ This document focused primarily on the economic benefits of embracing AI and the need for cooperation across EU members, but also mentioned the importance of “ensuring an appropriate ethical and legal framework” when developing AI.¹⁵ Unfortunately for nations looking to model their AI laws after the EU, currently the sole cornerstone of that AI legal framework relies on the EU’s General Data Protection Regulation (GDPR).¹⁶ While the GDPR is an incredibly sweeping regulation concerning the protection of personal data (potentially the broadest in the world) and has ramifications for AI technology, it is not designed with the aim of regulating AI specifically.¹⁷ Tacitly acknowledging this, the Artificial Intelligence for Europe communication does pay lip service to the need for other types of controls—including improving the “explainability of AI systems,” addressing AI safety and liability, and reflecting on intellectual property—but it cannot point to any current, explicit rules or agencies that address these concerns.¹⁸

The European Union is not alone in acknowledging that AI is both important and lacking in clear legal controls. The Council of Europe¹⁹—a non-governmental international institution that

¹⁴ Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, Artificial Intelligence for Europe, COM(2018) 237 final [hereinafter “Artificial Intelligence for Europe”] (available at http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=51625).

¹⁵ *Id.*

¹⁶ *Id.* For the full text of the GDPR, see Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC [hereinafter “GDPR”] 2016 O.J. (L 119) 1 (available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2016:119:FULL&from=EN>).

¹⁷ See GDPR, *supra* note 16.

¹⁸ Artificial Intelligence for Europe, *supra* note 14.

¹⁹ See *Who We Are*, Council of Europe (last visited Jan. 25, 2019), <https://www.coe.int/en/web/about-us/who-we-are>; see also *Do Not Get Confused*, COUNCIL OF EUROPE (last visited Jan. 25, 2019), <https://www.coe.int/en/web/about-us/do-not-get-confused> (describing the difference between the Council of Europe, the European Council, the European Union, and related entities).

promotes democracy and the rule of law—released a set of ethical guidelines for using AI in judicial systems, promoting core principles for increased AI governance.²⁰ In 2015, Japan announced its “New Robot Strategy” which, similar to the EU’s communication, emphasized the economic benefits of robotic innovation while acknowledging AI will need to be regulated.²¹ Similarly, China announced its “Three-Year Action Plan for Promoting the Development of a New Generation of Artificial Intelligence Industry” in 2017, hoping to harness the economic benefits of AI.²²

CONCLUSION

No nation, as of yet, seems to have fully addressed the difficulties of regulating AI. However, this does not mean that legislatures have no guidance for where to start. Adopting the strategies of the EU, Japan, China, and others, the simplest first step would seem to be defining a unified national strategy for AI. By signaling to the public at large that AI regulation is a topic that is at least being considered, and notifying them of goals that should be driven towards, legislatures can proactively shape the conversation surrounding AI, even if they are not currently ready to overtly regulate it.

This signaling also makes judges the current first responders when it comes to AI regulation. A lack of ex ante regulations means that most of AI’s untested ideas and concepts will be examined in court before they make it to any legislative floor. As with technological leaps of the past, the courts will have to interpret cases of first impression with little to no guidance from lawmakers. In considering these cases, it will be imperative that judges have an understanding of the nuances that make AI a novel legal entity.

²⁰ European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and their environment, CEPEJ(2018)14, <https://rm.coe.int/ethical-charter-en-for-publication-4-december-2018/16808f699c>.

²¹ New Robot Strategy, Japan’s Robot Strategy, The Headquarters for Japan’s Economic Revitalization (Oct. 2, 2015), http://www.meti.go.jp/english/press/2015/pdf/0123_01b.pdf.

²² Notice of the Ministry of Industry and Information Technology on Printing and Distributing the Three-Year Action Plan for Promoting the Development of a New Generation of Artificial Intelligence Industry (2-18-2020), Ministry of Industry and Information Technology [2017] No. 315 (Dec. 14, 2017), <http://www.miit.gov.cn/n1146295/n1652858/n1652930/n3757016/c5960820/content.html>.