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ARTICLE

ARTIFICIALLY INTELLIGENT PERSONS

*Nadia Banteka**

ABSTRACT

Artificial Intelligence (AI) entities seriously challenge traditional legal frameworks for attribution and liability because they operate at an increasing distance from their developers and owners, resulting in accountability gaps. Consider a scenario in which a self-driving car causes injury or even death to a human. Who do we hold accountable? We have no clear answer as to who can be sued or prosecuted because we lack a comprehensive legal understanding of AI entities. Many scholars propose as a solution to the accountability problem attaching liability to the direct source of the harm, the AI entity itself, by first granting it legal personhood. But the law has yet to answer the question of whether AI entities qualify for legal personhood and, if so, on what legal basis.

This Article is the first to empirically assess the scope of legal personhood as it relates to AI entities and to answer this question. I make two claims about the problem of legal personhood for AI. First, I argue that the courts' overall approach to legal personhood has been more disparate than many have assumed, and it does not

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support legal personhood for AI entities. To substantiate this position, I evaluate the legal basis for judicial decisions conferring legal personhood on artificial entities across U.S. courts from 1809 to the present, and I offer a statistical analysis of the frequency with which different conditions for legal personhood appear in these decisions. I find a clear dissonance between legal doctrine and existing theory on legal personhood for AI entities. Second, I argue that empirically understanding the legal landscape for legal personhood prevents courts from conferring legal personhood on AI entities and should give legislators pause before doing so. If courts and legislators consider the conditions for legal personhood that this Article identifies in answering questions of liability for AI entities, they will discover the incompatibility between legal personhood and these entities. Without recognition of this incompatibility, theory, policy, and litigation surrounding AI entities could move in a direction that undermines legal certainty and upsets legal expectation.

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I. INTRODUCTION

Artificial Intelligence (AI) creeps into most aspects of our daily lives: from our phones to our homes, our cars, our workplaces, our hospitals, even our personal lives and our bodies. AI is hidden in plain sight.¹ Consider any of these actual scenarios where an AI entity such as a self-driving car, a drone, a medical tricorder, a stock trading algorithm, or a hiring algorithm causes injury or even death to a human.² Who can be sued or prosecuted, or in other words, who can be held legally responsible? Today, we have no clear answer because we lack a comprehensive understanding as to what AI entities are in the eyes of the law.³ This Article is the first to empirically bring such an understanding that allows us to situate AI entities within our legal system and answer liability questions. I argue that, in order for legislators and courts to resolve how the law can address the challenge of legal responsibility for AI entities, they need to first answer a more fundamental question with both ontological and epistemological angles: the question of legal personhood for AI entities.

Legal personhood attributes legal consequences to an entity's actions.⁴ As AI entities are designed to operate at an increasing distance from their developers and owners, these AI entities seriously challenge traditional legal frameworks for attribution and liability, resulting in potential accountability gaps.⁵ Courts so far approach injuries that result from artificial entities by inquiring into the persons who could have reasonably foreseen the consequence of an act and were in a position to prevent it, or into

1. See Evan J. Zimmerman, *Machine Minds: Frontiers in Legal Personhood* 8 (Aug. 29, 2017) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2563965 [<https://perma.cc/PU5F-YTMP>].

2. See, e.g., Alex Davies, *Tesla's Latest Autopilot Death Looks Just Like a Prior Crash*, WIREDCOM (May 16, 2019, 5:46 PM), <https://www.wired.com/story/teslas-latest-autopilot-death-looks-like-prior-crash/> [<https://perma.cc/C4PX-GLUD>]; Paul Scharre, *Counter-Swarm: A Guide to Defeating Robotic Swarms*, WAR ON ROCKS (Mar. 31, 2015), <https://warontherocks.com/2015/03/counter-swarm-a-guide-to-defeating-robotic-swarms/> [<https://perma.cc/M7VH-WYYG>]; Bree Burkitt, *Self-Driving Uber Fatal Crash: Prosecution May Be Precedent Setting*, AZCENTRAL (June 22, 2018, 7:43 PM), <https://www.azcentral.com/story/news/local/tempe/2018/06/22/self-driving-uber-fatal-crash-prosecution-may-precedent-setting/726652002/> [<https://perma.cc/WJ3U-BBFC>].

3. See J.K.C. Kingston, *Artificial Intelligence and Legal Liability*, in RESEARCH AND DEVELOPMENT IN INTELLIGENT SYSTEMS XXXIII: INCORPORATING APPLICATIONS AND INNOVATIONS IN INTELLIGENT SYSTEMS XXIV, at 269, 274 (Max Bramer & Milos Petridis eds., 2016).

4. Bert-Jaap Koops et al., *Bridging the Accountability Gap: Rights for New Entities in the Information Society?*, 11 MINN. J.L. SCI. & TECH. 497, 514 (2010).

5. *Id.* at 517.

the persons with nefarious intent.⁶ So, when an AI entity causes injury to a human, the first response of the legal system may be to try to assign liability to software programmers or hardware manufacturers and owners on the basis of some form of direct or indirect liability. But AI entities present a unique challenge to this process due to their increasing distance from these persons and their inherent characteristics of autonomy, ubiquity, and inexplicability. This means that AI entities can and will act in ways that are neither intended nor foreseeable to designers or users. Their actions can also be the result of input from multiple independent developers, rendering the identification of an entity on which to impose liability and any causal relationship necessary for such liability to attach particularly difficult.⁷

This challenge is the reason why a lead part of the scholarship in law, ethics, and computer science has considered as a solution the possibility of attaching legal responsibility to the direct source of the harm, the AI entity itself, by first granting it legal personhood.⁸ At the same time, other scholars have raised compelling concerns about the potential abuse that ascribing legal personhood to AI entities may bring: from AI legal personhood

6. Curtis E.A. Karnow, *Liability for Distributed Artificial Intelligences*, 11 BERKELEY TECH. L.J. 147, 153–54, 178 (1996).

7. See Ryan Calo, *Robots in American Law* 23 (Feb. 24, 2016) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2737598 [<https://perma.cc/V3YP-FET8>]; Karnow, *supra* note 6, at 182.

8. Fahad Alaieri & André Vellino, *Ethical Decision Making in Robots: Autonomy, Trust and Responsibility*, in SOCIAL ROBOTICS 159, 159–60 (Arvin Agah et al. eds., 2016) (“[N]on-predictability and autonomy may confer a greater degree of responsibility to the machine”); Peter M. Asaro, *A Body to Kick, but Still No Soul to Damn: Legal Perspectives on Robotics*, in ROBOT ETHICS: THE ETHICAL AND SOCIAL IMPLICATIONS OF ROBOTICS 169, 169, 179–81, 183 (Patrick Lin et al. eds., 2012); SAMIR CHOPRA & LAURENCE F. WHITE, A LEGAL THEORY FOR AUTONOMOUS ARTIFICIAL AGENTS 26–27, 154–56 (2011) (arguing that AI could be given legal personality but that the final decision is a pragmatic one); Luciano Floridi & J.W. Sanders, *On the Morality of Artificial Agents*, 14 MINDS & MACHS. 349, 349, 357, 364 (2004); Steven J. Frank, *Tort Adjudication and the Emergence of Artificial Intelligence Software*, 21 SUFFOLK U. L. REV. 623, 626, 628–29, 666 (1987); GABRIEL HALLEVY, LIABILITY FOR CRIMES INVOLVING ARTIFICIAL INTELLIGENCE SYSTEMS 21–22 (2015) [hereinafter HALLEVY (2015)]; Gabriel Hallevy, *Unmanned Vehicles: Subordination to Criminal Law Under the Modern Concept of Criminal Liability*, 21 J.L. INFO. & SCI., no. 2, 2012, at 200, 207–08 [hereinafter Hallevy (2012)]; see also Christina Mulligan, *Revenge Against Robots*, 69 S.C. L. REV. 579, 585–86, 589–90 (2018); Migle Laukyte, *Artificial and Autonomous: A Person?*, in AISB/IACAP WORLD CONGRESS 2012: SOCIAL COMPUTING, SOCIAL COGNITION, SOCIAL NETWORKS AND MULTIAGENT SYSTEMS 66, 69 (Gordana Dodig-Crnkovic et al. eds., 2012); S.M. Solaiman, *Legal Personality of Robots, Corporations, Idols and Chimpanzees: A Quest for Legitimacy*, 25 A.I. & L. 155, 165 (2017); Amanda Wurah, *We Hold These Truths to Be Self-Evident, That All Robots Are Created Equal*, 22 J. FUTURES STUD., Dec. 2017, at 61, 63, 65, 67–69. See generally Lawrence B. Solum, Essay, *Legal Personhood for Artificial Intelligences*, 70 N.C. L. REV. 1231 (1992).

-serving as a shield for corporate accountability,⁹ to issues of standing and representation in court,¹⁰ and questions of who may be subjected to legal punishment.¹¹ The common thread underlying these opposing views is legal personhood as a requirement for legal capacity and legal responsibility.¹² Courts today hardly ever discuss questions of legal personhood because its existence is most often presumed. But AI entities present a new challenge to this presumption, and liability for their actions will depend on whether they satisfy conditions of legal personhood.¹³

Can AI entities have legal personhood and the subsequent rights and duties it establishes? This is the fundamental research question of this Article. U.S. law does not provide a cohesive answer as to which entities enjoy legal personhood and under what conditions. Indeed, different jurisdictions in the United States and also internationally recognize and give effect to legal personhood for different entities on disparate legal grounds with more or less clear justifications. But “[t]o determine whether an [AI] entity is a legal person, one must look to the approach a given system takes toward it.”¹⁴ This Article undertakes an empirical study to comprehensively identify and quantify the conditions upon which the U.S. legal system confers legal personhood on artificial entities and applies them to AI entities to assess whether AI entities can be legal persons.

In Part II, this Article reviews the literature concerning AI entities and identifies the inherent characteristics that render them challenging for legal liability frameworks. It then critically engages with the concept of legal personhood and the conditions scholars have posited are relevant in conferring legal personhood on AI entities such as autonomy, intelligence, and awareness. Part III of this Article presents findings from my qualitative content analysis across U.S. courts’ caselaw from 1809 until the present

9. Alaiერი & Vellino, *supra* note 8, at 166; see also Joanna J. Bryson et al., *Of, for, and by the People: The Legal Lacuna of Synthetic Persons*, 25 A.I. & L. 273, 277–78 (2017); Arthur Kuflik, *Computers in Control: Rational Transfer of Authority or Irresponsible Abdication of Autonomy?*, 1 ETHICS & INFO. TECH. 173, 180 (1999).

10. See Bryson et al., *supra* note 9, at 288.

11. See Mihailis E. Diamantis, *The Extended Corporate Mind: When Corporations Use AI to Break the Law*, 98 N.C. L. REV. 893, 906, 925 (2020); Bryson et al., *supra* note 9, at 283.

12. See Mark A. Geistfeld, *A Roadmap for Autonomous Vehicles: State Tort Liability, Automobile Insurance, and Federal Safety Regulation*, 105 CALIF. L. REV. 1611, 1629 (2017).

13. Alaiერი & Vellino, *supra* note 8, at 163; Bernd Carsten Stahl, *Responsible Computers? A Case for Ascribing Quasi-Responsibility to Computers Independent of Personhood or Agency*, 8 ETHICS & INFO. TECH. 205, 208–10 (2006).

14. See Bryson et al., *supra* note 9, at 278.

with regards to conditions courts have relied upon to confer legal personhood on artificial entities. Then, this Article demonstrates through statistical analysis the frequency with which courts have cited to these conditions. On the basis of these empirical findings, I make two claims about the problem of legal personhood for AI entities, one descriptive and one prescriptive. First, I argue that the courts' overall approach to legal personhood has been disparate, and it does not support legal personhood for AI entities. Second, I argue that empirically understanding the legal landscape for legal personhood prevents courts from conferring legal personhood on AI entities and should give legislators pause before doing so.

II. LEGAL PERSONHOOD & ARTIFICIAL INTELLIGENCE

A. *Artificial Intelligence, Machine Learning, and the Law*

AI lacks a uniform or universal definition. The very first definition was given to AI in the 1950s¹⁵ and suggested that “the artificial intelligence problem is taken to be that of making a machine behave in ways that would be called intelligent if a human were so behaving.”¹⁶ Since that time, the definitions used by practitioners and policy makers vary in setting greater or fewer conditions that an entity must meet to be defined as artificially intelligent. Looser definitions include any computerized system that exhibits behavior simulating some level of human thinking we commonly understand as intelligent.¹⁷ More stringent definitions associate AI with more complex manifestations of intelligence, such as solving specific problems or achieving direct goals in certain environments.¹⁸ Nils Nilsson has provided a useful and quite inclusive definition suggesting that “artificial intelligence is that activity devoted to making machines intelligent, and intelligence is that quality that enables an entity to function appropriately and with foresight in its environment.”¹⁹ Stuart Russell and Peter Norvig distinguish AI systems between

15. See COMM. ON TECH, EXEC. OFF. OF THE PRESIDENT, PREPARING FOR THE FUTURE OF ARTIFICIAL INTELLIGENCE 5 (2016).

16. John McCarthy et al., *A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence*, STAN. (Apr. 3, 1996, 7:48 PM), <http://www-formal.stanford.edu/jmc/history/dartmouth/dartmouth.html> [<https://perma.cc/A5HE-HJFC>].

17. See COMM. ON TECH, *supra* note 15, at 5–6; Paulius Čerka et al., *Liability for Damages Caused by Artificial Intelligence*, 31 COMPUT. L. & SEC. REV. 376, 380 (2015).

18. See COMM. ON TECH., *supra* note 15, at 6.

19. NILS J. NILSSON, THE QUEST FOR ARTIFICIAL INTELLIGENCE: A HISTORY OF IDEAS AND ACHIEVEMENTS, at xiii (2010).

those whose processes are linked to motivations and those linked to behavior: AI that thinks like humans and AI that thinks rationally, on the one hand, and AI that acts like humans or AI that acts rationally on the other.²⁰ Applications of the former category include neural networks, cognitive architectures, logic solvers, and of the latter category include natural language processors, knowledge representation, and intelligence software agents that achieve goals through learning and decision-making.²¹

Across definitions, AI splits largely into two levels of intelligence: narrow AI, the level that AI has already reached, and general AI, the level that AI aspires to reach. Narrow AI represents AI systems that can resolve a set of discrete problems through algorithms that are capable of optimizing solutions in specific application areas. These include AI that can successfully play games, drive a car, translate sentences, or recognize images. We encounter narrow AI daily in our interactions with commercial services, including online shopping, targeted advertising, and various recommendation systems such as those employed by online streaming platforms, spam filters, search engines, and medical diagnoses.²² And while these “AI systems will eventually reach and then exceed human-level performance” within the confines of the task they are designed to perform, narrow AI may not generalize a solution to produce AI behavior of general application across different tasks.²³ This is the aspiration of AI, often called general AI, which refers to an AI system that exhibits such behavior capable of performing a full range of cognitive tasks

20. See STUART RUSSELL & PETER NORVIG, *ARTIFICIAL INTELLIGENCE: A MODERN APPROACH* 1–2 (3d ed. 2010).

21. *Id.* at 1–2, 155, 336, 727–28, 1048. Others have proposed taxonomies that are based on a similar categories approach to motivations and behavioral tasks. See Frank Chen, *AI, Deep Learning, and Machine Learning: A Primer*, ANDRESSEN HOROWITZ (June 10, 2016), <http://a16z.com/2016/06/10/ai-deep-learning-machines> [<https://perma.cc/Y76M-JJZ8>]. Frank Chen categorizes “the problem space of AI into five general categories: logical reasoning, knowledge representation, planning and navigation, natural language processing, and perception.” COMM. ON TECH., *supra* note 15, at 7 (citing Chen, *supra*). Finally, Pedro Domingos associated AI researchers into “five ‘tribes’ based on the methods they use: ‘symbolists’ use logical reasoning based on abstract symbols, ‘connectionists’ build structures inspired by the human brain; ‘evolutionaries’ use methods inspired by Darwinian evolution; ‘Bayesians’ use probabilistic inference; and ‘analogizers’ extrapolate from similar cases seen previously.” *Id.* (citing PEDRO DOMINGOS, *THE MASTER ALGORITHM: HOW THE QUEST FOR THE ULTIMATE LEARNING MACHINE WILL REMAKE OUR WORLD* 51–53 (2015)).

22. See MILES BRUNDAGE ET AL., *THE MALICIOUS USE OF ARTIFICIAL INTELLIGENCE: FORECASTING, PREVENTION, AND MITIGATION* 9 (2018); COMM. ON TECH., *supra* note 15, at 7.

23. See BRUNDAGE, *supra* note 22, at 16.

at least at the same level as a human.²⁴ General AI is not currently available and there is no clear expectation as to whether and when AI systems may reach this level of capability. This Article is concerned with AI systems of all levels of intelligence but currently focuses on narrow AI as this is the type of AI system whose actions courts are already and will be adjudicating in the near future.

AI is distinct from other conventional automated software and poses new challenges to the law due to its ability to self-learn by accumulating personal experience and generating solutions to problems based on an independent analysis of various scenarios without the input of a developer. This is called self-training.²⁵ For AI, there are no preprogrammed rules of engagement and resolution of a problem by a human. Rather, AI adheres to instructions on how to learn from the data it encounters as it operates.²⁶ This is a process that has begun to imitate the human experience, which in AI terms we call machine learning.²⁷ Machine learning is based on statistical tools and processes that begin from a body of data and a set of algorithms that then devise a rule or procedure to make sense of this data or predict future data.²⁸ Machine learning algorithms largely use statistical inference tools to identify risk, predict error and minimize it, assign weight to variables, and ultimately optimize outputs.²⁹ For instance, one may give a machine learning algorithm data such as a person's age, favorite music genres, and artists, and task it with predicting a playlist with one's favorite, or about to be favorite songs. To do so, the algorithm will look through thousands of people with

24. See Nick Bostrom & Eliezer Yudkowsky, *The Ethics of Artificial Intelligence*, in *THE CAMBRIDGE HANDBOOK OF ARTIFICIAL INTELLIGENCE* 315, 318 (Keith Frankish & William M. Ramsey eds., 2014); *COMM. ON TECH.*, *supra* note 15, at 7.

25. Čerka et al., *supra* note 17, at 378; see also PHIL SIMON, *TOO BIG TO IGNORE: THE BUSINESS CASE FOR BIG DATA* 89 (2013); Zimmerman, *supra* note 1, at 7.

26. Yavar Bathaee, *The Artificial Intelligence Black Box and the Failure of Intent and Causation*, 31 *HARV. J.L. & TECH.* 889, 898 (2018); see also Mikella Hurley & Julius Adebayo, *Credit Scoring in the Era of Big Data*, 18 *YALE J.L. & TECH.* 148, 181 (2016) ("ZestFinance may rely on statistical algorithms to automatically identify the most significant metavariabes."); Harry Surden, *Machine Learning and Law*, 89 *WASH. L. REV.* 87, 93 (2014) ("[M]achine learning algorithms are able to automatically build accurate models of some phenomenon . . . without being explicitly programmed.").

27. "Early AI was focused on solving problems with static rules, which were in most cases mathematically defined." Bathaee, *supra* note 26, at 898 n.34; see also IAN GOODFELLOW ET AL., *DEEP LEARNING* 1–3 (2016) ("Several artificial intelligence projects have sought to hard-code knowledge about the world in formal languages. A computer can reason automatically about statements in these formal languages using logical inference rules. This is known as the knowledge base approach to artificial intelligence.").

28. See *COMM. ON TECH.*, *supra* note 15, at 8.

29. See GOODFELLOW ET AL., *supra* note 27, at 272–73.

various similar and dissimilar characteristics and their preferences to devise a model.

There are different types of machine learning, the particularities of which fall beyond the scope of this Article. The biggest distinction is between supervised and unsupervised machine learning. Much of machine learning is supervised, in that algorithms are first given directions as to what the optimal inputs and outputs for a problem are, and then are left alone to find the best ways to get there.³⁰ There is, however, also unsupervised machine learning in which algorithms infer patterns from datasets without any direction or reference to goals or outcomes to uncover hidden patterns in them.³¹

The machine learning process generally looks like this: developers give a learning algorithm a given data set on which to train.³² The developer chooses a model that is usually represented by a mathematical structure and allows for “a range of possible decision-making rules with adjustable parameters.”³³ Developers will often define outcomes on the basis of their desirability based on the choice of a certain parameter and attach a reward for when the algorithm correctly identifies the parameter that yields the optimal solution for the model. This teaches the algorithm to adjust for the parameters that maximize its objective function.³⁴ This type of reinforcement learning turns the process into “experience-driven sequential decision-making.”³⁵ Once the algorithm has been trained, then the goal is for the algorithm to be able to generalize this model beyond the training data set into new cases where the model has application but that the algorithm has never seen before. This is much akin to how learning for a human being starts and develops: first with no real knowledge and then by accumulating experience on the basis of positive or negative feedback and adjusting preferences, choices, and values—what for the algorithm are parameters—accordingly.³⁶

Machine learning has advanced significantly thanks to the technological successes of artificial neural networks. These networks, in turn, are possible largely thanks to increases of

30. Zimmerman, *supra* note 1, at 8.

31. *Id.* at 9.

32. Bathaee, *supra* note 26, at 900; see also Matthew Adam Bruckner, *The Promise and Perils of Algorithmic Lenders' Use of Big Data*, 93 CHL-KENT L. REV. 3, 16 (2018).

33. See COMM. ON TECH., *supra* note 15, at 9.

34. *Id.*

35. PETER STONE ET AL., *ARTIFICIAL INTELLIGENCE AND LIFE IN 2030*, at 9 (2016).

36. Zimmerman, *supra* note 1, at 8.

capacity in large-scale computing and big data.³⁷ Neural networks mimic the human brain and are comprised of many “neurons,” which are numerical states connected through “links” that serve as communication channels among neurons.³⁸ Layers upon layers of these neurons form into a web that creates “deep” neural networks.³⁹ This approach to machine learning has become known as “deep learning.”⁴⁰ What is particularly interesting about these networks is that not only do they represent a complex system of processing and transmitting information but also that they are adaptive systems with the capacity to change their internal structure on the basis of new information, establishing their ability to self-learn through experience.⁴¹

Imagine an artificial neural network algorithm intended to identify credit fraud. The algorithm pulls in data from records of financial institutions, the web, and social media, and is able to build a network of information containing users, retailers, senders, credit scores, and IP addresses for thousands and thousands of clients, but also draw connections among this data, a process that would take a human years to complete. On this information, the algorithm can build an added layer for identifying when a pattern in the data warrants investigation for fraud or even the need to freeze a user’s account. In a different example, these could be neural networks that are capable of identifying among billions of photographs the face of a specific person sought by law enforcement after learning, through training and internal adjustments, to correlate a specific input, that is the characteristics of a person, with an output, that is the image of a person’s face.⁴² Deep learning is in use extensively in commercial and noncommercial AI technology and has particularly facilitated, among others, image recognition and labeling as well as “audio, speech, and natural language processing.”⁴³

This ability of AI to self-learn from its own experience and undertake independent decision-making has led a large contingent of scholars to criticize the state of the law that treats

37. Nadia Banteka, *A Network Theory Approach to Global Legislative Action*, 50 SETON HALL L. REV. 339, 371 (2019); STONE ET AL., *supra* note 35, at 8–9.

38. Čerka et al., *supra* note 17, at 689 & n.33; Zimmerman, *supra* note 1, at 10.

39. Zimmerman, *supra* note 1, at 10.

40. STONE ET AL., *supra* note 35, at 8–9.

41. Čerka et al., *supra* note 17, at 689.

42. STONE ET AL., *supra* note 35, at 8–9; *see also* Lucas Introna & Helen Nissenbaum, *Facial Recognition Technology: A Survey of Policy and Implementation Issues* 10 (Lancaster Univ. Mgmt. Sch., Working Paper No. 2010/030, 2010).

43. STONE ET AL., *supra* note 35, at 8–9.

such AI entities as objects. Instead, they raise the possibility and, at times, call for such AI systems to become subjects of the law through conferment of legal personhood.⁴⁴ While the ultimate goal of this Article is to answer the question of whether such AI systems can, in fact, be granted legal personhood, it is important to view the argument these scholars raise within the context of the particular challenges AI presents for the law that attach to the question of legal personhood. Deep machine learning algorithms are challenging for the law for three related reasons: they are unpredictable, they are opaque, and they are increasingly autonomous. These embedded characteristics of AI clash with legal reasoning and, more particularly, with notions of causation, fault, intent, and eventually liability.⁴⁵

First, the very intelligence of these AI systems depends on their ability to self-adjust and create new behaviors on the basis of their own experience without relying on explicit programming.⁴⁶ The consequence is that their behavior is, to a high degree, unpredictable even to their original developers. This means that the AI may engage in activities that were unforeseen even by those who created it.⁴⁷ For instance, the AI system may reach a decision that is counterintuitive to humans by finding an obscure pattern in its data and thus engage in conduct that a human would not have engaged in such as discriminating against a certain population, speeding in a car, or selecting a market-manipulative investment trading strategy.⁴⁸ If an error occurs that is legally significant, it cannot necessarily be traced back to the intent or fault of the developer if there has been no malice or fault in the original programming. Second, AI has the potential to act unexplainably; that is, the algorithms' paths to a decision are often either undiscoverable or hidden behind trade secrets effectively

44. Alaieri & Vellino, *supra* note 8, at 163–65; Asaro, *supra* note 8, at 170, 179; Paulius Čerka et al., *Is It Possible to Grant Legal Personhood to Artificial Intelligence Software Systems?*, 33 *COMPUT. L. & SEC. REV.* 685, 686 (2017); see also Samir Chopra & Laurence White, *Artificial Agents - Personhood in Law and Philosophy*, in 110 *ECAI 2004: PROCEEDINGS OF THE 16TH EUROPEAN CONFERENCE ON ARTIFICIAL INTELLIGENCE* 635, 635, 637 (Ramon López de Mántaras & Lorenza Saitta eds., 2004); HALLEVY (2015), *supra* note 8, at 12–13, 21–22, 28, 39; Hallevy (2012), *supra* note 8, at 207–08, 210; Laukyte, *supra* note 8; Solum, *supra* note 8, at 1260–64.

45. See UGO PAGALLO, *THE LAWS OF ROBOTS: CRIMES, CONTRACTS, AND TORTS* 53 (2013).

46. Ryan Abbott, *Everything Is Obvious*, 66 *UCLA L. REV.* 2, 25 (2019).

47. Mireille Hildebrandt, *Criminal Liability and 'Smart' Environments*, in *PHILOSOPHICAL FOUNDATIONS OF CRIMINAL LAW* 507, 514–15 (R.A. Duff & Stuart P. Green eds., 2011); Karnow, *supra* note 6, at 154.

48. Bathae, *supra* note 26, at 924; Bostrom & Yudkowsky, *supra* note 24, at 1.

instituting a “black box.”⁴⁹ This means that a developer or owner cannot review the process the algorithm followed to resolve it and courts can’t easily look for the intent or fault of the developer or owner to assign responsibility to the human behind the algorithm as one would with an automated program that operates deterministically.⁵⁰ Even in instances where one may identify the processes that the AI followed, the algorithm is not able to articulate in terms understandable by us why it is that it reached a certain outcome.⁵¹ For instance, a trading algorithm can tell us whether it has been able to maximize profit but not if it succeeded in doing so through manipulating the market.⁵²

Finally, these qualities become more problematic when these algorithms, due to their increased autonomy, are not controllable even by their own developers.⁵³ Consider instances in which an AI causes a transgression without direct human control, thus acting autonomously. An algorithm, for instance, built to commit identity fraud that is reducible to a single developer but continues to pursue criminal activity even after the individual responsible for its original creation is removed.⁵⁴ Such autonomy is given to many AI systems by design.⁵⁵ And while conventional automata may exhibit some levels of these qualities, the scale and degree in which these qualities appear in AI systems make AI a distinctive phenomenon for the law that requires, if not different, certainly particularized legal responses.⁵⁶

This brings us back to the main question that currently preoccupies the scholarship on the intersection of law and AI:

49. Bathaee, *supra* note 26, at 891; *see also* W. Nicholson Price II, *Big Data, Patents, and the Future of Medicine*, 37 CARDOZO L. REV. 1401, 1404 (2016) (describing the algorithms that analyze health information as “‘black-box’ precisely because the relationships at [their] heart are opaque—not because their developers deliberately hide them, but because either they are too complex to understand, or they are the product of non-transparent algorithms that never tell the scientists, ‘this is what we found.’ Opacity is not desirable, but is rather a necessary byproduct of the development process.” (footnote omitted)); Will Knight, *The Dark Secret at the Heart of AI*, MIT TECH. REV. (Apr. 11, 2017), <https://www.technologyreview.com/s/604087/the-dark-secret-at-the-heart-of-ai/> [<https://perma.cc/42X2-W6VF>].

50. Bruckner, *supra* note 32, at 16.

51. Ryan Abbott & Alex Sarch, *Punishing Artificial Intelligence: Legal Fiction or Science Fiction*, 53 U.C. DAVIS L. REV. 323, 331 (2019).

52. Bathaee, *supra* note 26, at 907.

53. *See* Hannah R. Sullivan & Scott J. Schweikart, *Are Current Tort Liability Doctrines Adequate for Addressing Injury Caused by AI?*, 21 AMA J. ETHICS 160, 160–61 (2019).

54. *See* Abbott & Sarch, *supra* note 51.

55. *Id.*

56. *Id.* at 332; Bostrom & Yudkowsky, *supra* note 24, at 2.

when an AI system causes legal transgressions, who is legally responsible?⁵⁷ While an intuitive answer would be to trace legal responsibility to owners and developers through some existing version of tort or criminal liability for those automated entities that rely on deterministic programming, understanding how AI systems function illuminates the challenge that currently preoccupies scholarship: If AI entities have the capacity to learn as they operate and are autonomous, inexplicable, and unpredictable, can they also be individually legally responsible?⁵⁸ Since increased autonomy renders causation links between the AI and its developers harder to establish for outcomes they could neither control nor predict, do AI entities—apart from their developers—have the capacity to be held legally responsible for violating the law?⁵⁹ This has become known as the responsibility gap of AI.⁶⁰ I argue that this responsibility gap depends upon the question of legal personhood, which I address in the next parts of this Article.

B. Legal Personhood

Western legal traditions have developed the concept of legal personhood to more easily taxonomize the entities that can act in law.⁶¹ Being human is not a necessary condition of having legal personhood.⁶² Entities that enjoy legal personhood have, for a long time, included not only humans but also artificial entities such as corporations, trusts, and associations which the law treats as though they are one single entity, one single person.⁶³ In U.S. scholarship, John Chipman Gray put forth what has become the classical discussion on legal personhood by arguing that, within the law, the concept of a “person” deviates from the folk understanding of a human and instead describes a “subject of legal

57. See Asaro, *supra* note 8, at 175; Diamantis, *supra* note 11, at 925; Geistfeld, *supra* note 12, at 1628; HALLEVY (2015), *supra* note 8, at 21; Hallevy (2012), *supra* note 8, at 201; Bertram F. Malle, *Integrating Robot Ethics and Machine Morality: The Study and Design of Moral Competence in Robots*, 18 *ETHICS & INFO. TECH.* 243, 252 (2016); Solum, *supra* note 8, at 1244.

58. See Asaro, *supra* note 8; Malle, *supra* note 57; Diamantis, *supra* note 11; Geistfeld, *supra* note 12; Deborah G. Johnson, *Technology with No Human Responsibility?*, 127 *J. BUS. ETHICS* 707, 708 (2015).

59. See Johnson, *supra* note 58; Solum, *supra* note 8, at 1244–45.

60. See Johnson, *supra* note 58, at 708, 713.

61. See Hildebrandt, *supra* note 47, at 510.

62. Chopra & White, *supra* note 8, at 27.

63. See Koops et al., *supra* note 4, at 516.

rights and duties.”⁶⁴ These legal rights can be both substantive and procedural and generally span from constitutional rights and liberties to more reducible rights and duties such as the ability to sue and be sued, or the right to own property.⁶⁵ An examination into whether a particular entity can be considered to be a legal person often carries with it the normative question of whether this entity should be subject to these legal rights and duties as well as the pragmatic question of which of these rights and duties ought to be conferred on this entity to advance the purposes of the legal system.⁶⁶

Despite the fact that the concept of legal personhood is almost as old as the legal system itself, its meaning is far from uncontroversial. What determines whether an entity has legal personhood? While most human beings will almost intuitively pass the test of being legal persons, courts still disagree on what factors yield legal personhood and how legal personhood is acquired.⁶⁷ And while the concept of legal personhood remains controversial even as regards its subject par excellence, the biological person, as we move further away from the narrow sphere of the adult human and into the periphery of the concept of legal personhood, we encounter less and less coherence at both the jurisprudential and philosophical levels.⁶⁸

What is the status and bundle of rights enjoyed by nonbiological entities, also known as artificial entities? The term “artificial person” was first defined in federal statute in the

64. See Lawrence B. Solum, *Legal Theory Lexicon 027: Persons and Personhood*, LEGAL THEORY LEXICON (Oct. 6, 2019), https://lsolum.typepad.com/legal_theory_lexicon/2004/03/legal_theory_le_2.html [<https://perma.cc/YFV8-QHEU>]; JOHN CHIPMAN GRAY, *THE NATURE AND SOURCES OF THE LAW* 27 (1909); Bryant Smith, *Legal Personality*, 37 *YALE L.J.* 283, 283 (1928).

65. Hildebrandt, *supra* note 47, at 510; Solum, *supra* note 64.

66. Solum, *supra* note 64.

67. See, e.g., *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833, 874–79 (1992) (discussing a pregnant woman’s legal interests are controlling until a fetus is viable outside the womb, indicating before a fetus is viable outside the womb it is not treated as legal person); *Morgan v. Kroupa*, 702 A.2d 630, 633 (Vt. 1997) (stating that pets occupy “a special place somewhere in between a person and a piece of personal property” (quoting *Corso v. Crawford Dog & Cat Hosp., Inc.*, 415 N.Y.S.2d 182, 183 (1979))); *Nonhuman Rts. Project ex rel. Tommy v. Lavery*, 54 N.Y.S.3d 392, 395 (N.Y. App. Div. 2017) (explaining that, among other factors, because chimpanzees cannot be held legally accountable for their actions, it would be inappropriate to confer legal rights upon chimpanzees); Stephan C. Hicks, *Law, Policy and Personhood in the Context of the Techniques of Human Experimentation in Modern Medicine*, 19 *CAP. U. L. REV.* 255, 286 (1990); Elettra Stradella et al., *Robot Companions as Case-Scenario for Assessing the “Subjectivity” of Autonomous Agents*, in *CEUR WORKSHOP PROCEEDINGS* 25, 28 (Olivier Boissier et al. eds., 2012).

68. Stradella et al., *supra* note 67, at 28.

Federal Dictionary Act of 1871, which gave rules of construction stating that “the word ‘person’ may extend and be applied to bodies politic and corporate . . . unless the context shows that such words were intended to be used in a more limited sense.”⁶⁹ The Federal Dictionary Act later became Title 1 of the United States Code that is now entitled the Dictionary Act, and courts’ treatment of this Act has ranged from using it as a “tool of last resort to a presumptive guide.”⁷⁰ The Act’s legislative history further suggests that its purpose was “to avoid prolixity and tautology in drawing statutes and to prevent doubt and embarrassment in their construction.”⁷¹ The scarce usage of the Dictionary Act is one of the reasons why most scholarship and judicial decisions on the issue of legal personhood have resorted either to intuition or theory building in answering questions of legal personhood without providing a legally coherent and replicable framework of what the concept of legal personhood entails.⁷²

An added challenge to this convoluted landscape comes from the new disruptive technology surrounding AI.⁷³ The law deals with new societal developments either through novelty or by analogy.⁷⁴ The pertinent question here is whether AI entities can be legal persons for the purposes of their confrontations with the legal system. To shed some light on the hazy concept of legal personhood, this Article will combine legal theory accounts of legal personhood with empirical data from U.S. caselaw in an effort to identify a set of defensible conditions that define legal persons. Then this Article will consider these conditions and characteristics with respect to AI entities to assess the feasibility and desirability of granting legal personhood to these entities.

C. Theories of Legal Personhood

To deal with the puzzle of conferring legal personhood on different entities, courts and scholars have long debated underlying theory. Legislators and courts very scarcely provide reasons for conferring legal personhood on a particular entity and

69. Dictionary Act of 1871, ch. 71, 16 Stat. 431.

70. Emily J. Barnet, *Hobby Lobby and the Dictionary Act*, 124 *YALE L.J.F.* 11, 11–12 (2014).

71. CONG. GLOBE, 41st Cong., 3d Sess. 1474 (1871) (statement of Rep. Poland).

72. See Benjamin D. Allgrove, *Legal Personality for Artificial Intellects: Pragmatic Solution or Science Fiction?* 44 (June 1, 2004) (MPhil dissertation, University of Oxford), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=926015 [<https://perma.cc/4YKP-6T3T>].

73. Čerka et al., *supra* note 44, at 696.

74. See Allgrove, *supra* note 72, at 53; Koops et al., *supra* note 4, at 517.

will even do so on an ad hoc basis.⁷⁵ What becomes clear, however, is that legal personhood is a divisible aggregate of rights and duties.⁷⁶ As it is reduced to bundles of rights and duties, the exact number and kind of rights and duties an entity with legal personhood may enjoy can vary. Even amongst established legal persons such as human beings, legal systems have created categories of humans with more or less rights and different sets of obligations.⁷⁷ Consider, for instance, the rights enjoyed by an adult human to those enjoyed by a child. By analogy, artificial entities also fall on this spectrum and have often been conferred legal personhood with more or less restricted bundles of rights and obligations.⁷⁸

The debate regarding legal personhood of artificial entities amongst legal scholars and ethicists has largely philosophical roots. Typically, it involves the exercise of sketching up a set of qualities or conditions that an entity must enjoy to be recognized as a legal person and a rationale on how these new legal entities compare to those entities to which the law has thus far conferred legal personhood.⁷⁹ Naturally, this question also tends to concern the quantity and quality of rights and duties that these legal

75. See Bryson, *supra* note 9, at 278–79.

76. *Id.* at 277.

77. *Id.* at 278.

78. See *Burwell v. Hobby Lobby Stores, Inc.*, 573 U.S. 682, 706–07 (2014) (discussing how a corporation is “a form of organization used by human beings” and Fourth Amendment protections have been extended to corporations to protect the humans within the corporation); *Rowland v. Cal. Men’s Colony, Unit II Men’s Advisory Council*, 506 U.S. 194, 204 (1993) (discussing that the right for natural persons to represent themselves in litigation does not extend to corporations despite their legal personhood); *Balt. & Ohio R.R. Co. v. Harris*, 79 U.S. (12 Wall.) 65, 81 (1870) (discussing how natural persons may do whatever is not forbidden by law, but artificial persons like corporations can only do what they are legally chartered to do); *Flagstar Bank, FSB v. Maxwell*, No. 1:10-CV-1734-WBH-JSA, 2012 WL 12873619, at *3 (N.D. Ga. 2012) (discussing how unlike natural persons, corporations can only appear in court with counsel; they cannot appear in court pro se); *Anderson’s Paving, Inc. v. Hayes*, 295 S.E.2d 805, 808–09 (W. Va. 1982) (McGraw, J., dissenting) (discussing how extension of constitutional rights to a corporation is limited in context to instances where the right is necessarily incidental to the corporation’s existence); *Nonhuman Rts. Project ex rel. Tommy v. Lavery*, 54 N.Y.S.3d 392, 396 (N.Y. App. Div. 2017) (certain rights extended to corporations only to protect natural persons within the corporation, not the artificial corporation itself); *Batiste v. Bonin*, No. 06–1352, 2007 WL 1791219, at *2 (W.D. La. 2007) (discussing how a juridical person has only the capacity that the law allows); *State v. Richard Knutson, Inc.*, 537 N.W.2d 420, 427 (Wis. Ct. App. 1995) (discussing how statute includes artificial and natural persons when it is within the spirit and purpose of the statute).

79. See *Chopra & White*, *supra* note 44, at 635, 638; *Solaiman*, *supra* note 8, at 174.

entities will enjoy compared to the generally available universe of rights and duties.⁸⁰

The primary example of an artificial entity that enjoys legal personhood with an increasing set of rights and duties is that of corporations.⁸¹ With corporations gaining legal personhood, the debate shifted from its original concern with the human-based nature of legal personhood to questions of which artificial entities satisfy necessary conditions to enjoy legal personhood.⁸² The attributes that satisfy these conditions for artificial entities are also a significant part of the debate surrounding AI entities gaining legal personhood.⁸³

This Article will begin to tackle the question of legal personhood for AI by reviewing theory regarding the conceptual grounds and processes that yield legal personhood to artificial entities. AI brings a major transformation to the category of artificial entities. AI entities are capable of making decisions independently from humans, in other words, they are capable of “artificial actions” with “artificial consequences” that can be positive or negative, lawful or unlawful.⁸⁴ This is a development that the law cannot ignore. By analyzing the legal landscape of artificial entities, this Article will build a foundation from which to assess legal personhood for AI entities.

There are three main distinguishable theories that aim to explain the way the legal system approaches artificial entities through conferring legal personhood on them. As corporations have been the first and most prominent paradigm of this status conferral, these theories of personhood often use corporations as their main point of reference.⁸⁵ The first theory is known as the

80. *Burwell*, 573 U.S. at 706–07 (discussing how a corporation is “a form of organization used by human beings” and Fourth Amendment protections have been extended to corporations to protect the humans within the corporation); *Rowland*, 506 U.S. at 204 (discussing that the right for natural persons to represent themselves in litigation does not extend to corporations despite their legal personhood); *Flagstar Bank*, 2012 WL 12873619, at *3 (discussing how unlike natural persons, corporations can only appear in court with counsel; they cannot appear in court pro se); *Anderson’s Paving*, 295 S.E.2d at 808–09 (McGraw, J., dissenting) (discussing how extension of constitutional rights to a corporation is limited in context to instances where the right is necessarily incidental to the corporation’s existence); *Tommy*, 54 N.Y.S.3d at 396 (certain rights extended to corporations only to protect natural persons within the corporation, not the artificial corporation itself); *Batiste*, 2007 WL 1791219, at *2 (discussing how a juridical person has only the capacity that the law allows).

81. See cases cited *supra* note 79.

82. Hildebrandt, *supra* note 47, at 509; Solaiman, *supra* note 8, at 174.

83. Solum, *supra* note 8, 1238–40.

84. Hildebrandt, *supra* note 47, at 509, 512.

85. *Id.* at 512.

“fiction theory.”⁸⁶ Legal personhood for artificial entities is a positive law construct that the law attributes to certain entities.⁸⁷ This means that it is different from reality: it is a fictitious way of saying that an artificial entity is not a person but the law approaches it as if it were to allow these entities to act within the confines of this legal fiction.⁸⁸ As the U.S. Supreme Court wrote, “[T]he corporate personality is a fiction, although a fiction intended to be acted upon as though it were a fact.”⁸⁹ While some courts⁹⁰ and scholars⁹¹ take this legal fiction often at face value, others argue that its establishment is of a consequentialist nature: Courts confer legal status on artificial entities such as corporations as an easy way of conferring on them legal rights and

86. *Id.* at 511.

87. *Id.* at 511–12.

88. Čerka et al., *supra* note 44, at 694; Hildebrandt, *supra* note 47, at 511–12.

89. *Int'l Shoe Co. v. Washington*, 326 U.S. 310, 316 (1945).

90. *See Minneapolis & St. Louis Ry. Co. v. Beckwith*, 129 U.S. 26, 28 (1889) (discussing how the word “person” has been defined to include corporations and other legal entities under the Fourteenth Amendment and, absent contrary explicit language, statutes typically apply to legal persons); *Korte v. Sebelius*, 735 F.3d 654, 674 (7th Cir. 2013) (discussing how under the Dictionary Act, the word “person” includes artificial legal persons such as corporations unless context or plain language communicates otherwise); *Ruppel v. CBS Corp.*, 701 F.3d 1176, 1181 (7th Cir. 2012) (discussing how artificial persons are included in statutes where there is not explicit language otherwise or evidence of contrary legislative intent); *Isaacson v. Dow Chem. Co.*, 517 F.3d 129, 135–36 (2d Cir. 2008) (discussing how the word “person” in a statute includes corporations unless the context indicates otherwise); *In re Estate of Mulero's*, 143 F. Supp. 504, 505 (D.P.R. 1956) (discussing how artificial and juridical persons is included in the term “person” in the statute); Jessica Berg, *Of Elephants and Embryos: A Proposed Framework for Legal Personhood*, 59 HASTINGS L.J. 369, 383 n.67 (2007) (“A corporation is a citizen only in the state of its creation because it cannot exist away from the law which created it.”) (citing *McCabe v. Ill. Cent. R. Co.*, 13 F. 827, 830 (N.D. Iowa 1882)); Berg, *supra* (“Noting that the concession theory states that corporate personality is ‘invariably the gift and creature of the state’ and holding the law determines when the life (legal person[hood]) of an artificial person has been terminated, conditioned by the juristic quality of the cause for termination.”); *Petrogradsky Mejdunarodny Kommerchesky Bank v. Nat'l City Bank of N.Y.*, 170 N.E. 479, 482 (N.Y. 1930); *Miller v. Commonwealth*, 68 Va. 110, 114 (1876) (discussing that corporations are automatically included in a statute under the word “person” unless specifically exempted by the statutory language or the nature of the statute); *Boy Scouts of Am. Nat'l Found. v. Superior Court*, 206 Cal. App. 4th 428, 448 (Ct. App. 2012) (discussing that in a statute, “person” does not include artificial legal persons like corporations where distinctions were specifically made between natural and artificial person); *City of Baton Rouge v. Bernard*, 840 So. 2d 4, 7 (La. Ct. App. 2003) (holding that a city is a juridical person and thus a “creature of the law” with “no more legal capacity than the law allows”); *Barreca v. Nickolas*, 683 N.W.2d 111, 124 (Iowa 2004) (“The Factory, as a limited liability company, certainly cannot suffer emotional distress; such would stretch the bounds of the legal fiction of corporate personhood too far.”).

91. John Dewey, *The Historic Background of Corporate Legal Personality*, 35 YALE L.J. 655, 655–56, 666 (1926); William S. Laufer, *Corporate Bodies and Guilty Minds*, 43 EMORY L.J. 647, 650, 677 (1994).

duties which address certain needs of the legal system.⁹² Following this approach, the question of extending legal personhood to other artificial entities beyond corporations would then be based on the pragmatic question of whether these entities enjoying legal personhood would further the purposes of the legal system.⁹³

Related to this line of argument is the symbolist or aggregate theory.⁹⁴ The law gives artificial entities legal personhood as a shorthand for representing and conceptualizing the relations between the natural persons (who are members of the artificial entity) and the entity itself, as well as relations between the entity and the world.⁹⁵ For instance, instead of having to contract with separate persons who are all members of the same corporation with equal shares, one can say that one contracted with "AllCorp" and therefore have gained legal rights and obligations towards the corporation.⁹⁶ In other words, a legal person is the sum of the natural persons that are its members.⁹⁷ This theory is, on its face, incompatible with the way we currently understand AI entities today as individual unitary entities.

The realist theory stands in opposition to both of these theories. The realist theory rejects the idea that legal entities are fictions or symbols and instead perceives them as objective entities that exist beyond the law that the law takes account of and personalizes.⁹⁸ The realist theory is based on the premise that artificial entities that are independent, autonomous and act with real effects in the legal realm such as owning property or performing transactions have long existed.⁹⁹ These have included churches, trade unions, and private incorporations.¹⁰⁰ To treat

92. Bryson et al., *supra* note 9, at 282–83.

93. *Id.* at 282.

94. For a series of caselaw refuting the aggregate position, see *Maxwell Café Inc. v. Dep't of Alcoholic Beverage Control*, 298 P.2d 64, 68 (Cal. Ct. App. 1956); *Curtiss v. Murry*, 26 Cal. 633, 634–35 (1864); *Miller v. McColgan*, 110 P.2d 419, 421 (Cal. 1941); *Erkenbrecher v. Grant*, 200 P. 641, 642 (Cal. 1921); *Jacques, Inc. v. State Bd. of Equalization*, 318 P.2d 6, 14 (Cal. Ct. App. 1957); *Dandini v. Dandini*, 260 P.2d 1033, 1037 (Cal. Ct. App. 1953); B.E. WITKIN, *SUMMARY OF CALIFORNIA LAW* 4316 (8th ed. 1974).

95. See *Allgrove*, *supra* note 72, at 60; Katsuhito Iwai, *Persons, Things and Corporations: The Corporate Personality Controversy and Comparative Corporate Governance*, 47 AM. J. COMPAR. L. 583, 590 (1999); Max Radin, *The Endless Problem of Corporate Personality*, 32 COLUM. L. REV. 643, 657 (1932).

96. Radin, *supra* note 95, at 652–53.

97. Hildebrandt, *supra* note 47, at 512.

98. Iwai, *supra* note 95, at 600; see also Harold J. Laski, *The Personality of Associations*, 19 HARV. L. REV. 404, 405–06, 409 (1916).

99. *Allgrove*, *supra* note 72, at 65; Iwai, *supra* note 95, at 590.

100. See *Allgrove*, *supra* note 72, at 65.

their existence as a legal fiction entails the internal fallacy that if legal entities are products of the law they may not exist before the law produces them.¹⁰¹ Instead, proponents of the realist theory posit that artificial entities exist before the law grants them legal personhood and continue to exist as legal persons upon conferral of legal personhood.¹⁰² Thus, they are social entities that exist as a whole in addition to and irrespective of the existence of their individual members.¹⁰³ Finally, Peter French has advocated for a fourth theory that is based on the idea that certain artificial entities such as corporations may even be treated as a moral person and have natural rights because they can act intentionally.¹⁰⁴

Courts have engaged in discourse that fits either theory at different times.¹⁰⁵ As is evident by the theoretical disaggregation, there is not one generally accepted theory of legal personhood nor basis for identifying when an entity can be considered a legal person.¹⁰⁶ Instead, courts unsystematically assert various conditions that may result in the emergence of legal personhood

101. *Id.*

102. Arthur W. Machen, *Corporate Personality*, 24 HARV. L. REV. 253, 260–61 (1911).

103. Hildebrandt, *supra* note 47, at 512.

104. PETER A. FRENCH, *COLLECTIVE AND CORPORATE RESPONSIBILITY* 38 (1984).

105. *See* *Burwell v. Hobby Lobby Stores, Inc.*, 573 U.S. 682, 706–07 (2014) (discussing how a corporation is “a form of organization used by human beings” and Fourth Amendment protections have been extended to corporations to protect the humans within the corporation); *Baltimore & O. R. Co. v. Harris*, 79 U.S. 65, 81 (1870) (discussing how natural persons “may do whatever is not forbidden by law” but artificial persons like corporations can only do what they are legally chartered to do); *Flagstar Bank, FSB v. Maxwell*, No. 1:10-CV-1734-WBH-JSA, 2012 WL 12873619, at *3 (N.D. Ga. Aug. 17, 2012) (discussing how, unlike natural persons, corporations can only appear in court with counsel, they cannot appear in court pro se); *Anderson’s Paving, Inc. v. Hayes*, 295 S.E.2d 805, 808–09 (W. Va. 1982) (McGraw, J., dissenting) (discussing how extension of constitutional rights to a corporation is limited in context to instances where the right is “necessarily incidental” to the corporation’s existence); *Nonhuman Rts. Project, Inc. ex rel. Tommy*, 54 N.Y.S.3d 392, 396 (N.Y. App. Div. 2017) (certain rights extended to corporations only to protect natural persons within the corporation, not the artificial corporation itself); *Batiste v. Bonin*, No. 06–1352, 2007 WL 1791219, at *2 (W.D. La. June 13, 2007) (discussing how a “juridical person” has only the capacity that the law allows).

106. “These theories functioned to set guidelines as corporate doctrine developed, and . . . they were both affected by social developments and, in turn, themselves shaped historical development.” Berg, *supra* note 90, at 383 & n.69 (citing Morton J. Horwitz, *Santa Clara Revisited: The Development of Corporate Theory*, 88 W. VA. L. REV. 173, 173–74 (1985)); Berg, *supra* note 90, at 383 & n.69 (citing David Millon, *Frontiers of Legal Thought I: Theories of the Corporation*, 1990 DUKE L.J. 201, 204, 241–51) (discussing Horwitz’s arguments).

for an entity,¹⁰⁷ or rely on circular analysis asserting the legal rights of an entity because it is a legal person without first establishing what makes it a legal person.¹⁰⁸ I will address this issue of circularity in more detail in the analysis of my empirical findings.

D. The Corporations Paradigm

Federal law recognizes in its definition of “person” artificial entities that take the form “corporations, companies, associations, firms, partnerships, societies, and joint stock companies.”¹⁰⁹ This is the product of a long theoretical discourse that has puzzled legal scholars for years as to whether a corporation could and should be regarded as a legal person separate from its shareholders and managers.¹¹⁰ This distinct legal personhood makes it possible for the legal system to provide rights and duties directly to the corporation as well as hold it accountable for its actions irrespective of the actions of individual members and without necessarily holding individual members accountable.¹¹¹ “Corporations can own property, sign contracts, and be held liable for” breaches of the law as well as be found criminally responsible for several offenses,¹¹² and enjoy constitutional guarantees.¹¹³

107. See *Burwell*, 573 U.S. at 706–07; *Harris*, 79 U.S. at 81; *Flagstar Bank*, 2012 WL 12873619, at *3; *Anderson’s Paving*, 295 S.E.2d at 808–09; *Tommy*, 54 N.Y.S.3d at 396; *Batiste*, 2007 WL 1791219, at *2.

108. “These questions of law regarding rights of corporations would be better decided based on either empirical evidence or ethical argument, rather than recourse to circular arguments of legal terminology.” Berg, *supra* note 90, at 383 & n.71 (citing Felix S. Cohen, *Transcendental Nonsense and the Functional Approach*, 35 COLUM. L. REV. 809, 820 (1935)).

109. 1 U.S.C.A. § 1 (2012).

110. See, e.g., Cohen, *supra* note 108; ERNST FREUND, *THE LEGAL NATURE OF CORPORATIONS* (1897); FREDERICK HALLIS, *CORPORATE PERSONALITY: A STUDY IN JURISPRUDENCE* 171–74 (1930); ALEXANDER NÉKÁM, *THE PERSONALITY CONCEPTION OF THE LEGAL ENTITY* (1938); Radin, *supra* note 95, at 661–62; S.J. STOLJAR, *GROUPS AND ENTITIES: AN INQUIRY INTO CORPORATE THEORY* (1973); Paul Vinogradoff, *Juridical Persons*, 24 COLUM. L. REV. 594 (1924); Martin Wolff, *On the Nature of Legal Persons*, 54 LAW Q. REV. 494 (1938).

111. Hildebrandt, *supra* note 47, at 511–12.

112. See Peter M. Asaro, *Robots and Responsibility from a Legal Perspective at the 2007 IEEE International Conference on Robotics and Automation* (Apr. 14, 2007).

113. Berg, *supra* note 90, at 380 n.56. As Professor Berg explains:

Many of the constitutional guarantees in the Bill of Rights have been held to apply to legal persons and particularly corporations, including the Fourteenth Amendment Equal Protection and Due Process Clauses with respect to property interests and First Amendment freedom of speech protections. Corporations can have privacy interests that protect them from unreasonable searches under the

The existence of corporate personhood has prompted many scholars to draw comparisons with regards to the assignment of legal personhood to other artificial entities such as AI entities.¹¹⁴ Indeed, an analogy between an artificial person such as a corporation and an AI entity is more congruous and easier to conceptualize than a direct analogy to a biological person.¹¹⁵ What is more, the framework of corporations' legal personhood establishes an entity that is capable of a limited bundle of rights and duties compared to biological persons, something that sets out a useful paradigm for analogies drawn with AI entities, given the elastic nature of partial or ad hoc legal personhood.¹¹⁶ But, unlike corporations, AI entities are neither "fictional" entities" nor associations of natural persons, and the potential application of legal personhood to these entities makes it important to more

Fourth Amendment. Corporations are also afforded double jeopardy protection, but not self-incrimination, under the Fifth Amendment.

Id. (citations omitted) (citing *First Nat'l Bank of Bos. v. Bellotti*, 435 U.S. 765, 777–80 (1978); *Dow Chem. Co. v. United States*, 476 U.S. 227, 235–36 (1986)); *see also* *Anderson's Paving, Inc. v. Hayes*, 295 S.E.2d 805, 808–09 (1982) (McGraw, J., dissenting) (discussing *Rex Trailer Co. v. United States*, 350 U.S. 148 (1956)).

At least since 1886 in *Santa Clara County v. Southern Pacific Railroad Co.*, 118 U.S. 394, 396 (1886), the Supreme Court has consistently held that the Fourteenth Amendment assures corporations equal protection of the laws, and that it entitles them to due process of law, at least since 1889 in *Minneapolis & St. Louis Railway Co. v. Beckwith*, 129 U.S. 26, 28, 33 (1889). Justice Douglas, dissenting in *Wheeling Steel Corp. v. Glander*, 337 U.S. 562, 577–78 (1949), argued that the Equal Protection Clause, intended to remedy "gross injustice and hardship" against the "newly emancipated negroes," applied only to human beings. It was never intended "to protect corporations from oppression by the legislature." . . . On the other hand, the Privileges and Immunities Clause is not applicable to juridical persons, as are some other "personal" rights. The state's powers to grant or withhold rights to a juridical person, however, are not unlimited. . . . And states are not free to enact laws that would arbitrarily favor individuals over corporations.

Berg, *supra* note 90, at 380 n.56 (quoting *Wheeling Steel Corp.*, 337 U.S. at 578) (first citing *Grosjean v. Am. Press Co.*, 297 U.S. 233, 244 (1936); then citing *United States v. White*, 322 U.S. 694, 698 (1944); then citing *Cook County v. United States ex rel. Chandler*, 538 U.S. 119, 125, 129 (2003); then citing *R.R. Co. v. Harris*, 79 U.S. 65, 81 (1870); then citing *Bellotti*, 435 U.S. at 777, 784–85 (1978); and then citing *Frost v. Corp. Comm'n*, 278 U.S. 515, 522–23 (1929)).

114. *See* Čerka et al., *supra* note 17, at 383; HALLEVY (2015), *supra* note 8, at 39; Hallevy (2012), *supra* note 8, at 208; Solaiman, *supra* note 8, at 165, 175–76.

115. Marshal S. Willick, *Constitutional Law and Artificial Intelligence: The Potential Legal Recognition of Computers as "Persons,"* in 2 PROCEEDINGS OF THE NINTH INTERNATIONAL JOINT CONFERENCE ON ARTIFICIAL INTELLIGENCE 1271, 1272 (Aravind Joshi ed., 1985).

116. Bryson et al., *supra* note 9, at 279.

systematically consider the ontological and normative justifications of legal personhood.¹¹⁷

The law resorts to analogy when there are no better ways to interpret or resolve a new legal phenomenon. I propose that the epistemologically preferable way to begin resolving this legal personhood puzzle for AI entities is to, in fact, resist analogy and resort to empirical analysis instead. Approaching legal personhood from a conditions-based perspective, as it has emerged through legal doctrine, can offer sets of factors that courts seek to identify to confer legal personhood.¹¹⁸ Rationales may extend from inherent identity distinctions to public interest reasons and economic or social pragmatism that will be helpful in establishing a defensible argument as to whether AI entities can have legal personhood or not when courts are presented with an AI entity in litigation.

E. Does Legal Personhood Matter?

Before engaging more with the question of legal personhood for artificial entities, and specifically AI entities, it is important to consider whether there is such a thing as legal personhood and whether it is a necessary condition for these entities to exist in the eyes of the law.¹¹⁹ Indeed, unlike the concept of a “natural person,” there are few parameters either in statute or doctrine as to what constitutes a legal person, or what being a legal person means. States are given broad authority and discretion to decide the entities upon which to confer legal personhood and to define the legal consequences of this act in terms of the rights and duties these entities get to enjoy.¹²⁰ The U.S. Constitution, though it utilizes the term “person,” provides no definition for it.¹²¹ The U.S. Supreme Court has dealt with questions that implicate legal

117. Berg, *supra* note 90, at 384.

118. See Allgrove, *supra* note 72, at 64–65.

119. See, e.g., Dave Fagundes, Note, *What We Talk About When We Talk About Persons: The Language of a Legal Fiction*, 114 HARV. L. REV. 1745, 1745–46 (2001) (“[A]lthough no coherent body of doctrine or jurisprudential theory exists regarding . . . [the legal metaphor ‘person’], a set of rhetorical practices has developed around it.”). But “there is no clear agreement regarding the concept of ‘person.’” Berg, *supra* note 90, at 371 n.10 (citing Jane English, *Abortion and the Concept of a Person*, 5 CAN. J. PHIL. 233, 235 (1975)).

120. Berg, *supra* note 90, at 380 & nn.55–56.

121. The first use of the word “person” in the Constitution appears in the first Article of the Constitution in the line, “No *Person* shall be a Representative who shall not have attained to the Age of twenty five Years, and been seven Years a Citizen of the United States, and who shall not, when elected, be an Inhabitant of that State in which he shall be chosen.” U.S. CONST. art. I, § 2, cl. 2 (emphasis added). The word “person” is used ten times in the first Article alone and is defined nowhere within, before, or after. U.S. CONST. art. I.

personhood to some degree but without systematically addressing either the definition of the term or the factors necessary for qualifying an entity as a legal person, particularly with respect to artificial entities.¹²² Federal and state statutes add to this unclarity by presenting a fragmented landscape regarding the notion of legal personhood through extending it haphazardly and without coherent rationale.¹²³

AI entities have already triggered questions of liability and responsibility and have forced the legal system to grapple with issues that challenge the boundaries of the law covers in ways that would have been inconceivable a few years ago.¹²⁴ In turn, the more popularity and accessibility AI entities gain within society, the higher the likelihood that more legal issues will arise,

122. See *Burwell v. Hobby Lobby Stores, Inc.*, 573 U.S. 682, 706–07 (2014) (discussing how a corporation is “a form of organization used by human beings” and Fourth Amendment protections have been extended to corporations to protect the humans within the corporation, but not communicating what rights construct the corporation’s personhood behind those necessary to protect the legal persons within the organization). “In these three cases the *United States Supreme Court* upheld corporate rights found to be necessarily incidental to a corporation’s existence, although the rationale for the holdings in these cases is not clearly stated in any of the opinions.” *Anderson’s Paving, Inc. v. Hayes*, 295 S.E.2d 805, 808–09 (W. Va. 1982) (McGraw, J., dissenting) (emphasis added) (discussing *Rex Trailer Co. v. United States*, 350 U.S. 148 (1956); *Santa Clara v. S. Pac. R.R.*, 118 U.S. 394 (1886); *Bank of the U.S. v. Deveaux*, 9 U.S. (5 Cranch) 61 (1809)); *Pembina Consol. Silver Mining & Milling Co. v. Pennsylvania*, 125 U.S. 181, 187–88 (1888) (discussing how corporations resulted more from the grant of special privileges to the people incorporating the organization than to the organization itself).

123. See generally Lori B. Andrews, *The Legal Status of the Embryo*, 32 LOY. L. REV. 357 (1986) (discussing the history of legal treatment of a fetus or embryo under different areas of law).

For example, the Bankruptcy Act includes individuals, partnerships, and corporations, but not governmental units, as persons. Under Ohio’s corporate laws, which are typical, “person” is defined to include, “without limitation, a natural person, a corporation, whether nonprofit or for profit, a partnership, a limited liability company, an unincorporated society or association, and two or more persons having a joint or common interest.” Foreign governments are “persons” with the right to sue for treble damages under § 4 of the Clayton Act. Municipalities and other governmental units are “persons” under 42 U.S.C. § 1983. In the context of employment law, employers covered by civil rights law include any “natural” or “juridical” persons employing persons in return for any kind of compensation, for profit or nonprofit purposes, as well as their agents and supervisors. Local governments, municipal corporations, and school boards are “persons” subject to liability under 42 U.S.C. § 1983, which imposes civil liability on any person who deprives another of his federally protected rights.

Berg, *supra* note 90, at 371 n.13 (quoting Ohio Rev. Code Ann. § 1701.01(G) (West 2014)) (first citing 11 U.S.C. § 101(41); then citing 42 U.S.C. § 1983 (2000); then citing *Pfizer, Inc. v. Gov’t of India*, 550 F.2d 396, 399 (8th Cir. 1976), *aff’d*, 434 U.S. 308, 320 (1978); then citing *Cook County v. United States ex rel. Chandler*, 538 U.S. 119, 129 (2003); and then citing *Monell v. Dep’t of Soc. Servs.*, 436 U.S. 658, 688–90, 695–96 (1978)).

124. Čerka et al., *supra* note 17, at 383.

presenting questions of liability. This means that legislatures and courts will continue to be faced with the challenge of rethinking the nature and legal basis of liability for AI entities.

From a formalistic standpoint, it “may seem nonsensical” to even engage in the conversation of placing AI entities such as algorithms, devices, or robots directly under our laws, given that they are not only nonbiological entities but also inanimate objects.¹²⁵ And it may well be true that they do not fit easily into existing paradigms. However, we will never really have an authoritative answer as to whether AI entities can be subjected to our laws as individual entities unless we examine and evaluate in-depth the notion of legal personhood and how legislatures and courts have interpreted and applied it in the past. Moreover, formalistic responses are often overcome upon further reflection: consider, for instance, how unconvincing the idea that slaves could be legal persons would sound to someone living in ancient Greece or the segregated South.¹²⁶ That is why the formalistic response should not end the inquiry.

We already find ourselves facing legally difficult situations caused by AI entities and consequent liability questions: An AI shopping bot that was part of an art installation and was given \$100 a week to spend decided to buy MDMA pills and a passport on the dark web.¹²⁷ Naturally, authorities had a unique decision to make in charging for this transgression.¹²⁸ Tesla cars have been crashing into trucks when operating under the AI-based, semi-autonomous pilot system resulting in deaths.¹²⁹ An Uber self-driving car crashed into a pedestrian, killing her after erroneously classifying the pedestrian as a bicycle and deciding not to react immediately to avoid a collision.¹³⁰ The Arizona prosecutor in charge of the case decided not to press criminal charges against Uber for the death of the pedestrian due to an insufficient basis

125. Sam N. Lehman-Wilzig, *Frankenstein Unbound: Towards a Legal Definition of Artificial Intelligence*, 13 *FUTURES* 442, 447 (1981).

126. *See id.*

127. Arjun Kharpal, *Robot with \$100 Bitcoin Buys Drugs, Gets Arrested*, CNBC (Apr. 22, 2015, 5:09 AM), <https://www.cnbc.com/2015/04/21/robot-with-100-bitcoin-buys-drugs-gets-arrested.html> [<https://perma.cc/JP2V-CAT9>].

128. *Id.*

129. Davies, *supra* note 2.

130. NAT'L TRANSP. SAFETY BD., HWY18MH010, VEHICLE AUTOMATION REPORT 8, 11–12 (2019); Samuel Gibbs, *Uber's Self-Driving Car Saw the Pedestrian but Didn't Swerve*, *GUARDIAN* (May 8, 2018, 6:00 AM), <https://www.theguardian.com/technology/2018/may/08/ubers-self-driving-car-saw-the-pedestrian-but-didnt-swerve-report> [<https://perma.cc/U5ST-7B98>].

for corporate criminal liability under existing criminal statutes, and civil liability was “resolved” outside of court.¹³¹ Similarly, developments in online sales and purchases of goods which happen increasingly by AI bots through “smart” contracts have brought the legal personhood of AI entities in the forefront in private law: If AI entities can contract in their own name, can they also be sued for breach of contract or tort without having to impose liability on a natural person behind them?¹³²

Instances like these have prompted more proposals about extending legal personhood to AI entities. The most significant one was the request of the European Parliament to the European Commission to draft legislation addressing forthcoming legal challenges of AI entities in light of their increasing sophistication and autonomy by establishing a new status of legal personhood, that of electronic personhood.¹³³ The suggestion for electronic personhood was intended to facilitate the ascription of civil liability for instances in which AI entities make sufficiently autonomous decisions independently.¹³⁴ This would prompt new civil liability rules for electronic agents in which liability would be shared by all parties involved in the AI entity, such as the AI entity itself, the engineers, and the manufacturers along a continuum.¹³⁵ The different levels of autonomy the AI had exercised in the particular wrongful act would dictate the levels of liability to be allocated among the various parties.¹³⁶ Of course, such a sensitive proposal could not be met without controversy. In response to the proposal, a significant number of AI experts sent an open letter to the European Commission cautioning that “[f]rom an ethical and legal perspective, creating a legal personhood for a robot is inappropriate whatever the legal status model.”¹³⁷

131. Laurel Wamsley, *Uber Not Criminally Liable in Death of Woman Hit by Self-Driving Car, Prosecutor Says*, NPR (Mar. 6, 2019, 3:15 PM), <https://www.npr.org/2019/03/06/700801945/uber-not-criminally-liable-in-death-of-woman-hit-by-self-driving-car-says-prosec> [<https://perma.cc/QNY3-4Q2T>].

132. See Hildebrandt, *supra* note 47, at 514–15.

133. EUR. PARL. DOC. (A8-0005) (2017).

134. *Id.* at 6–8.

135. Wurah, *supra* note 8, at 62–63.

136. EUR. PARL. DOC., *supra* note 133, at 17.

137. *Open Letter to the European Commission Artificial Intelligence and Robotics*, POLITICO (May 4, 2018), <https://g8fip1kplyr33r3krz5b97d1-wpengine.netdna-ssl.com/wp-content/uploads/2018/04/RoboticsOpenLetter.pdf> [<https://perma.cc/2UXV-Z3YF>].

F. Conditions for Legal Personhood

The unsystematic development of the notion of legal personhood also means that there are no set criteria or conditions for its conferral on certain entities.¹³⁸ The wide discretion legislatures and courts enjoy in determining who is given legal personhood and on what grounds allows scholars to contemplate potential criteria.¹³⁹ The downside of such a lax approach is the inability to clearly assert whether a novel entity has the criteria to qualify for legal personhood. In this state of flux, scholars have considered various conditions as relevant for legal personhood. These conditions are largely intuitive, nebulous, and, at times, overlapping. In the debate about the personhood status of AI entities, an aggregate list of such conditions in legal scholarship consistently includes concepts of intelligence, autonomy, and awareness. These concepts focus on the AI entities' ability to learn through experience and adapt to the environment without the help of third parties.¹⁴⁰ Predictably, scholars not only disagree on which conditions should make it to the list, but also on what the concepts that represent these conditions really mean.¹⁴¹ What is more, arguments in favor of a certain condition or against a certain condition are often premised on either philosophical or pragmatic grounds. Each approach yields different conclusions in theorizing the nature of legal personhood and its general or specific application to entities that are currently in personhood limbo.¹⁴²

This debate relates in its core to questions about how the law is made and who it intends to serve. Legislatures function with a targeted audience in mind and the law largely employs the folk psychology model of human action in its effort to regulate the behavior or mental state of its subjects.¹⁴³ The most basic folk psychology argument regarding AI entities is based on the existence of a certain intangible "something" that is essential for personhood: be it mind, soul, feelings, intentionality,

138. See Koops et al., *supra* note 4, at 550.

139. See *infra* Part III.

140. EUR. PARL. DOC., *supra* note 133, at 20; Ugo Pagallo, *Killers, Fridges, and Slaves: A Legal Journey in Robotics*, 26 AI & SOC'Y 347, 349–50 (2011); Stradella et al., *supra* note 67, at 26.

141. See Chopra & White, *supra* note 44, at 635, 639.

142. See *id.*

143. See Stephen J. Morse, *Reason, Results, and Criminal Responsibility*, 2004 U. ILL. L. REV. 363, 371–73 (2004).

consciousness, or free will.¹⁴⁴ If this intangible parameter is what makes a “person” in the eyes of another, when it is missing, it is difficult for the commonsense human to conceptualize personhood. This is why scholars’ often-drawn analogies for AI legal personhood sometimes border on anthropomorphism.¹⁴⁵

Yet analogies become problematic upon further reflection. Legal personhood conditions based on anthropomorphic intuitions would suggest that if AI entities look and act a certain way that resembles the human way, then we would more likely extend legal personhood to them.¹⁴⁶ While AI entities may not currently have the levels of intellectual or emotional capacity of humans, they often exhibit human-like behaviors that are indistinguishable from those of humans. Consider, for instance, the chatbots that operate on websites or phone lines. For all intents and purposes of their given task, they are practically indistinguishable from the human clerks they are supposed to replace.¹⁴⁷ Yet AI entities currently do not explicitly enjoy legal personhood. To escape this circular reasoning, we need to empirically identify the conditions for legal personhood on the basis of which artificial entities have been granted such personhood and relate them to the existing theoretical list of conditions advocated in legal scholarship and policy: autonomy, intelligence, and awareness.¹⁴⁸ I start with the first.

1. *Autonomy.* Autonomy is a condition that many scholars present as integral to the conferral of legal personhood on artificial entities, and it is a condition that is integral to AI in its own right.¹⁴⁹ Autonomy is also a concept that has been the source of

144. See FRANCISCO J. VARELA ET AL., *THE EMBODIED MIND: COGNITIVE SCIENCE AND HUMAN EXPERIENCE* 59–60 (rev. ed. 2016); N. KATHERINE HAYLES, *HOW WE BECAME POSTHUMAN: VIRTUAL BODIES IN CYBERNETICS, LITERATURE, AND INFORMATICS* 2–3 (1999); Amie L. Thomasson, *First-Person Knowledge in Phenomenology*, in *PHENOMENOLOGY AND PHILOSOPHY OF MIND* 117 (David Woodruff Smith & Amie L. Thomasson eds., 2005); Sherry Turkle, *Artificial Intelligence and Psychoanalysis: A New Alliance*, in *THE ARTIFICIAL INTELLIGENCE DEBATE* 257 (Stephen R. Graubard ed., 1988).

145. See Kate Darling, “Who’s Johnny?” *Anthropomorphic Framing in Human–Robot Interaction, Integration, and Policy*, in *ROBOT ETHICS 2.0: FROM AUTONOMOUS CARS TO ARTIFICIAL INTELLIGENCE* 179 (Patrick Lin et al. eds., 2017).

146. See Solum, *supra* note 8, at 1286.

147. See Chopra & White, *supra* note 44, at 637.

148. See Koops et al., *supra* note 4, at 559–60.

149. See Karnow, *supra* note 6, at 152, 189; UGO PAGALLO, *FROM AUTOMATION TO AUTONOMOUS SYSTEMS: A LEGAL PHENOMENOLOGY WITH PROBLEMS OF ACCOUNTABILITY* 18–19 (2017), <https://www.ijcai.org/Proceedings/2017/0003.pdf> [<https://perma.cc/9K68-6JPK>]; Stephen C. Hicks, *On the Citizen and the Legal Person: Toward the Common Ground of*

significant misunderstanding among legal scholars and policymakers, particularly with regard to its relationship with the concept of automation.¹⁵⁰ The shift from automation to autonomy in technology peaks with AI entities that are fundamentally different from other digital software and ordinary computer algorithms due to their ability to learn independently, compile experience through learning, and produce outcomes separate from the intention or will of their developers.¹⁵¹ AI entities can receive input, set goals, assess possible outcomes, and calculate the possibility of success without any human control.¹⁵² In other words, autonomous AI entities “sense-think-act’ without human involvement.”¹⁵³

This aspect of autonomy represents the ability of an entity to establish and modify inner states without any external stimuli such as human intervention.¹⁵⁴ The ability of AI entities to respond to environmental stimuli they perceive through sensory inputs and either change their own inner states or alter and improve the rules on which their inner states are based allows AI entities to perform autonomous decision-making, which is often argued to be a condition for legal personhood.¹⁵⁵ This is because we often associate autonomy closely with responsibility and responsibility with free will.¹⁵⁶ When most people are asked to point the difference between humans and animals, the notion of “free will” comes up very frequently in that human actions are not necessarily predetermined, but we are able to exercise control over them and affect their course.¹⁵⁷ Incompatibilist moral philosophers stress that, in order for people to be held responsible for their actions, they must have freedom of choice between alternative options as one may not exercise free will without the presence of

Jurisprudence, Social Theory, and Comparative Law as the Premise of a Future Community, and the Role of the Self Therein, 59 U. CIN. L. REV. 789, 815–16 (1991); PAGALLO, *supra* note 45, at 23. See generally Asaro, *supra* note 112 (discussing the concept of agency and its impact on establishing legal personhood).

150. PAGALLO, *supra* note 149, at 18–19.

151. Čerka et al., *supra* note 44, at 686–87.

152. Abbott & Sarch, *supra* note 51, at 333.

153. David C. Vladeck, *Machines Without Principals: Liability Rules and Artificial Intelligence*, 89 WASH. L. REV. 117, 121–22 (2014).

154. Floridi & Sanders, *supra* note 8, at 357.

155. PAGALLO, *supra* note 149, at 18–19; Čerka et al., *supra* note 44, at 686–87, 689.

156. See ALFRED R. MELE, *AUTONOMOUS AGENTS: FROM SELF-CONTROL TO AUTONOMY* 139–40 (1995); Gerald Dworkin, *Acting Freely*, 4 NOÛS, Nov. 1970, at 367, 378.

157. See David J. Calverley, *Imagining a Non-Biological Machine as a Legal Person*, 22 AI & Soc’y 523, 531 (2008).

alternative possibilities.¹⁵⁸ For the purposes of the legal system, this aspect of autonomy suggests that if an AI engages in an act, this act may not be reducible to a person for liability purposes, leaving attribution and punishment up in the air.¹⁵⁹

The second aspect of autonomy is associated with agency and the idea that an autonomous entity is capable of understanding higher level intent and direction and to “shift from low-level control towards higher order functions.”¹⁶⁰ In this sense, autonomy represents a continuum of less or more autonomous entities, the levels of which are based on how successfully the entity can represent this shift from automation (think of a parking assistant camera) to full autonomy (akin to the decision-making capacity of a human).¹⁶¹ Regulatory agencies tasked with qualifying autonomy in AI entities have already recognized this continuum. For instance, the U.S. Department of Transportation, in the Federal Automated Vehicles Policy, distinguishes six levels of autonomy based on what tasks the AI exercises in driving. These levels range from “Level 0” when the human driver performs all driving tasks to “Level 5” in which “the automated system can perform all driving tasks, under all conditions that a human driver could perform them.”¹⁶²

The reason why autonomy matters for legal personhood for scholars is because of its connection to legal responsibility and liability.¹⁶³ Consider the case of autonomous driving. Many accidents leading to injury or death to third parties happen due to vehicular negligence on the part of the driver.¹⁶⁴ Now imagine that the AI is able to perform the driving tasks at the level of a human driver (Level 5 or above) and an incident that leads to third-party

158. See PETER VAN INWAGEN, AN ESSAY ON FREE WILL 104–05 (1983); ROBERT KANE, THE SIGNIFICANCE OF FREE WILL 32–33, 38 (1996). *But see* Harry G. Frankfurt, *Freedom of the Will and the Concept of a Person*, 63 J. PHIL. 5, 20 (1971) (analyzing how determinism can be reconciled with free will for personhood). Frankfurt proposes that humans possess first- and second-order desires and volitions. *Id.* at 6–7. A person who has a second-order desire necessarily cares for her first-order desires. *Id.* To the extent that this second-order desire is motivated by a second-order volition, which is effectively controlling the first-order desires, the person is considered to be autonomous. *Id.* at 10; *see also* Michael McKenna, *Reasons Reactivity and Incompatibilist Intuitions*, 8 PHIL. EXPLS. 131, 140 (2005).

159. See Abbott & Sarch, *supra* note 51, 333–34.

160. See Stradella et al., *supra* note 67, at 25–26.

161. Zimmerman, *supra* note 1, at 14; Matilda Claussén-Karlsson, *Artificial Intelligence and the External Element of the Crime: An Analysis of the Liability Problem* 18 (2017) (law program thesis, University of Örebro).

162. NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., U.S. DEP'T OF TRANSP., FEDERAL AUTOMATED VEHICLES POLICY 9 (2016).

163. Solum, *supra* note 8, at 1238–39, 1272–73; MELE, *supra* note 156.

164. Geistfeld, *supra* note 12, at 1614–15, 1620, 1929

injury or death takes place. The level of autonomy of the AI is particularly instructive for the distribution of legal responsibility and liability.¹⁶⁵ This doesn't only apply to autonomous vehicles. Think of the AI social bots, algorithms capable of communicating and interacting with humans socially.¹⁶⁶ These social bots have the autonomy to make decisions about how to approach a situation including, oftentimes, instances in which legal agreements are made between the bot and the human such as a sales contract. Similarly, liability arising out of the nonexecution of this contract, or of potentially abusive terms within the contract, stems from the level of autonomy of the AI involved.¹⁶⁷ Ultimately, the autonomy of AI entities raises questions about their legal nature both under epistemological as well as pragmatic aspects of legal personhood.¹⁶⁸

2. *Intelligence.* Autonomy is often conflated with intelligence; however, the two concepts are distinct and not contingent upon each other, even as proposed conditions for legal personhood. The reason for this conflation is that autonomy is necessary for intelligence to manifest,¹⁶⁹ and intelligence represents a manifestation of an entity's capacity for learning.¹⁷⁰ The contemporary debate on AI intelligence is still premised, in part, on Alan Turing's infamous test and the counter-tests that followed.¹⁷¹ Turing tested the possibility of a computer that behaves so intelligently that a person cannot tell it apart from another human.¹⁷² Turing would place the computer in question in an imitation game with a human opponent. A third person asks questions to both the computer and the human on any subject the person chooses without being able to see either.¹⁷³ Both opponents

165. See *id.* at 1629.

166. Kate Darling, *Extending Legal Protection to Social Robots: The Effects of Anthropomorphism, Empathy, and Violent Behavior Towards Robotic Objects*, in *ROBOT LAW* 213, 215 (Ryan Calo et al. eds., 2016).

167. Giovanni Sartor, *Cognitive Automata and the Law: Electronic Contracting and the Intentionality of Software Agents*, 17 *A.I. & L.* 253, 277–78 (2009); *EUR. PARL. DOC.*, *supra* note 133, at 17.

168. See Bryson et al., *supra* note 9, at 277.

169. Zimmerman, *supra* note 1, at 14.

170. See Bruce G. Buchanan, *A (Very) Brief History of Artificial Intelligence*, *AI MAG.*, Winter 2005, at 53, 57; Marvin Minsky, *Steps Toward Artificial Intelligence*, 49 *PROC. IRE* 8, 27 (1961).

171. See Buchanan, *supra* note 170, at 56–57; Solum, *supra* note 8, at 1235–36; Čerka et al., *supra* note 44, at 687.

172. A.M. Turing, *Computing Machinery and Intelligence*, 59 *MIND* 433, 433–35 (1950).

173. *Id.* at 433–34.

are tasked with convincing the third person that they are human and that their opponent is not.¹⁷⁴ At the end of the game, the third person will have to make an educated guess on the basis of the line of questioning as to which of the two players is human and which is not.¹⁷⁵ Turing argues that insofar as a machine is able to “fool” a human about its status at least half of the time, this machine would have to pass as intelligent, without discussing any conceptual qualifications of intelligence.¹⁷⁶

John Searle based his own test on this analytical weakness of the Turing test.¹⁷⁷ Imagine a person who is locked in a room and is receiving pieces of paper with Chinese writing scribbled on them. This person has a rulebook with rules on how to identify Chinese characters and transpose them to English, and with it is able to send back out of the room the translation of the Chinese scribbles into English.¹⁷⁸ Whoever sits outside of that room receiving the translations will assume that the person in the room understands Chinese. However, the person in the room is merely processing instructions on identifying Chinese symbols.¹⁷⁹ With this test Searle argues that simple information processing and true understanding are distinct because only true understanding can attribute meaning, and meaning is necessary for intelligence, as opposed to a mere input-output process that only imitates understanding.¹⁸⁰ The struggle with the concept of intelligence in AI entities is not dissimilar to the difficulty we have with the concept of personhood. Again, as Searle’s counter-test tried to prove, humans are prone to looking for some greater intangible property, be it the mind, intentionality, or consciousness, that has meaning outside of and beyond the operational process of sensory input and output.¹⁸¹ On this basis, we tend to tie our notions of personhood to this intangible property that we associate with intelligence.

Legg and Hutter emphasized the importance of defining intelligence for AI entities if we are to have a comprehensive understanding of intelligence. Recognizing the absence of

174. *Id.* at 433–35.

175. *Id.*

176. Solum, *supra* note 8, at 1236.

177. John R. Searle, *Is the Brain’s Mind a Computer Program?*, SCI. AM., Jan. 1990, at 26, 26, 31.

178. *Id.* at 26.

179. *Id.*

180. Solum, *supra* note 8, at 1236–37; Robert I. Damper, *The Logic of Searle’s Chinese Room Argument*, 16 MINDS & MACHS. 163, 165–66 (2006).

181. Searle, *supra* note 177.

consensus as to what intelligence means, they performed a quantitative analysis of informal definitions for human intelligence across scientific fields and concluded that, throughout cognitive sciences, “[i]ntelligence measures an agent’s ability to achieve goals in a wide range of environments.”¹⁸² Just like autonomy, it is helpful to view intelligence in a continuum instead of a binary.¹⁸³ What we consider “intelligent” or “smart” in artificial entities varies. Consider two entities with an ability to achieve goals in a given environment. One of them is able to achieve more goals, or the same number of goals more expediently, or can draw insights from multiple other environments for the same number of goals than the other.¹⁸⁴ We would naturally qualify this entity as more intelligent than the other.

AI theory represents this by putting forward the distinction between “weak” and “strong” intelligence, but this distinction can be given more nuance if one is to bring into it the notion of autonomy.¹⁸⁵ First, consider an entity that is intelligent in that it is able to pursue and achieve any goals that the programmer has predicted for it in a particular way.¹⁸⁶ Now consider another entity that has the ability to pursue general goals semi-autonomously, but instead of a programmer having determined in advance a distinct way of success or sets of subgoals for it, the entity, by mining new data, is able to learn how to set and achieve certain goals through supervised training.¹⁸⁷ Finally, consider an entity that is capable of doing all that fully autonomously by training itself without any human supervision. These three scenarios represent the three points in the continuum of intelligence that an AI entity can reach on the basis of how autonomous it is.¹⁸⁸

For the purposes of legal personhood, intelligence understood in a continuum often correlates with an entity’s capacity to understand and exercise certain legal rights and duties.¹⁸⁹ Consider this within biological persons. The law confers limited personhood on children below a certain age due to their limited

182. Shane Legg & Marcus Hutter, *Universal Intelligence: A Definition of Machine Intelligence*, 17 *MINDS & MACHS* 391, 400–02, 405, 415 (2007).

183. Zimmerman, *supra* note 1, at 14, 16.

184. See Luke Muehlhauser & Anna Salamon, *Intelligence Explosion: Evidence and Import*, in *SINGULARITY HYPOTHESES: A SCIENTIFIC AND PHILOSOPHICAL ASSESSMENT* 15, 17, 28–29 (Amnon H. Eden et al. eds., 2012).

185. Searle, *supra* note 177, at 26.

186. See Hildebrandt, *supra* note 47, at 514.

187. See *id.*

188. See *id.*; Zimmerman, *supra* note 1, at 16.

189. See Solum, *supra* note 8, at 1239–40.

developmental capacity.¹⁹⁰ The law equally confers limited legal personhood on biological persons with severe intellectual disabilities.¹⁹¹ As with the entirety of the notion of legal personhood, the law implicitly infers patterns and conditions for legal personhood on the basis of desired outcomes, without contemplating *ex ante* what these patterns and conditions are or what they mean for the notion of legal personhood.

3. *Awareness.* Intelligence and awareness or consciousness are concepts often intimately connected in debates in the scholarship over attributing legal personhood to new types of entities.¹⁹² Scholars often use the terms “awareness” and “consciousness” interchangeably and without much definitional certainty.¹⁹³ However, the legal system has not traditionally treated consciousness as a condition for legal personhood but rather as a circumstance that may affect, in certain instances, liability.¹⁹⁴ Natural persons who are asleep, in a coma, or who experience temporary loss of consciousness are not deprived of their legal personhood on the basis of lacking consciousness.¹⁹⁵ Instead, these factors may result in a determination that they are not liable or are less culpable.

Scholars also sometimes link the notions of awareness and consciousness with the notion of intentionality.¹⁹⁶ Searle, for instance, writes, “The ascription of an unconscious intentional phenomenon to a system implies that the phenomenon is in principle accessible to consciousness.”¹⁹⁷ I wish to push back on this linkage both for the purposes of facilitating an understanding of legal personhood for artificial entities conceptually as well as being legally consistent with prior understandings. Notions of

190. See OFF. OF JUV. JUST. & DELINQ. PREVENTION, U.S. DEP'T OF JUST., TRYING JUVENILES AS ADULTS: AN ANALYSIS OF STATE TRANSFER LAWS AND REPORTING 2, 6 (2011); Jeffrey Fagan, *Juvenile Crime and Criminal Justice*, FUTURE CHILD., Fall 2008, at 81, 91–92.

191. See Stephen J. Morse, *Mental Disorder and Criminal Justice*, in REFORMING CRIMINAL JUSTICE 253, 255–56 (Erik Luna ed., 2017); L. Männynsalo et al., *Forensic Psychiatric Perspective on Criminality Associated with Intellectual Disability: A Nationwide Register-Based Study*, 53 J. INTELL. DISABILITY RSCH. 279, 281 (2009).

192. Koops et al., *supra* note 4, at 519–20, 558–59; Zimmerman, *supra* note 1, at 13–14.

193. Gonenc Gurkaynak et al., *Stifling Artificial Intelligence: Human Perils*, 32 COMPUT. L. & SEC. REV. 749, 753 (2016); see also Zimmerman, *supra* note 1, at 13–14, 20–21.

194. Adam Candeb, *Consciousness & Culpability*, 54 ALA. L. REV. 113, 118 (2002).

195. Chopra & White, *supra* note 44, at 639.

196. Sartor, *supra* note 167, at 268–69.

197. John R. Searle, *Consciousness, Explanatory Inversion, and Cognitive Science*, 13 BEHAV. & BRAIN SCI. 585, 586 (1990).

awareness or even consciousness are distinct from notions of intentionality. Richard Posner explains why this is by arguing that an overlapping understanding of awareness and intentionality would lead us to conclude that, for example, railroad managers “are murderers because they” have a high degree of certainty, which includes awareness, “that their trains will run down a certain number of people” at crossings per year.¹⁹⁸ While they may be aware of this problematic outcome, “they derive no benefit” from it, nor do they invest any resources in bringing it about.¹⁹⁹ Intentionality, understood through this example, is the desire to bring about an outcome by investing certain resources in its pursuit.²⁰⁰ Awareness, on the other hand, requires no such investment or pursuit.

Though awareness is distinct from intentionality, it is still a component of it in the sense that one need be aware of an act that one is performing. One’s state of awareness is knowledge of what one is doing or is capable of doing.²⁰¹ In turn, awareness makes agents capable of intentional action.²⁰² Joel Feinberg and Bonnie Steinbock extend the notion of intentional action to the ability of having “interests,” that is the capacity to have a stake in things, which belongs only to entities that are consciously aware.²⁰³ Legal personhood then becomes the means through which one may claim or protect these interests but also be accountable for violating the interests of others.²⁰⁴ This notion of awareness becomes the basis for accountability since our legal system is based on the premise that entities aware of their actions may also be held to account or hold others who are aware similarly accountable.²⁰⁵

4. *Moral Personhood.* Legal personhood represents arguably “the widest class of persons” encompassing both natural and artificial entities and granting them the ability to act under the law, such as to contract, sue for damages, or be subjected to certain

198. Richard A. Posner, *An Economic Theory of the Criminal Law*, 85 COLUM. L. REV. 1193, 1221 (1985).

199. *Id.*

200. *Id.*

201. See Calverley, *supra* note 157, at 529.

202. See Thomasson, *supra* note 144, at 117, 126; PAGALLO, *supra* note 149, at 19.

203. See JOEL FEINBERG, HARM TO OTHERS: THE MORAL LIMITS OF THE CRIMINAL LAW 33–34 (1984); BONNIE STEINBOCK, LIFE BEFORE BIRTH: THE MORAL AND LEGAL STATUS OF EMBRYOS AND FETUSES 5–6 (2d ed. 2011).

204. Wurah, *supra* note 8, at 63; see also Berg, *supra* note 90, at 379.

205. Laukyte, *supra* note 8, at 69.

coercive measures.²⁰⁶ There is, however, another class of persons, the moral person, the status of which in relation to legal personhood remains unclear. Interestingly, the term “legal person” historically developed in juxtaposition to the term “moral person.”²⁰⁷ Though it is not the purpose of this Article to delve into ontological questions of moral personhood, aspects of moral personhood often come up as a precondition to an entity’s capacity for legal personhood, particularly within the realm of criminal accountability and punishment. Some authors argue that legal accountability and, particularly, criminal accountability raise moral issues and require agents to be capable of culpable behavior.²⁰⁸ This is because, at least largely in the context of desert as a distributive principle of criminal liability, the notion of accountability is entangled with that of moral responsibility and the idea of individual blameworthiness.²⁰⁹ The argument then follows that moral personhood isn’t just a subclass of legal personhood that can be found in distinct agents but a precondition to legal personhood insofar as we accept legal personhood to be the basis for legal accountability.

Though this Article’s empirical analysis will assess whether courts actually look at moral personhood as a condition in assigning legal personhood, I wish to push back on the suggestion that moral personhood is a precondition to legal personhood on the basis of two interrelated grounds. First, moral personhood relates to moral status and not necessarily to the ability to be held legally

206. Koops et al., *supra* note 4, at 548.

207. See Hicks, *supra* note 149, at 816 (first quoting Andreas B. Schwarz, *John Austin and the German Jurisprudence of His Time*, 1 *POLITICA* 178, 196 (1934); and then quoting Peter Stein, *Bentham, Austin and the German Pandectists*, in 3 *LA FORMAZIONE STORICA DEL DIRITTO MODERNO IN EUROPA* 1119, 1122–23 (Leo S. Olschki ed., 1977)).

208. See Hildebrandt, *supra* note 47, at 522; Abbott & Sarch, *supra* note 51, at 327 n.16, 342–43, 350; Sartor, *supra* note 196, at 275–76; Calverley, *supra* note 157, at 528–29.

209. See ELINOR MASON, *WAYS TO BE BLAMEWORTHY: RIGHTNESS, WRONGNESS, AND RESPONSIBILITY* 19, 24 & n.12, 158, 186 (2019); William J. FitzPatrick, *Unwitting Wrongdoing, Reasonable Expectations, and Blameworthiness*, in *RESPONSIBILITY: THE EPISTEMIC CONDITION* 29, 33–34 (Philip Robichaud & Jan Willem Wieland eds., 2017); William J. FitzPatrick, *Moral Responsibility and Normative Ignorance: Answering a New Skeptical Challenge*, 118 *ETHICS* 589, 601 (2008); JOHN MARTIN FISCHER & MARK RAVIZZA, *RESPONSIBILITY AND CONTROL: A THEORY OF MORAL RESPONSIBILITY* 2 & n.1, 29 (1998); PAGALLO, *supra* note 45, at 23, 52; Joseph L. Hoffmann, *On the Perils of Line-Drawing: Juveniles and the Death Penalty*, 40 *HASTINGS L.J.* 229, 247–48 (1989); Jeffrie G. Murphy, *Retribution, Justice, and Therapy: Essays in the Philosophy of Law*, in 16 *PHILOSOPHICAL STUDIES SERIES IN PHILOSOPHY*, at 77–78 (1979); ANDREW VON HIRSCH, *DOING JUSTICE: THE CHOICE OF PUNISHMENTS* 69, 71 (1976); WAYNE R. LAFAVE & AUSTIN W. SCOTT, JR., *HANDBOOK ON CRIMINAL LAW* § 5, at 24 (1972).

accountable.²¹⁰ Second, our legal system includes many examples in which questions of moral responsibility do not hinder the capacity of entities to legal personhood and in which legal personhood is not necessarily always entwined with legal accountability. Francis Kamm has proposed that an agent has moral status because this agent “count[s]’ morally in [its] own right” and has permission to conduct itself “for its own sake.”²¹¹ This is what, as Nick Bostrom suggests, distinguishes a human from, for instance, a rock.²¹² The rock does not have moral status and that is evident by the fact that we may treat it any way we like.²¹³ We can choose to throw it, crush it, put it in our pocket, and “subject it to any treatment . . . without any [specific] concern for the rock itself.”²¹⁴ Conversely, entities with moral status carry legitimate interests that society has to take into account when interacting with these entities and may also involve a set of constraints regarding the sphere of possible actions that other entities may perform against those with moral status.²¹⁵ For example, entities with moral status may have an inherent right to their life, to their property, to their bodily integrity, and so on.²¹⁶ This moral status effectively dictates whether a behavior undertaken against an entity is morally good or bad and thus allows entities to distinguish right from wrong.²¹⁷

To establish moral personhood as a precondition to legal accountability presumes that the only entities susceptible to punishment under the law are entities with moral status. Consequently, only entities with moral status can enjoy legal personhood as legal personhood is generally accepted as a precondition to legal accountability. However, our legal system is filled with instances in which entities with legal personhood don’t require moral status or any sense of moral responsibility.²¹⁸ For instance, corporations can be held liable and criminally responsible even though most agree that they don’t have moral

210. See Johnson, *supra* note 58, at 710.

211. F.M. KAMM, *INTRICATE ETHICS: RIGHTS, RESPONSIBILITIES AND PERMISSIBLE HARM* 227, 229 (2007) (emphasis omitted); see also Bostrom & Yudkowsky, *supra* note 24, at 321.

212. Bostrom & Yudkowsky, *supra* note 24, at 321.

213. *Id.*

214. *Id.*

215. *Id.*; see also Koops et al., *supra* note 4, at 517.

216. Bostrom & Yudkowsky, *supra* note 24, at 321.

217. See KAMM, *supra* note 211, at 227, 229, 232; Chopra & White, *supra* note 44, at 638.

218. See Chopra & White, *supra* note 44, at 638–39.

personhood to deserve punishment.²¹⁹ On the flipside, infants, who have very narrow legal rights and responsibilities nonetheless have legal personhood.²²⁰ Yet intelligent animals that have the capacity to learn right from wrong in the context of their relationship with their masters and can thus be punished for disobedience have not been accorded legal personhood.²²¹ Finally, strict liability regimes establish accountability absent from questions of fault entirely.²²² There is thus good reason in retaining, at least conceptually, skepticism over equating moral personhood with legal personhood.²²³

III. EMPIRICAL ANALYSIS

A. Introduction

Robert Geraci, based on Lawrence Solum and Woodrow Barfield's discussion, has suggested that as people increasingly interact with AI in their daily life through often anthropomorphic conceptions, they will be tempted to grant it legal rights and duties.²²⁴ As I discussed in the first part of this Article, lead scholars argue that since AI is intelligent, has sufficient levels of autonomy in making decisions, and is sufficiently aware to learn from own experience and to interact with other legal subjects, it may be granted legal personhood.²²⁵ But legal personhood is a legal and not factual or normative status, and to fully answer the question of whether AI can have legal personhood we need to shift our attention to the law. Doing so will not only provide us with a clearer legal standard but will also allow us to assess the degree

219. FRENCH, *supra* note 104, at 33, 38; Solum, *supra* note 8, at 1247–48.

220. Chopra & White, *supra* note 44, at 638; *see also In re Mars' Will*, 110 N.Y.S.2d 885, 889 (Sur. Ct. 1952); *Overland Cotton Mill Co. v. People*, 75 P. 924, 925 (Colo. 1904).

221. *See* Nonhuman Rts. Project, Inc. *ex rel. Tommy v. Lavery*, 54 N.Y.S.3d 392, 395-97 (N.Y. App. Div. 2017); Nonhuman Rts. Project, Inc. *ex rel. Hercules v. Stanley*, 16 N.Y.S.3d 898, 900–02, 911, 917 (Sup. Ct. 2015).

222. *Meyer v. Holley*, 537 U.S. 280, 285–86 (2003) (first citing *Burlington Indus., Inc. v. Ellerth*, 524 U.S. 742, 756 (1998); then citing *New Orleans, Mobile, & Chattanooga R.R. Co. v. Hanning*, 82 U.S. (15 Wall.) 649, 657 (1873); and then citing *Rosenthal & Co. v. Commodity Futures Trading Comm'n*, 802 F. 2d 963, 967 (7th Cir. 1986)); *Gollust v. Mendell*, 501 U.S. 115, 122 (1991) (citing *Foremost-McKesson, Inc. v. Provident Sec. Co.*, 423 U.S. 232, 251 (1976)).

223. *See Hicks*, *supra* note 149, at 816, 839, 842 (quoting Andreas B. Schwartz, *John Austin and the German Jurisprudence of His Time*, 1 POLITICA 178, 196 (1934)); Stein, *supra* note 207, at 1123.

224. Solum, *supra* note 8, at 1281–83; Čerka et al., *supra* note 44, at 689; *see also* ROBERT M. GERACI, APOCALYPTIC AI: VISIONS OF HEAVEN IN ROBOTICS, ARTIFICIAL INTELLIGENCE, AND VIRTUAL REALITY 122–23 (2010) (ebook).

225. Čerka et al., *supra* note 44, at 689–90.

to which the conditions that scholarship focuses on for acquisition of legal personhood track the ones courts have considered in attributing legal personhood to artificial entities.

This Part complements the discussion of legal personhood of Part II with an empirical legal analysis. In doing so, it goes beyond the main arguments of the scholarship that assess legal personhood for AI on the basis of “missing-something” arguments relating to theoretical concepts of personhood such as the ones described above of awareness, intentionality, and autonomy.²²⁶ Empirically assessing whether there is consonance or dissonance between theory and practice on the notion of legal personhood has the potential to enrich debates with tangible data reflecting the current state of the law. A clearer understanding of the legal framework will facilitate movement in theory, policy, and litigation in a direction that is more compatible with legal expectation.

This goal of this Article also informs the methodological approach it undertakes. This Article positions itself between metaphysical and condition-based approaches to inquiry. Whereas a metaphysical inquiry theoretically discusses the possible attributes that an artificial entity ought to possess to qualify as a legal person,²²⁷ a conditions-based approach looks for conditions under which an entity is positively treated as a legal person by the law.²²⁸ The first approach is interested in answering questions of why some entities have legal personhood over others, while the second approach acknowledges that legal personhood is a legal status and looks for the common denominators that entities with legal personhood share to establish a standard. This Article is premised on the idea that the best way to truly conceptualize legal personhood in U.S. law is to find the common area of overlap between these two approaches.²²⁹ By undertaking both a theoretical and empirical quest, this Article merges the two accounts by placing them face to face and identifying whether there is commonality or not to better understand legal personhood regarding AI entities.

This methodology, however, carries an important limitation. This Article does not undertake a pragmatic consequence-based

226. See Chopra & White, *supra* note 44, at 638.

227. See MICHAEL S. MOORE, *LAW AND PSYCHIATRY: RETHINKING THE RELATIONSHIP* 91 (1984); Čerka et al., *supra* note 44, at 692.

228. H.L.A. Hart, *Definition and Theory in Jurisprudence*, 70 *LAW Q. REV.* 37, 56 (1954); see also Allgrove, *supra* note 72, at 64–65.

229. See Allgrove, *supra* note 72, at 44–45.

approach, an approach seeking to answer questions such as what consequences of legal personhood are desirable for its conferral as a legal status on an entity.²³⁰ This is because the lens of this Article is more backward-looking in shedding light on normative debates and assessing their overlap with existing legal doctrine based on empirical findings. A consequence-based approach is largely forward-looking and policy-shaping, and therefore intended for a goal different than the one of this Article. But even though this Article doesn't undertake this approach *stricto sensu* in its methodology, the discussion of the data will carry, at times, pragmatic undertones given the socio-legal challenges that AI entities bring to the legal personhood debate.

B. Caselaw Search

This Article aims to identify the factors that courts consider when deciding whether an entity is a legal person. The data collected reflects U.S. caselaw from the U.S. Supreme Court, federal courts of appeals, federal district courts, and state courts that have considered what makes an artificial entity a legal person. I use Qualitative Content Analysis (QCA) to code and analyze this data with the intention of revealing patterns in what conditions courts have considered most instrumental in resolving questions of legal personhood and identifying the frequency at which they consider certain factors.

The caselaw search into what makes an entity a legal person began broadly and narrowed progressively. I first performed a search using the search term "legal person," specifically looking for cases that included mention of corporations and companies as artificial entities. I then searched the terms "legal person" and "artificial entities" together and excluded terms that related to fetuses and abortions to exclude biological entities. I excluded these terms because the conditions applied in biological persons cases used a different set of factors, terminology, and considerations than what I was looking for concerning artificial persons. I then narrowed the search of "legal person" and "legal person and artificial entities" down to before the year 1947 and the passage of 1 U.S.C. § 1. As stated by 1 U.S.C. § 1, "In determining the meaning of any Act of Congress the words 'person' and 'whoever' include corporations, companies, associations, firms, partnerships, societies, and joint stock companies, as well as

230. See *id.* at 36–37.

individuals.”²³¹ By narrowing my search before this date after the original wider search, I was able to focus on what courts determined was important in granting legal personhood to artificial entities before the passage of the statute that defined a legal person as including corporations and other similar types of artificial entities.

After performing an exhaustive caselaw search regarding legal persons and artificial entities, I began searching for other potentially relevant terms. The next search terms were “juridical entities” and “juridical persons.” By looking at these terms, I identified more caselaw on what conditions the courts considered when determining whether juridical person is subject to and recognized by the law. I searched the term “juridical entities” and “juridical persons,” first looking before 1947 and then expanding the search to include all years. When I stopped getting new caselaw through the searches, I recognized that I had completed the search and had an exhaustive list of the available caselaw.

C. *Qualitative Content Analysis*

QCA is a research method “for making replicable and valid inferences” from data to their context, with the purpose of providing knowledge and new insights.²³² By analyzing texts, one can develop categories that describe the phenomenon of legal personhood across courts and use these categories to identify legal personhood conditions. Using a deductive approach, I developed a structured categorization matrix to code the data according to categories, reviewed the data by applying this Article’s research question to it, and extracted relevant data for QCA.²³³ I ultimately arrived at a final list of fifty-three cases narrowed from the initial search, including federal supreme, appellate, and district courts, as well as state supreme and lower courts. Then, I coded the data for thematic content to interrogate how U.S. courts approach questions of legal personhood.

Through QCA, I identified common legal grounds courts relied on to resolve questions of legal personhood and described them using code words compiled in a codebook. For this type of analysis, I focused on the subject matter of the cases and not the

231. 1 U.S.C. § 1.

232. See KLAUS KRIPPENDORFF, *CONTENT ANALYSIS: AN INTRODUCTION TO ITS METHODOLOGY* 18–19 (Margaret H. Seawell et al. eds., 2d ed. 2004).

233. See Hsiu-Fang Hsieh & Sarah E. Shannon, *Three Approaches to Qualitative Content Analysis*, 15 *QUALITATIVE HEALTH RSCH.* 1277, 1281 (2005).

style, syntax, or other structure of the judicial opinions. I scrutinized the portions of the opinions that discussed the legal basis for finding an entity is a legal person when coding. This process enabled me to begin observing themes and patterns in the legal grounds that courts have used to define legal persons or resolve issues of legal personhood.

After the initial round of coding based on a careful distillation of the themes of the court's discussion of legal personhood, I went through several rounds of feedback loops to ensure the codes were truly being applied to the identical legal basis for decisions across different cases. In this process, I also refined the codebook so that it accurately represented the court's discussion of legal personhood while remaining succinct: Where multiple code words were identified as so similar that they were redundant, I collapsed them into a single code word. I also had several code words that were used only in a single case; however, these were still useful as they identified a basis for legal personhood that a court utilized that was not present in the other cases. After the final round of edits, I analyzed the final thirty-two code words into frequency distribution tables to assess the frequency in which each jurisdictional level had used a certain code word in adjudicating cases.

The codes used in this study that reflect conditions used by courts to determine legal personhood appear below along with an operational definition of each concept:²³⁴

1. *Right to property*: whether the artificial entity has the right to own property.
2. *Right to transact*: whether the artificial entity is able to engage in transactions in its own name.
3. *Context specific*: whether the artificial entity enjoys legal personhood on the basis of some contextual element (this is the term used verbatim by courts).
4. *Analogous to natural person*: whether the artificial entity has sufficiently similar characteristics to be considered akin to a natural person.
5. *Implicit in statute*: whether the type of artificial entity in question, though not explicitly included in statute, could be inferred to be covered by statute.
6. *Legal accountability*: whether the artificial entity can be held legally accountable.

234. For a discussion of the caselaw that gives rise to these codes, see *infra* Section III.D.

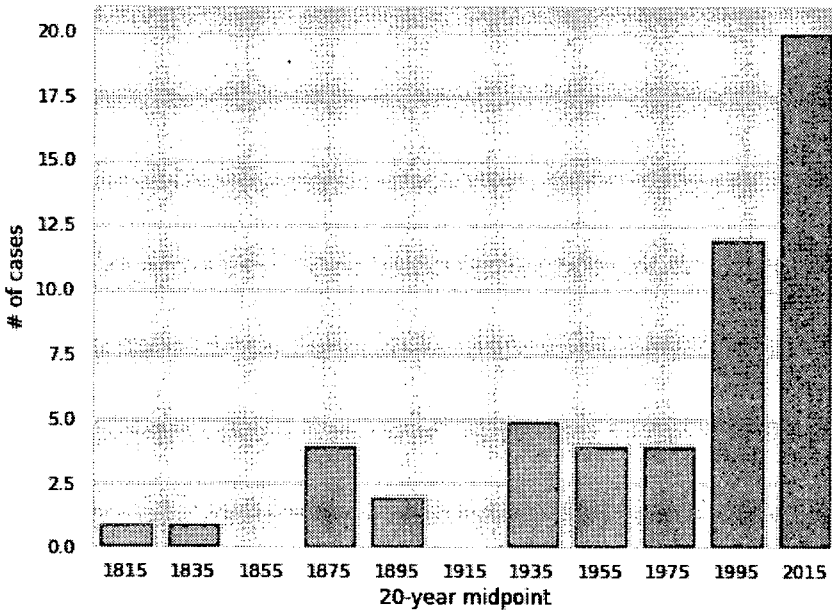
7. *Capacity for debt*: whether the artificial entity has the capacity to incur debt.
8. *Capacity for recovery*: whether the artificial entity has the capacity to recover debt owed to it.
9. *Citizenship*: whether the artificial entity is a citizen of a country.
10. *Constitutional rights*: whether the artificial entity can enjoy constitutional rights.
11. *Fiat of the state*: this is the term used verbatim by courts.
12. *Independent unit*: whether the artificial entity forms a unit independent from a larger unit—usually in relation to governmental entities.
13. *Irrelevance of creator*: the creator of an artificial entity is irrelevant for the determination of its legal personhood.
14. *Irrelevance of label*: the label under which the artificial entity operates is irrelevant for the determination of its legal personhood.
15. *Irrelevance of shape*: the shape of an artificial entity is irrelevant for the determination of its legal personhood.
16. *Irrelevance of size*: the size of an entity is irrelevant for the determination of its legal personhood.
17. *Legal chart*: whether the artificial entity has a legal chart that stipulates its regulation.
18. *Legal standing*: whether the artificial entity has legal standing before courts.
19. *Made up of individuals*: whether the artificial entity is an aggregation of natural persons.
20. *No autonomy*: that the artificial entity not having autonomy is a negative qualification for the determination of its legal personhood.
21. *No self-determination*: that the artificial entity not having self-determination is a negative qualification for the determination of its legal personhood.
22. *No self-representation rights*: that the artificial entity not having self-representation rights is a negative qualification for the determination of its legal personhood.
23. *Perpetuity*: whether the artificial entity can perpetually exist.

24. *Rights and duties*: whether the artificial entity has general rights and duties (this is the term used verbatim by courts).
25. *Right to contract*: whether the artificial entity has the right to contract with other entities.
26. *Right to counsel*: whether the artificial entity has the right to counsel.
27. *Right to sue and be sued*: whether the artificial entity has the right to sue and be sued.
28. *Self-representation*: whether the artificial entity can represent itself in a court of law.
29. *Societal responsibilities*: whether the artificial entity has responsibilities towards society.
30. *Spirit and purpose of statute*: that legal personhood is attributed to an artificial entity by the spirit and purpose of a statute.
31. *Statute based*: whether legal personhood for an artificial entity is based on a specific statute.
32. *1 U.S.C. § 1*: whether legal personhood for an artificial entity is based on 1 U.S.C. § 1.

D. Quantitative Data Analysis & Findings

The second part of this Article’s empirical analysis is descriptive and is based on several frequency analyses. In statistics, frequency represents the number of times an event occurs and analyzes, among others, measures of percentiles. Based on a total of fifty-three cases from both federal and state courts at the trial and appellate levels, there were thirty-two characteristics considered by the courts to determine whether artificial entities are legal persons. As a longitudinal matter, the majority of these cases are recent and when reflective or precedent represent the latest iteration by courts of the same jurisdictional level.

Majority of cases are recent



Out of these thirty-two characteristics, the top three most frequently considered characteristics among all fifty-three cases are that legal personhood is “statute-based,”²³⁵ that it is reflected

235. See, e.g., *Vt. Agency of Nat. Res. v. United States ex rel. Stevens*, 529 U.S. 765, 786 (2000) (discussing how a person is defined by statute 31 U.S.C § 3801(a)(6) and includes “any individual, partnership, corporation, association, or private organization” (quoting 31 U.S.C. § 3801(a)(6))); *Rowland v. Cal. Men’s Colony, Unit II Men’s Advisory Council*, 506 U.S. 194, 204 (1993) (discussing how the Dictionary Act includes corporations and unincorporated associations in the term “person”); *Pembina Consol. Silver Mining & Milling Co. v. Pennsylvania*, 125 U.S. 181, 187–88 (1888) (discussing how artificial personhood is determined by legislature in statutes); *Balt. & Ohio R.R. Co. v. Harris*, 79 U.S. (12 Wall.) 65, 81 (1870) (discussing how an artificial entity is deemed a person by the

in an entity's "right to sue and be sued,"²³⁶ and that when a statute does not explicitly include a specific entity as a legal person that

law); *United States v. Amedy*, 24 U.S. 392, 412 (1826) (discussing how the act extends legal personhood to corporations); *Ruppel v. CBS Corp.*, 701 F.3d 1176, 1181 (7th Cir. 2012) (discussing how under § 1442(a) Congress meant to include corporations as persons); *Isaacson v. Dow Chem. Co.*, 517 F.3d 129, 135–36 (2d Cir. 2008) (discussing how under the statute, persons includes corporations unless context excludes otherwise); *Lippoldt v. Cole*, 468 F.3d 1204, 1212 (10th Cir. 2006) (discussing that an entity is a person under the statute's language and purpose); *Cohn v. Rosenfeld*, 733 F.2d 625, 629 (9th Cir. 1984) (discussing how the law regards the *sociedad* as a juridical person); *Beckwith Elec. Co. v. Sebelius*, 960 F. Supp. 2d 1328, 1337 (M.D. Fla. 2013) (discussing how unless Congress intended to exclude corporations, corporations are considered persons under most statutes); *Angers ex rel. Angers v. Lafayette Consol. Gov't*, No. 07–0949, 2007 WL 2908805, at *2 (W.D. La. Oct. 3, 2007) (discussing how Louisiana civil law attributes legal personality to an entity); *Batiste v. Bonin*, No. 06–1352, 2007 WL 1791219, at *2 (W.D. La. June 13, 2007) (discussing how a juridical person has only the capacity that the law allows); *In re Estate of Mulero*, 143 F. Supp. 504, 505 (D.P.R. 1956) (discussing how the statute intends to include artificial and juridical persons in the term "person"); *In re Mfg. Lumbermen's Underwriters*, 18 F. Supp. 114, 123 (W.D. Mo. 1936) (discussing how the statute and context show the term "person" means artificial persons such as corporations); *Roberts v. Sewerage & Water Bd.*, 634 So. 2d 341, 347 (La. 1994) (discussing how a government agency is a juridical person when the law grants the entity the capacity to function independently); *Miller's Ex'r v. Commonwealth*, 68 Va. (27 Gratt.) 110, 114 (1876) (discussing how "[c]orporations are included in the term 'persons' unless explicitly exempted by 'the nature of the subject' or the statute"); *W. Union Tel. Co. v. Richmond*, 67 Va. (26 Gratt.) 1, 10 (1875) (discussing how corporations are persons when they are placed in a position identical to natural persons in the statute); *Seibert v. Alexander*, 829 S.E.2d 473, 477 (Ga. Ct. App. 2019) (discussing how the state statute recognizes three kinds of legal entities); *Boy Scouts of Am. Nat'l Found. v. Superior Court*, 206 Cal. App. 4th 428, 448 (Ct. App. 2012) (discussing how statutory context excluded entity from the term "person"); *Dejoie v. Medley*, 945 So. 2d 968, 972 (La. Ct. App. 2006) (discussing that to determine whether the defendants are juridical persons the court should consider the law that created them); *Cohort Energy Co. v. Caddo-Bossier Pars. Port Comm'n*, 852 So. 2d 1174, 1184 (La. Ct. App. 2003) (discussing that the term "person" as used in the statute must be determined by legislative purpose and history); *Brown v. State Farm Fire & Cas. Co.*, 804 So. 2d 41, 43–44 (La. Ct. App. 2001) (discussing how the Department of Insurance is a person under the statute); *Dugas v. Breaux Bridge Police Dep't*, 757 So. 2d 741, 743 (La. Ct. App. 2000) (discussing how a local government unit is a juridical person unless the statute says otherwise); *State v. Richard Knutson, Inc.*, 537 N.W.2d 420, 422 (Wis. Ct. App. 1995) (discussing how the statute includes artificial and natural persons when it is "within the spirit and purpose of the statute"); *City Council of Lafayette v. Bowen*, 649 So. 2d 611, 614 (La. Ct. App. 1994) (discussing the statute-based definition of legal personhood under in La. C.C. art. 24).

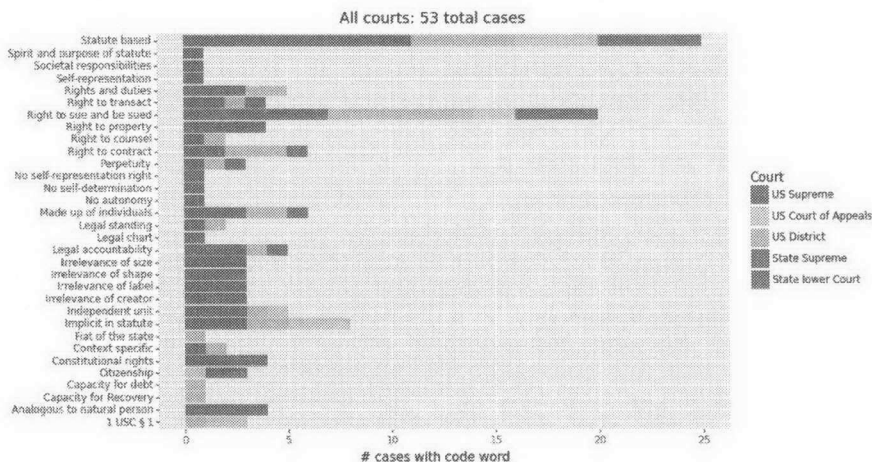
236. *Cook County v. United States ex rel. Chandler*, 538 U.S. 119, 125 (2003) (discussing how corporations are persons with the capacity to sue and be sued); *Puerto Rico v. Russell & Co.*, 288 U.S. 476, 481 (1933) (discussing how a *sociedad* is a juridical person with the ability to "sue and be sued"); *Balt. & Ohio R.R. Co.*, 79 U.S. (12 Wall.) at 81 (discussing how a corporation is deemed a person and may sue and be sued); *Bank of U.S. v. Deveaux*, 9 U.S. (5 Cranch) 61, 73 (1809) (discussing how a corporation is not a person at law because it cannot sue or be sued); *Peoples State Bank v. Gen. Elec. Cap. Corp. (In re Ark-La-Tex Timber Co.)*, 482 F.3d 319, 335 (5th Cir. 2007) (discussing how a corporation has the liability and obligations of natural juridical persons); *Ex parte Edelstein*, 30 F.2d 636, 638 (2d Cir. 1929) (discussing how an unincorporated association as a legal person can

this entity can be otherwise read to be “implicit in statute.”²³⁷ These terms showed up in 47%, 40%, and 15% of all cases respectively. Although the condition “implicit in statute” falls within the top three most important characteristics that determine whether an artificial entity is a legal entity, it is important to note that this characteristic appears in 25% fewer of

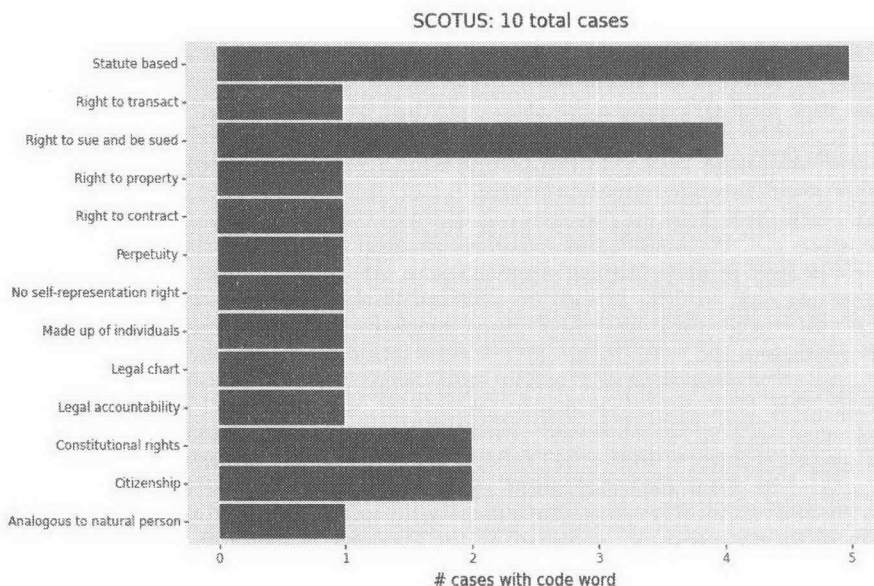
sue and be sued); *Borusan Makina Ve Güç Sistemleri Sanayi Ve Ticaret A.Ş. v. Hoist Litruck Mfg.*, 338 F. Supp. 3d 738, 739 (N.D. Ill. 2018) (discussing how an internationally formed corporation has the elements of personhood of the right to sue and be sued); *W. Afr. Ventures Ltd. v. Ranger Offshore, Inc.*, No. 4:17-CV-00548, 2017 WL 6405625, at *1 (S.D. Tex. Dec. 13, 2017) (discussing how personhood includes the right to litigate and that corporations are entities with legal personhood); *Petropolous v. FCA US, LLC*, No. 17-CV-0398, 2017 WL 2889303, at *3 (S.D. Cal. July 7, 2017) (discussing when the court considers whether an entity is a legal person, it must look at the corporate characteristic of the ability to sue and be sued); *Griffith v. Louisiana*, 808 F. Supp. 2d 926, 933 (E.D. La. 2011) (discussing how an entity must be a juridical person to have the ability to sue and be sued); *In re Estate of Mulero*, 143 F. Supp. at 505 (discussing how artificial and juridical persons have the right to sue and be sued); *Froelich & Kuttner, of Manila, P.I. v. Sutherland*, 22 F.2d 870, 872 (D.C. Cir. 1927) (discussing how a partnership as a juridical person may sue and be sued as the partnership); *County of San Mateo v. S. Pac. R.R. Co.*, 13 F. 722, 746 (C.C.D. Cal. 1882) (discussing how corporations are legal persons with the ability to sue and be sued in the corporate name); *Fid. Tr. Co. v. BVD Assocs.*, 492 A.2d 180, 186 (Conn. 1985) (discussing how a *sociedad* is a legal person based on the ability to sue and be sued); *Amtorg Trading Corp. v. Camden Fibre Mills, Inc.*, 109 N.E.2d 606, 607 (N.Y. 1952) (discussing how a corporation is a juridical person with the ability to sue and be sued); *Larson v. Sylvester*, 282 Mass. 352, 357–58 (Mass. 1933) (discussing how a trust is not a legal personality and cannot sue and be sued as the trust); *Seibert*, 829 S.E.2d at 477 (discussing that a legal entity can be a quasi-artificial person that the law recognizes as having the ability to sue and be sued); *Dejoie*, 945 So. 2d at 972 (discussing how an entity must be a juridical person to be able to sue and be sued); *Dugas*, 757 So. 2d at 743 (discussing how an entity must be a juridical person to be able to sue and be sued); *City Council of Lafayette*, 649 So. 2d at 612 (“City Council is not a juridical person under La.C.C. art. 24 endowed with the right to sue and be sued.”).

237. *Korte v. Sebelius*, 735 F.3d 654, 674 (7th Cir. 2013) (discussing how under the Dictionary Act, the word “person” includes artificial legal person such as corporations unless context or plain language communicates otherwise); *Ruppel*, 701 F.3d at 1181 (discussing how artificial persons are included in statutes where there is not explicit language otherwise or evidence of contrary legislative intent); *Isaacson*, 517 F.3d at 136 (discussing how the word “person” in a statute includes corporations unless the context indicates otherwise); *Beckwith Elec. Co.*, 960 F. Supp. 2d at 1337 (discussing how the word “person” has been defined to include corporations and other legal entities under the Dictionary Act and, absent contrary explicit language, statutes typically apply to legal persons); *In re Estate of Mulero*, 143 F. Supp. at 505 (discussing how artificial and juridical persons is included in the term “person” in the statute); *Miller’s Exr.*, 68 Va. (27 Gratt.) at 114 (discussing that corporations are automatically included in a statute under the words “person” unless specifically exempted by the statutory language or the nature of the statute); *Boy Scouts of Am. Nat’l Found.*, 206 Cal. App. 4th at 448 (discussing that in a statute, “person” does not include artificial legal persons like corporations where distinctions were specifically made between natural and artificial person); *Dejoie*, 945 So. 2d at 972 (discussing that a government unit is a juridical entity unless law states otherwise).

the total cases than the second most important condition, the “right to sue and be sued.”



To determine whether the characteristics that are most important in determining whether an artificial entity is a legal person are consistent across various courts and federal versus state jurisdictions, I next categorized the fifty-three cases by court. There are five categories of case decisions: those decided by the U.S. Supreme Court, circuit courts, district courts, state supreme courts, and lower-level state courts.



Out of the fifty-three cases analyzed, ten of them were U.S. Supreme Court cases. Based solely on the ten Supreme Court

cases determining whether an artificial entity is a legal person, the two most frequently considered conditions in making such a determination are “statute-based”²³⁸ and “right to sue and be sued,”²³⁹ which appear in 50% and 40% of U.S. Supreme Court cases respectively. Two conditions tied for third place: that the entity enjoy “citizenship”²⁴⁰ and “constitutional rights,”²⁴¹ which each are discussed in 20% of the U.S. Supreme Court cases. Unlike the general sample size of cases, where the condition “implicit in statute” was among the top three most important conditions in determining whether an artificial entity is a legal person, this condition was not considered once in any of the Supreme Court cases. The eight other conditions considered in only one case each are an entity’s “right to property,”²⁴² “right to transact,”²⁴³ that an entity be “analogous to a natural person,”²⁴⁴ that an entity can bear “legal accountability,”²⁴⁵ that an entity is based on a “legal

238. *Vt. Agency of Nat. Res.*, 529 U.S. at 786 (discussing how a person is defined by statute 31 U.S.C. § 3801(a)(6) and includes “any individual, partnership, corporation, association, or private organization”); *Rowland*, 506 U.S. at 204 (discussing how the Dictionary Act includes corporations and unincorporated associations in the term “person”); *Pembina*, 125 U.S. at 187–88 (discussing how artificial persons are determined by legislature through statutes); *Balt. & Ohio R.R. Co.*, 79 U.S. (12 Wall.) at 81 (discussing how an artificial entity is deemed a person by law); *Amedy*, 24 U.S. at 412 (discussing how the Act extends legal personhood to corporations).

239. *Cook County*, 538 U.S. at 125 (discussing how corporations are persons with the capacity to sue and be sued); *Puerto Rico*, 288 U.S. at 481 (discussing how a *sociedad* is a juridical person with the ability to sue and be sued); *Balt. & Ohio R.R. Co.*, 79 U.S. (12 Wall.) at 81 (discussing how a corporation is deemed a person and may sue and be sued); *Bank of U.S.*, 9 U.S. (5 Cranch) at 73 (discussing how a corporation is not a person at law because it cannot sue or be sued).

240. *Carden v. Arkoma Assocs.*, 494 U.S. 185, 189 (1990) (discussing how the legal treatment of corporations as citizens under the law is not usually extended to other entities); *Bank of U.S.*, 9 U.S. (5 Cranch) at 73 (discussing citizenship as a characteristic of legal personhood).

241. *Burwell v. Hobby Lobby Stores, Inc.*, 573 U.S. 682, 706–07 (2014) (discussing how a corporation is “a form of organization used by human beings” and Fourth Amendment protections have been extended to corporations to protect the humans within the corporation); *Bank of U.S.*, 9 U.S. (5 Cranch) at 73 (discussing how an entity that is considered a legal person possesses “political rights” and owes “allegiance to some state”).

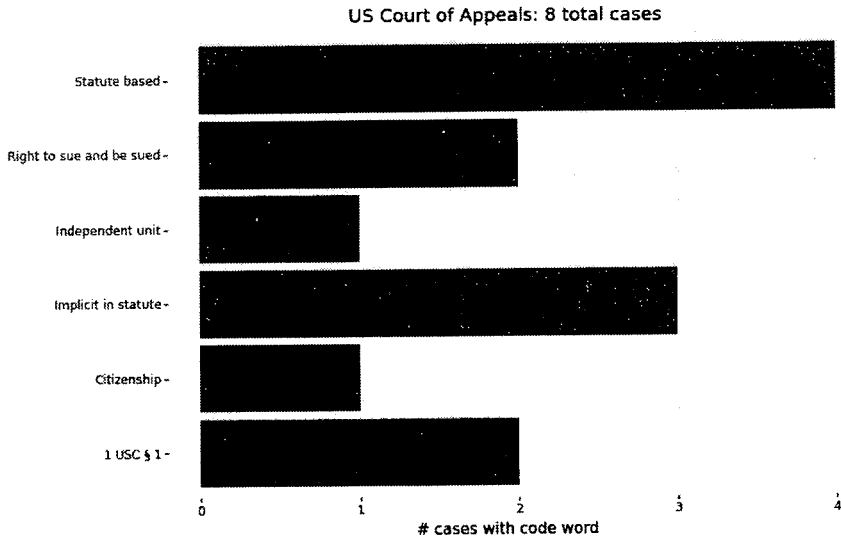
242. *Puerto Rico*, 288 U.S. at 481 (discussing the ability to own property as one of the characteristics of juridical personhood).

243. *Id.* (discussing the ability to transact business as one of the characteristics of juridical personhood).

244. *Pembina Consol. Silver Mining & Milling Co. v. Pennsylvania*, 125 U.S. 181, 187–88 (1888) (“[A] grant of corporate existence was a grant of special privileges to the corporators, enabling them to act for certain specified purposes as a single individual . . .”).

245. *Bank of U.S.*, 9 U.S. (5 Cranch) at 73 (discussing how the inability to violate the law is an indication that an entity is not a legal person that can come before a court of law).

chart,”²⁴⁶ that is a legal person if it is “made up of individuals,”²⁴⁷ that an entity enjoys “perpetuity,”²⁴⁸ and “right to contract.”²⁴⁹



Eight of the fifty-three cases analyzed were decided by a U.S. circuit court. In cases decided by the circuit courts, the two most important conditions in determining whether an artificial entity is a legal person are “statute-based”²⁵⁰ and “implicit in statute,”²⁵¹ which appear in 50% and 38% of circuit court decisions

246. *Burwell*, 573 U.S. at 706–07 (discussing how a corporation is a form of organization of individuals with a desired goal guided by a specific body of law).

247. *Id.* at 706 (“[I]t is important to keep in mind that the purpose of this fiction is to provide protection for human beings. A corporation is simply a form of organization used by human beings to achieve desired ends.”).

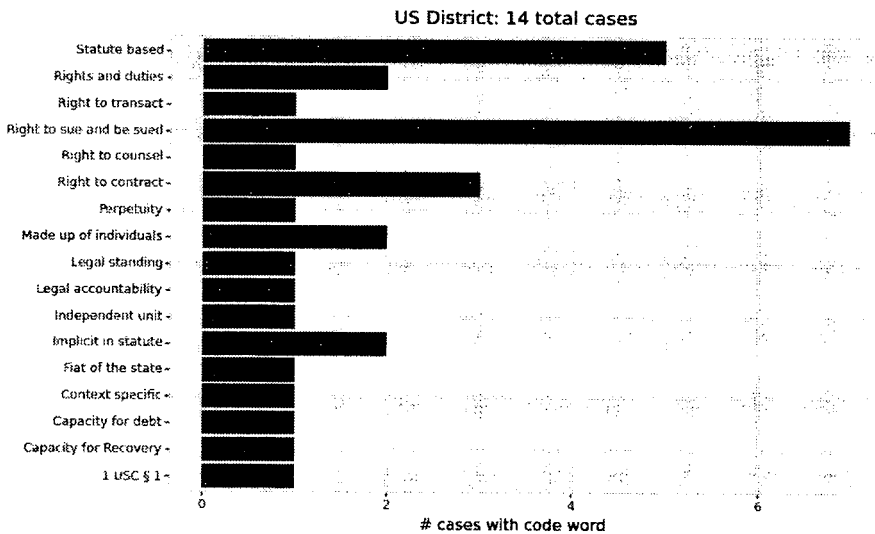
248. *Bank of U.S.*, 9 U.S. (5 Cranch) at 73 (discussing how an entity cannot sue in circuit court because it never dies).

249. *Puerto Rico v. Russell & Co.*, 288 U.S. 476, 481 (1933) (discussing the ability to contract as one of the characteristics of juridical personhood).

250. *Ruppel v. CBS Corp.*, 701 F.3d 1176, 1181 (7th Cir. 2012) (discussing how under § 1442(a) Congress meant to include corporations as persons); *Isaacson v. Dow Chem. Co.*, 517 F.3d 129, 135–36 (2d Cir. 2008) (discussing how under the statute persons includes corporations unless context excludes otherwise); *Lippoldt v. Cole*, 468 F.3d 1204, 1212 (10th Cir. 2006) (discussing that an entity is a person under the statutes language and person); *Cohn v. Rosenfeld*, 733 F.2d 625, 629 (9th Cir. 1984) (discussing how the law regards the *sociedad* as a juridical person).

251. *Korte v. Sebelius*, 735 F.3d 654, 674 (7th Cir. 2013) (discussing how under the Dictionary Act, the word “person” includes artificial legal person such as corporations unless context or plain language communicates otherwise); *Ruppel*, 701 F.3d at 1181 (discussing how artificial persons are included in statutes where there is not explicit language otherwise or evidence of contrary legislative intent); *Isaacson*, 517 F.3d at 136 (discussing how the word “person” in a statute includes corporations unless the context indicates otherwise).

respectively. Two conditions, the “right to sue and be sued”²⁵² and an entity falling under “1 U.S.C. § 1,”²⁵³ tie for third as the most important condition among circuit court determinations of legal personhood by appearing in 25% of the cases analyzed. The two other characteristics mentioned in only one case each are “citizenship”²⁵⁴ and that an entity represents an “independent unit” separate from a larger entity that may encompass it.²⁵⁵ It is interesting to note that circuit court decisions are the only subcategory of cases that includes the condition “implicit in statute” among its top three most important characteristics, which mirrors the trend reflected by the full pool of the cases.



Fourteen of the fifty-three cases analyzed were U.S. district court decisions. Among the fourteen cases, there are a total of seventeen characteristics considered to determine whether an

252. *Peoples State Bank v. Gen. Elec. Cap. Corp. (In re Ark-La-Tex Timber Co.)*, 482 F.3d 319, 335 (5th Cir. 2007) (discussing how a corporation is a juridical person able to sue and be sued and has the liability and obligations of natural juridical persons); *Ex parte Edelstein*, 30 F.2d 636, 638 (2d. Cir. 1929) (discussing how an unincorporated association as a legal person can sue and be sued).

253. *Korte*, 735 F.3d at 674 (discussing how under the Dictionary Act, the word “person” includes artificial legal persons such as corporations unless context or plain language communicates otherwise); *Isaacson*, 517 F.3d at 135–36 (discussing how “1 U.S.C. § 1 establishes a baseline presumption that the term ‘person’ includes corporate persons” when interpreting statutes).

254. *Ex parte Edelstein*, 30 F.2d at 638 (discussing how the unincorporated association is treated as a legal person and a citizen).

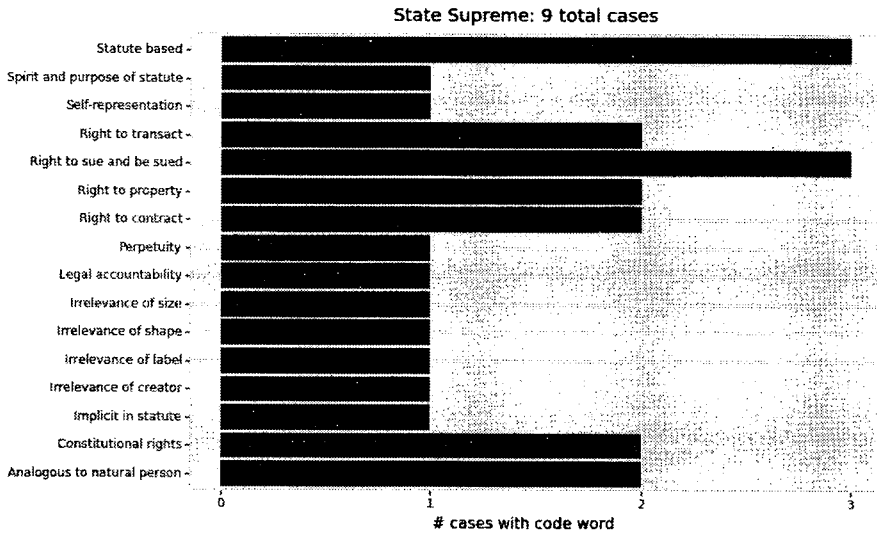
255. *Harrison-Halsted Cmty. Grp., Inc. v. Hous. & Home Fin. Agency*, 310 F.2d 99, 106 (7th Cir. 1962) (discussing that an agency is not a judicial person because it is a representative of the government).

artificial entity is a legal person. The three most important characteristics amongst these cases in determining whether an artificial entity is a legal person are the “right to sue and be sued,”²⁵⁶ “statute-based,”²⁵⁷ and the “right to contract.”²⁵⁸ These characteristics were discussed in 50%, 36%, and 21% each.

256. *Borusan Makina Ve Güç Sistemleri Sanayi Ve Ticaret A.Ş. v. Hoist Litruck Mfg.*, 338 F. Supp. 3d 738, 739 (N.D. Ill. 2018) (discussing how an internationally formed business entity has the elements of personhood of the right to sue and be sued); *W. Afr. Ventures Ltd. v. Ranger Offshore, Inc.*, No. 4:17-CV-00548, 2017 WL 6405625, at *1 (S.D. Tex. Dec. 13, 2017) (discussing how personhood includes the right to litigate and that corporations are entities with legal personhood); *Petropolous v. FCA US, LLC*, No. 17-CV-0398, 2017 WL 2889303, at *3 (S.D. Cal. July 7, 2017) (discussing how when the court considers whether an entity is a legal person it must look at the corporate characteristics of the ability to sue and be sued); *Griffith v. Louisiana*, 808 F. Supp. 2d 926, 933 (E.D. La. 2011) (discussing how an entity must be a juridical person to have the ability to sue and be sued); *In re Estate of Mulero*, 143 F. Supp. 504, 505 (D.P.R. 1956) (discussing how artificial and juridical persons have the right to sue and be sued); *Froelich & Kuttner, of Manila, P.I. v. Sutherland*, 22 F.2d 870, 872 (D.C. Cir. 1927) (discussing how a partnership as a juridical person may sue and be sued as the partnership); *County of San Mateo v. S. Pac. R.R. Co.*, 13 F. 722, 746 (C.C.D. Cal. 1882) (discussing how corporations are legal persons with the ability to sue and be sued in the corporate name).

257. *Beckwith Elec. Co. v. Sebelius*, 960 F. Supp. 2d 1328, 1337 (M.D. Fla. 2013) (discussing how unless Congress intended to exclude corporations, corporations are considered persons under most statutes); *Angers ex rel. Angers v. Lafayette Consol. Gov't*, No. 07-0949, 2007 WL 2908805, at *2 (W.D. La. Oct. 3, 2007) (discussing how the law attributes legal personality to an entity); *Batiste v. Bonin*, No. 06-1352, 2007 WL 1791219, at *2 (W.D. La. June 13, 2007) (discussing how a juridical person has only the capacity that the law allows); *In re Estate of Mulero*, 143 F. Supp. at 505 (discussing how the statute intends to include artificial and juridical persons in the term “person”); *In re Mfg. Lumbermen's Underwriters*, 18 F. Supp. 114, 123 (W.D. Mo. 1936) (discussing how the statute and context show the term “person” means artificial persons such as corporations).

258. *Borusan Makina Ve Güç Sistemleri Sanayi Ve Ticaret A.Ş.*, 338 F. Supp. 3d at 739 (discussing the right to contract as one of the characteristics indicative of whether an entity is a corporation); *W. Afr. Ventures Ltd.*, 2017 WL 6405625, at *1 (defining personhood in a parenthetical as the right to contract and litigate in an entity's own name); *County of San Mateo*, 13 F. at 746 (discussing how a corporation needs the right to contract in order to conduct business on behalf of its shareholders).

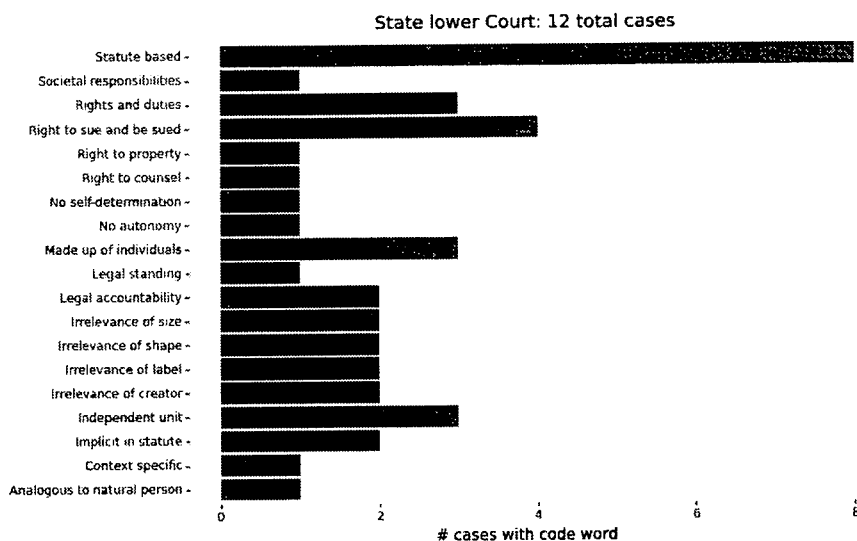


Nine of the fifty-three cases analyzed were decided by state supreme courts. The nine cases discuss sixteen conditions to determine whether an artificial entity has legal personhood. The “right to sue and be sued”²⁵⁹ and “statute-based”²⁶⁰ are the two most frequently discussed conditions in state supreme court cases: both are discussed in 33% of the cases analyzed. There is not a clear second or third most important condition among these cases because there are five conditions that tie for second by being discussed in 22% of cases. These five conditions are “right to

259. *Fid. Tr. Co. v. BVD Assocs.*, 492 A.2d 180, 186 (Conn. 1985) (discussing how a *sociedad* is a legal person based on the ability to sue and be sued); *Amtorg Trading Corp. v. Camden Fibre Mills, Inc.*, 109 N.E.2d 606, 607 (N.Y. 1952) (discussing how a corporation is a juridical person with the ability to sue and be sued); *Larson v. Sylvester*, 185 N.E. 44, 45-46 (Mass. 1933) (discussing how trust is not a legal personality and therefore cannot sue and be sued as the trust).

260. *Roberts v. Sewerage & Water Bd.*, 634 So. 2d 341, 346 (La. 1994) (discussing how a government agency is a juridical person when the law grants the entity the capacity and to function independently); *Miller’s Ex’r v. Commonwealth*, 68 Va. (27 Gratt.) 110, 114 (1876) (discussing how corporations are included in the term “persons” unless explicitly exempted by the nature or subject of the statute); *W. Union Tel. Co. v. City of Richmond*, 67 Va. (26 Gratt.) 1, 10 (1875) (discussing how corporations are persons when they are placed in a position identical to natural persons in the statute).

transact,"²⁶¹ "right to property,"²⁶² "analogous to natural person,"²⁶³ "right to contract,"²⁶⁴ and "constitutional rights."²⁶⁵



Finally, the remaining twelve of the fifty-three cases analyzed were decided by lower state courts. This category includes intermediate appellate courts and trial courts. These twelve cases also address eighteen conditions to determine whether an artificial entity has legal personhood. The two conditions most frequently

261. *Town of Dartmouth v. Greater New Bedford Reg'l Vocational Tech. High Sch. Dist.*, 961 N.E.2d 83, 96 (Mass. 2012) (discussing how an entity that engages in commercial and business transactions is a legal person); *Fid. Tr. Co.*, 492 A.2d at 186 (discussing the ability of an entity to transact business as an indication of legal personhood).

262. *Fid. Tr. Co.*, 492 A.2d at 186 (discussing the ability to own property as one of the characteristics of a legal person); *Amtorg Trading Corp.*, 109 N.E.2d at 607 (discussing right to own property as one of several characteristics that define a juridical person).

263. *Overland Cotton Mill Co. v. People*, 75 P. 924, 925 (Colo. 1904) (discussing how the word "person" in a statute applies to both natural and legal persons where the statute does not explicitly specify otherwise); *W. Union Tel. Co.*, 67 Va. (26 Gratt.) at 10 (discussing how corporations are included in a statute expressly applying to natural persons where the corporations end up in circumstances identical to that of natural persons the statute applies to).

264. *Town of Dartmouth*, 961 N.E.2d at 96 (discussing that the ability to enter commercial transactions is an indication of natural or artificial personhood); *Amtorg Trading Corp.*, 109 N.E.2d at 607 (discussing how the ability to contract is a characteristic of a legal person).

265. *Anderson's Paving, Inc. v. Hayes*, 295 S.E.2d 805, 808 (W. Va. 1982) (McGraw, J., dissenting) (discussing how extension of constitutional rights to a corporation is limited in context to instances where the right is "necessarily incidental to [the] corporation's existence"); *Amtorg Trading Corp.*, 109 N.E.2d at 607 (discussing that a juridical person has the power to conduct its own elections).

considered among this category of cases are “statute-based”²⁶⁶ and “right to sue and be sued,”²⁶⁷ which appear in 67% and 33% of cases respectively. The three conditions tied for the third most frequently discussed among lower state court cases are “made up of individuals,”²⁶⁸ “rights and duties,”²⁶⁹ and “independent unit,”²⁷⁰ which are discussed in 25% of cases.

Overall, the top conditions that courts take into account when determining whether an artificial entity is a legal person are:

266. *Boy Scouts of Am. Nat’l Found. v. Superior Court*, 206 Cal. App. 4th 428, 448 (Ct. App. 2012) (discussing how statutory context excluded entity from the term “person”); *Seibert v. Alexander*, 829 S.E.2d 473, 477 (Ga. Ct. App. 2019) (discussing how the state statute recognizes three kinds of legal entities); *Cohort Energy Co. v. Caddo-Bossier Pars. Port Comm’n*, 852 So. 2d 1174, 1184 (La. Ct. App. 2003) (discussing that the term “person” as used in the statute must be determined by legislative purpose and history); *Brown v. State Farm Fire & Cas. Co.*, 804 So. 2d 41, 43–44 (La. Ct. App. 2001) (discussing how the Department of Insurance is a person under the statute); *Dugas v. Breaux Bridge Police Dep’t*, 757 So. 2d 741, 743 (La. Ct. App. 2000) (discussing how a local government unit is a juridical person unless the statute says otherwise); *State v. Richard Knutson, Inc.*, 537 N.W.2d 420, 422 (Wis. Ct. App. 1995) (discussing how statute includes artificial and natural persons when it is “within the spirit and purpose of the statute”); *City Council of Lafayette v. Bowen*, 649 So. 2d 611, 614 (La. Ct. App. 1994) (discussing the statute-based definition of legal personhood under La. C.C. art. 24).

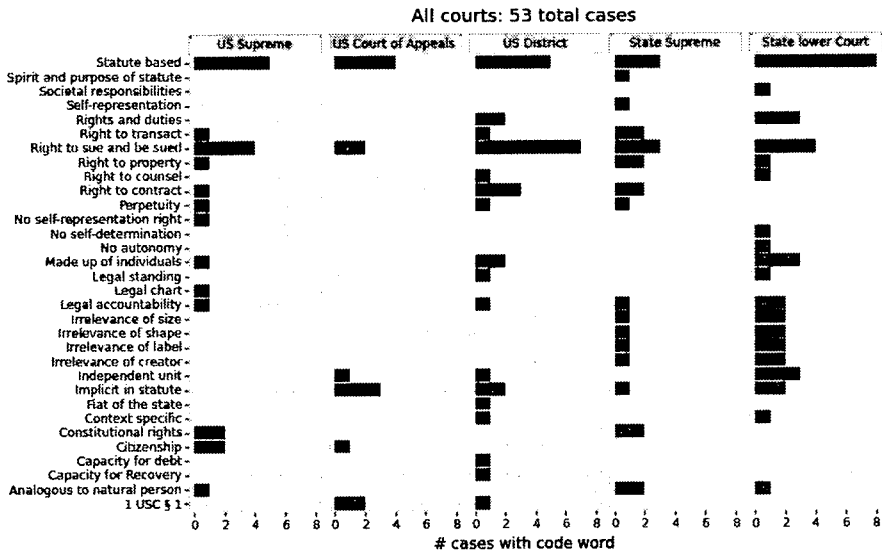
267. *Seibert*, 829 S.E.2d at 477 (discussing that a legal entity can be a quasi-artificial person that the law recognizes as having the ability to sue and be sued); *Dejoie v. Medley*, 945 So. 2d 968, 972 (La. Ct. App. 2006) (discussing how an entity must be a juridical person to be able to sue and be sued); *Dugas*, 757 So. 2d at 743 (discussing how an entity must be a juridical person to be able to sue and be sued); *City Council of Lafayette*, 649 So. 2d at 612 (“City Council is not a juridical person under La. C.C. art. 24 endowed with the right to sue and be sued.”).

268. *Nonhuman Rts. Project, Inc. ex rel. Tommy v. Lavery*, 54 N.Y.S.3d 392, 395–97 (N.Y. App. Div. 2017) (discussing how a corporation is a legal person made up of individual shareholders); *Nonhuman Rts. Project, Inc. ex rel. Hercules v. Stanley*, 16 N.Y.S.3d 898, 911 (N.Y. Sup. Ct. 2015) (explaining that some entities with legal personhood are composed of humans); *Brown*, 804 So. 2d at 44 (reasoning that the personality of a juridical person is separate from those of its members).

269. *Tommy*, 54 N.Y.S.3d at 394–95 (discussing how chimpanzees are not legal persons because chimpanzees cannot bear any legal duties); *Hercules*, 16 N.Y.S.3d at 912 (discussing how allocation of certain rights under the law can grant the status of legal personhood); *Cohort Energy Co.*, 852 So. 2d at 1185 (discussing how the status of legal personhood is conferred in part by the allocation of certain legal rights and duties to corporations or other entities).

270. *Harrison-Halsted Cmty. Grp., Inc. v. Hous. & Home Fin. Agency*, 310 F.2d 99 (7th Cir. 1962) (discussing that an agency is not a judicial person because it is a representative of the government); *Batiste v. Bonin*, No. 06–1352, 2007 WL 1791219 (W.D. La. 2007) (discussing that a local government unit may be a juridical person if it can function separately and independently from other governmental agencies); *Dejoie v. Medley*, 945 So. 2d 968 (La. 2006) (discussing how an entity is a juridical person if it is a separate and distinct from other governmental agencies); *Dugas v. City of Breaux Bridge Police Dep’t*, 757 So. 2d 741 (La. Ct. App. 2000) (discussing how an entity is an juridical person if it is separate and distinct from other government entities and it is able to function independently.); *City Council of City of Lafayette v. Bowen*, 649 So. 2d 611 (La. Ct. App. 1994).

whether legal personhood is conferred on the entity directly by statute; whether, if not conferred directly, legal personhood can be read implicitly in existing statutes for other entities, if the artificial entity can sue and be sued; and finally whether the entity is an aggregate of natural persons. As expected, a statutory basis for legal personhood is one of the two clearest ways to successfully argue that an artificial entity is a legal person. The other strongest way to argue in favor of legal personhood is by showing that the artificial entity can sue and be sued. Among all cases evaluated, there are thirty-two distinct conditions considered, some of which are only discussed in one of all cases. Therefore, despite some top conditions arising out of the quantitative analysis, there are many disparate conditions that courts look to when determining legal personhood.



Fortunately, there are observable trends in the data that provide insights into the formation and determination of legal personhood. The consideration of legal personhood conferral by statute was used in about half the cases and in the majority of U.S. Supreme Court cases. Similarly, the condition for capacity to sue and be sued was discussed in about half of all cases analyzed and in one-third of all U.S. Supreme Court cases. In some cases, this right to sue and be sued was identified as a right of legal personhood that was created by statute. These results show that legal personhood in the majority of cases lies in the hands of legislators. This is an important result given the relative scarcity of clear statutory provisions regarding legal personhood. The

conditions the research identifies may provide a framework into what considerations a legislature ought to take into account before conferring legal personhood on entities other than corporations in the future.

My findings also warrant an approach to the question of conferring legal personhood on AI entities that is more skeptical and cautious than the proposals of certain lead voices in the scholarship for AI personhood and liability.²⁷¹ This more cautious approach is critical given the evident gap between scholarship, on the one hand, and practice, on the other, as my data reflect. A trend identified across all cases and largely in state courts and federal district courts is the condition that an entity be an aggregate of individuals to have legal personhood.²⁷² This condition is particularly instructive in the case of AI entities given that, unlike other artificial entities such as corporations, AI entities are not the sum of other legal persons. Consider how, as Part II of this paper discusses, theory focuses on the conditions of autonomy, intelligence, and awareness as key for AI legal personhood.²⁷³ Perhaps with the exception of the condition for an entity to be “analogous to natural persons” that appears in 6% of all cases and notably in 25% of cases in United States courts of appeals, the data confirm that for courts, legal responsibility for artificial persons remains reducible to the natural persons that comprise them as the main source of their action.²⁷⁴ What is more, conditions relating to autonomy, intelligence, and awareness are almost absent from the courts’ consideration of legal personhood for artificial entities. The only exception being autonomy, which is considered as a condition for legal personhood in 2% of all cases.

Another interesting pattern the data reveal is what I will call the circularity problem of legal personhood. Throughout the two

271. See Asaro, *supra* note 8, at 169–70; Chopra & White, *supra* note 44 (arguing that AI could and should be given legal personality in near future); Frank, *supra* note 8, at 625, 654; Floridi & Sanders, *supra* note 8, at 373; Alaiari & Vellino, *supra* note 8 (“[N]on-predictability and autonomy may confer a greater degree of responsibility to the machine.”); HALLEVY (2015), *supra* note 8, at 22–23; Hallevy (2012), *supra* note 8, at 208; Wurah, *supra* note 8, at 67; Laukyte, *supra* note 8, at 68; Solaiman, *supra* note 8, at 165; Mulligan, *supra* note 8, at 590; Solum, *supra* note 8, at 1245.

272. These data raise interesting questions on whether legal personhood plays different roles in federal and state laws, particularly in relation to civil and criminal responsibility that fall outside the scope of this paper. *But cf.* Steven Walt & William S. Laufer, *Why Personhood Doesn’t Matter: Corporate Criminal Liability and Sanctions*, 18 AM. J. CRIM. L. 263, 265–67 (1991) (discussing the role of personhood in federal and state corporate criminal law).

273. See *supra* Part II.

274. See Pagallo, *supra* note 140, at 349.

Parts of this Article, I have argued that there is not only significant theoretical division on what the constituent elements of legal personhood are but also significant dissonance between theory and practice and within practice itself. Beyond identifying and compiling the conditions for legal personhood through the QCA, it is important to also address these conditions critically. Consider, for instance, some of the conditions that courts have looked for in deciding whether an entity enjoys legal personhood, such as whether the entity has the "right to sue and be sued," the "right to contract," or "constitutional rights." While this may be a reflection of the realist theory of legal personhood, these are conditions that an entity that already enjoys legal personhood possesses but at the same time courts use them to positively answer the question of legal personhood for an unresolved case. This is the issue of circularity in legal personhood.

The circularity problem may be, in part, explained if one looks at the legal development of artificial entities and particularly corporations as an example of increased pragmatism on the part of the courts. That is, corporations already presented a socio-legal phenomenon with existing legal effects. With few and incoherent statutory mandates on how to treat these entities, courts have had to find a way to normalize corporations as a legal phenomenon. To do so, courts have looked for conditions that these entities already *de facto* enjoyed and legitimized them. Consider also some of the theories of legal personhood. They, too, reflect, likely unintentionally, this circularity. The fiction theory of legal personhood,²⁷⁵ or the realist theory,²⁷⁶ while diametrically opposite to one another, share a very important common foundation: the idea that artificial entities exist and act in certain ways, ways that are commonly covered by the law, before the law actually covers them. The slower and more backward-looking quality of the law as well as of judicial decision making has further reinforced the circularity problem. It is, however, an important flaw to consider when deciding where to place a new category of artificial entities, AI entities, within the legal system.

In the absence of legislation, there is a larger pool of conditions that courts consider in conferring legal personhood on an artificial entity. This variability of conditions raises issues of legal indeterminacy, uncertainty, and potential arbitrariness as, often, courts have looked at many conditions at once without

275. See *supra* Section II.C.

276. See *supra* Section II.C.

contextual coherence in the conditions they consider across cases. For instance, for cases similar in context, courts at the same jurisdictional level have looked for the conditions of “ability to own property,” “right to contract,” “right to sue and be sued,” and “constitutional rights” on the one hand in an earlier case,²⁷⁷ and “ability to own property,” “ability to transact,” “right to sue and be sued,” and “perpetuity” on the other in a later case,²⁷⁸ without explanation as to why certain conditions controlled in one case but not the other. And while there is some overlap, as the data show, there is also significant variation, which in the case of assessing legal personhood for AI entities can prove to be problematic due to the novel and singular challenges it poses for the law.

The indeterminacy of the caselaw reflects the complexity of the legal personhood concept and its many potential dimensions. However, the conditions my data have identified may provide a foundation for understanding the factors behind the presence or absence of legal personhood where statutes are silent. Given the absence of AI entities from any existing statutory provisions and their interpretations, it is important to seriously consider what this empirical analysis reveals about legal personhood before conferring legal personhood on entities other than corporations in light of future litigation stemming out of potential actions undertaken by AI entities.

IV. CONCLUSION

As AI entities continue to operate at an increasing distance from their developers and owners, they will continue to bring new challenges to legal frameworks for attribution and liability for potential civil or criminal transgressions. The current legal landscape is not prepared to deal with the question of accountability for AI entities until it answers the question of whether these entities can enjoy legal personhood to also bear legal accountability. At the same time, yielding to popular calls that advocate giving legal personhood to AI entities for reasons that may seem normatively attractive but don't have a clear legal foundation should give us pause. This Article assesses the scope of legal personhood as it relates to AI entities on the basis of a theoretical survey and an empirical study that result in two

277. *Amtorg Trading Corp. v. Camden Fibre Mills, Inc.*, 109 N.E.2d 606, 607 (N.Y. 1952).

278. *Fid. Tr. Co. v. BVD Assocs.*, 492 A.2d 180, 186 (Conn. 1985).

claims: one descriptive and one prescriptive. The descriptive claim is that the courts' overall approach to legal personhood has been more disparate than many have assumed, and it does not support legal personhood for AI entities. The prescriptive claim is that the legal basis for personhood that the empirical findings of this Article present prevents courts from conferring legal personhood on AI entities, and should give legislators pause before doing so. If legislators and courts consider the conditions for legal personhood this Article identifies as applied to AI entities, they will recognize the incompatibility between legal personhood and these entities. Without an understanding of this incompatibility, theory, policy, and litigation surrounding AI entities could move in a direction that undermines legal certainty and upsets legal expectation.