

Corporate AI Personhood: Avoiding Past Mistakes

By Ronald L. Chichester¹

1. Introduction

The intellectual property world has encountered a conundrum. How does the law handle authorship – and thus copyrightability -- when artificial intelligence² (“AI”) generates new content?³ Similarly, how does the law handle inventorship when AI is undeniably one of the inventors?⁴ This is one area where copyright law and patent law have converged, albeit in an instructive way. Incidentally, intellectual property is not the only area affected by the designation (or not) of AI as a person. For the past decade, AI has taken on many of the cyber-security roles formerly handled by humans. Unfortunately, just as humans are susceptible to “social engineering”⁵ so too is AI susceptible to its own set of similar “social engineering” vulnerabilities that are being exploited by cyber-criminals precisely because AI is *not* treated as a person.⁶ So how should the cyber-criminal statutes be updated to encompass crime committed via AI? Do we treat AI like persons for cybercrime, but not for intellectual property? How can we reconcile the disparate treatment of AI?

With respect to AI, copyright law seems to have adopted the same approach that was established earlier by court precedent involving things *other* than AI. In the seminal (if not infamous) “Monkey Selfies” case, a seven-year-old crested macaque named Naruto became adept at taking selfies of himself with someone's cell phone – leading to a legal squabble over who could own (and thus sell) the subsequent novelty photos. In *Naruto v. David Slater*,⁷ the Ninth Circuit held that the monkey's complaint “included facts sufficient to establish Article III standing because [the complaint] alleged that the monkey was the author and owner of the photographs and had suffered concrete and particularized economic harms.”⁸ The panel concluded that the monkey's Article III standing was not dependent on the sufficiency of People for the Ethical Treatment of Animals, Inc., as a guardian or “next friend.”⁹ However, the panel held that the monkey lacked statutory standing because the Copyright Act does not expressly authorize animals to file copyright infringement suits.¹⁰ In other words, if you aren't a human, you cannot get a copyright (although the non-human might be able to sue). What about corporations? It is well settled that corporations can be the owner of a copyright when a *human* employee created the work.¹¹ It is also well established that the user of software will own the copyright even when the software did the vast bulk of the content creation because, simply, it was the human that *caused* the software to generate the work. With respect to AI, it was a human who caused the AI to generate the work in the first place even if the human user had no idea what the AI would write, and so authorship would to be attributed to that human user. For copyright, the degree of autonomy matters less than the biological status of those involved.

The Patent statute and caselaw have taken a similar approach. Identifying the correct set of inventors is crucial to the validity of the patent in question, and is defined in Section 100 of the Patent Act.¹² Excluding an inventor from the patent can result in the patent being unenforceable.¹³ Currently, in the U.S., an inventor is designated as a “person”¹⁴ who has to sign an oath or declaration,¹⁵ although AI can be the source of prior art that can invalidate a patent.¹⁶ However, in contrast to copyright law, corporations cannot be designated as inventors – even though both are equally treated as “persons” in other areas of law. While it is currently not known how the Patent Office will handle the AI-as-an-inventor issue, but my guess is that the designated “inventor” will be the human that caused the AI to perform the invention process, which should cause a redefinition of “one of ordinary skill in the art.”¹⁷

In hindsight, Congress was working under a presupposition that the requisite thinking for authorship or inventorship could only have been performed by a human. However, rapid advances in AI have brought Congress’ presupposition into question. Under both sets of IP laws, AI *could* be designated as a “person” if Congress so amended both Acts. Whether Congress *should* designate AI as a person is the subject of this article.

2. The Problem

There has been an enormous body of books, articles, conferences and other works about AI as a person or at least about AI being capable of thinking like a person.¹⁸ The implications for the intellectual property laws (and law in general) are obvious. Interestingly, this question of applying personhood status to AI parallels another – and very similar – line of inquiry, namely *corporate* personhood. Almost one hundred years ago, one of America’s greatest philosophers, John Dewey, penned his seminal work on corporate personhood, which was later published in the Yale Law Journal in 1926.¹⁹ Dewey wasn’t the first (or last) to write on the topic, but he was the most cogent.²⁰ Considering what has transpired since he wrote that paper, Dewey was right to warn about the procrustean bed made by conferring the status of “person” onto a corporation. We should avoid the same mistake with AI.

Congress could be forgiven for allowing corporations to be treated like humans because there *were* humans acting behind the corporate veil. Moreover, humans were the *only* right-and-duty-bearing unit conceived under law. There had been centuries of law that focused on people before the notion of corporations was invented, the ancient practice giving rise to a presupposition toward the use of “person.” Lawyers, a status-quo lot indeed, tend to apply *existing* words and legal concepts to new entities (or facts), rather than choosing the more difficult chore of inventing a new word or legal concept. However, as Dewey pointed out:

“If in justification of a particular decision in some particular and difficult controversy, a court supports itself by appealing to some prior properties of the antecedent non-legal “natural person,” the

appeal may help out the particular decision; but it either involves dependence upon non-legal theory, or else it extends the legal concept of “natural person,” or it does both. This statement cuts in two ways. On the one hand, it indicates that much of the difficulty attending the recent discussion of the real personality of corporate bodies is due to going outside the strictly legal sphere, until legal issues have got complicated with other theories, and with former states of scientific knowledge; and on the other hand it suggests that law, at critical times and in dealing with critical issues, has found it difficult to grow in any other way than by taking over contemporary non-jural conceptions and doctrines. Just as the law has grown by taking unto itself practices of antecedent non-legal status, so it has grown by taking unto itself from psychology or philosophy or what not extraneous dogmas and ideas. But just as continued growth with respect to the former requires that law be again changed with great changes in further practices, just as, to be specific, the adoption of the law-merchant will not provide law adequate for the complex industrial relations of today, so it is even more markedly true that old non-legal doctrines which once served to advance rules of law may be obstructive today. We often go on discussing problems in terms of old ideas when the solution of the problem depends upon getting rid of the old ideas, and putting in their place concepts more in accord with the present state of ideas and knowledge. The root difficulty in present controversies about “natural” and associated bodies may be that while we oppose one to the other, or try to find some combining union of the two, *what we really need to do is to overhaul the doctrine of personality which underlies both of them.*”²¹

Dewey foresaw that the (selectively) equal treatment of corporations as “persons” had extra-legal effect by diffusing the value of each human within the electorate, and that the super-human abilities of corporations are inherently anti-democratic because they give their owners undue representation within the government.²² It is equally conceivable that if AI is similarly attached to the rubric of “person” then the owners of that AI could leverage still more undue representation within the government.

3. A Potential Solution

When Dewey suggested that an “overhaul of the doctrine of personality was needed”, he himself was tantalizingly close to solving the riddle, but he didn’t take the last necessary step. I’m going to take that short intellectual step and suggest that the fits and conundrums that we currently encounter when trying to wedge artificial intelligence (or corporations) into the rubric of “personhood” are eerily similar to the types of problems encountered by astronomers who adhered to an Earth-centric version of astronomy. Copernicus solved many problems in astronomy by adopting a Sun-centric theory of the solar system. The important

aspect of the change propounded by Copernicus was subtle but vital. He recognized that the Sun and Earth were both celestial bodies, but allowed their physical distinctions – rather than theological traditions -- to guide his conclusions. As Dewey pointed out, Law has adopted a similar, theologically-tainted starting point – “person” – that has led to unwarranted conclusions, just as in pre-Copernican astronomy.²³ We too could avoid a great many legal and philosophical problems if we similarly adopt a non-person-centric theory of rights and duties in law over the current person-centric theory.

The question is, if not person-centric, than “what”-centric? Ideally, we would have a new word to describe some entity that has the capacity for rights and duties, a word that does not have any social/metaphysical/theological baggage. However, we need to go one step further. That word also cannot possess any *particular* rights or duties so that it can refrain from acquiring the aforementioned baggage. Unfortunately, lawyers were not in the habit of thinking of a right-and-duty-bearing unit in the abstract. Such a concept, however, can be borrowed from computer scientists, namely something they call a “base class.”²⁴ The base class does nothing, other than provide a framework for deriving other classes that actually *do* something. The base class has the core elements that are common to all of the derived classes, and thus represents the core essence of a thing. As Dewey has pointed out, for law, those common elements are *rights* and *duties*, to which I would add *characteristics*, because the characteristics that define the entity affect what rights and duties the entity is capable of but also distinguish it from other instances of like-classes. So our legal base class would be an “entity” that is capable of acting within an environment and would have rights, duties and characteristics.

As in computer science, the name of the base class is arbitrary, although as mentioned previously, picking the wrong name can lead to unintended consequences. Computer science actually solved that problem by prohibiting (or at least frowning upon) the use of a defined term of a programming language as the name of a class. I toyed with the idea of naming the base class “RADB” (Right-And-Duty-Bearing) (pronounced “radab”) but that was orally cumbersome. For this article, I am using word “agent” (in the most fundamental meaning) as that base right-and-duty-bearing unit because that word is derived from the Latin *agere*, to do.²⁵ Secondly, each object oriented computer language has its own syntax for identifying where a particular class fits within the hierarchy of classes. For this paper, I have modified the “dot” notation common to JAVA²⁶, with a modifier that defines a class tacked on from the base class (with a “.”) to reach the level within the hierarchy.²⁷ For example, a human being would be an agent.human. A human that is a citizen would be an agent.human.citizen because not all humans are citizens within a particular jurisdiction and citizens enjoy some rights (and duties) that others do not, which is useful when that distinction needs to be made for some reason. A corporation would be an agent.corporation. The federal government would be agent.government.federal. Similarly (and importantly), AI would be agent.AI. Such an arrangement suggests that some elements of autonomy and “thinkings” (however defined) are essential to the second level of the hierarchy.

However, the elements that define the levels of the hierarchy have yet to be worked out, but can be, preferably in a democratic manner. Nevertheless, under the agent-centric theory, *law* would be defined as “the regulation of actions between agents within an environment.”

While the notation adopted above may be cumbersome, it has the benefits of transparency and precision. Agent.corporations are easily distinguished from agent.humans. Yet while both are right-and-duty-bearing entities, they are **expected** to have distinguishable *sets* of rights and duties precisely because they have inherently different characteristics that caused them to be distinguishable in the first place. Specific rights and duties would depend upon the place and role of the agent within the hierarchy and the characteristics defining that class. For example, an agent.AI and an agent.corporation can be owned by an agent.human, but an agent.human cannot be owned. Agent.humans can marry but agent.corporations cannot. Agent.corporations can merge, but agent.humans cannot. An agent.monkey could still take a photograph that would be owned by an agent.human to satisfy the current copyright laws. Congress could amend the Patent Act to allow an agent.AI (but not an agent.corporation) to be an inventor, but the ownership of the patent would rest with the owner of that agent.AI, precisely analogous to the practice under current copyright law.

An agent-centric viewpoint is also highly useful in identifying fallacies in case law. For example, when Congress passed the Reconstruction-era Fourteenth Amendment, they were clearly referring to agent.humans. Had we had the agent-centric theory in 1886, the Supreme Court would have had a much harder time applying the Fourteenth Amendment to agent.corporations as they did in *Santa Clara*.²⁸ Similarly, strict constructionists could easily argue that the Founding Fathers were referring *only* to agent.human.citizen when they drafted the free speech clause of the First Amendment, in stark contrast to the Supreme Court's contrary holding in *Citizens United*.²⁹

Finally, one of the great things about computer science is that you can make up whole languages that cater to specific purposes. This means that we can create a computer language specifically for law as outlined above, and use that language to create software that mimics (or implements) legal relations between agents. Similarly, statutes could identify the specific classes of entities to which a particular law relates, providing proper guidance to lawyers and courts alike.

4. Conclusion

An agent-centric theory of law sidesteps the problems inherent with the person-centric theory, the latter being saddled with all of the unintended baggage identified by Dewey and others. The agent-centric theory is also a useful tool of inquiry to identify the sources of inequality and other injustices in society. The significance of the agent-centric theory for society is obvious and important because it can provide

a rigorous framework for inquiry as well as for devising efficient solutions to common problems.

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² For this paper, the words “artificial intelligence” have their broadest, or most general meaning. AI is often grouped in four different categories: “Acting as a Human” (the Turing Test approach); “Thinking as a Human” (the cognitive modeling approach); “Thinking Rationally” (the “laws of thought” or “logic” approach); and “Acting Rationally” (the rational agent approach). Stuart J Russell & Peter Norvig, *ARTIFICIAL INTELLIGENCE*, 3rd ed., 1-5 (2018). This paper does not limit AI to any particular category.

³ See, e.g., Thomas Macaulay, *Legal issues around IP for AI: Who owns the copyright on content created by machines?* TechWorld (January 26, 2018), <https://www.techworld.com/data/ip-rights-for-ai-who-owns-copyright-on-content-created-by-machines-3671082/> (last visited Nov. 13, 2019); Andres Guadamuz, *Artificial intelligence and copyright*, WIPO Magazine (October 2017), https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html (last visited Nov. 13, 2019); Nicole Martinez, *Can an AI Machine Hold Copyright Protection Over Its Work?* *Artrepreneur Art Law Journal* (June 1, 2017), <https://alj.artrepreneur.com/ai-machine-copyright/> (last visited on Nov. 13, 2019).

⁴ See, e.g., *World-first Patent Application Filed for AI Inventor’s Ideas*, E&T (August 1, 2019), available at: <https://eandt.theiet.org/content/articles/2019/08/world-first-patent-application-filed-for-ai-inventor-s-ideas/>

⁵ See e.g., “Social Engineering – Definition” Kaspersky Labs, available at: <https://usa.kaspersky.com/resource-center/definitions/social-engineering>

⁶ See, e.g. Ryan Calo, *How New A.I. Is Making the Law’s Definition of Hacking Obsolete*, Medium (August 21, 2019), <https://onezero.medium.com/how-new-a-i-is-making-the-laws-definition-of-hacking-obsolete-eb2ab1a50961> (last visited Nov. 13, 2019).

⁷ *Naruto v. David Slater*, 16-15469 (9th Cir. 2018), available at: <https://www.courtlistener.com/opinion/4489119/naruto-v-david-slater/> (last visited on Nov. 13, 2019).

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.*

¹¹ As a “work made for hire,” with status denoted by the Copyright Act. See, e.g., Copyright Office Circular 9 “Works Made for Hire,” available at <https://www.copyright.gov/circs/circ09.pdf>.

¹² 35 U.S.C. 100, *et. seq.* See in particular § 100(f) “[t]he term “inventor” means the individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention.” See also § 116 (on inventorship).

¹³ See, 35 U.S.C. § 116; *Frank's Casing Crew & Rental Tools, Inc., v. PMR Techs., Ltd.*, 292 F.3d 1363 (Fed. Cir. 2002); *Trovan, Ltd v. Sokymat SA*, 299 F.3d 1292, 1302 (Fed. Cir. 2002).

¹⁴ 35 U.S.C. § 102.

¹⁵ 35 U.S.C. § 115.

¹⁶ See, e.g., European Patent Office, "What is prior art?", <https://www.epo.org/learning-events/materials/inventors-handbook/novelty/prior-art.html> (last visited on Nov. 22, 2019); AllPriorArt.com, <https://allpriorart.com/about/> (last visited on Nov. 22, 2019) (uses AI and other algorithms to generate "inventions" that can be used as prior art to invalidate existing patents or cause the rejection of claims in patent applications); AllTheClaims.com, <http://alltheclaims.com/> (last visited on Nov. 22, 2019) (uses AI and other algorithms to generate claims that can be cited as prior art against patents and patent applications).

¹⁷ See, e.g., Ben Hattenbach & Joshua Glucoft, *Patents in an Era of Infinite Monkeys and Artificial Intelligence*, 19 Stan. Tech. L. Rev. 32 (2015); World Economic Forum, *Artificial Intelligence Collides with Patent Law* (April 2018), http://www3.weforum.org/docs/WEF_48540_WP_End_of_Innovation_Protecting_Patent_Law.pdf (last visited on Nov. 16, 2019). AI is also currently generating prior art citable against patent applications in the U.S. Patent Office. See "All Prior Art: Algorithmically generated prior art" at <https://allpriorart.com/> (last visited on Nov. 16, 2019) which is a website that continually generates inventions to be used as prior art against later-filed patent applications.

¹⁸ See, e.g., John Brockman et al., *WHAT TO THINK ABOUT MACHINES THAT THINK: TODAY'S LEADING THINKERS ON THE AGE OF MACHINE INTELLIGENCE* (2015).

¹⁹ John Dewey, *The Historic Background of Corporate Legal Personality*, 35 Yale L. J. 655 (1926).

²⁰ See, e.g., Susanna Ripken, *Corporations Are People Too: A Multi-Dimensional Approach to the Corporate Personhood Puzzle*, 15 Fordham Journal of Corporate & Financial Law (2009); Susanna Ripken, *CORPORATE PERSONHOOD* (2019); Lucia M Rafanelli, *A Defense of Individualism in the Age of Corporate Rights*, *The Journal of Political Philosophy* (2017); Adam Winkler, *WE THE CORPORATIONS: HOW AMERICAN BUSINESSES WON THEIR CIVIL RIGHTS* (1 ed. 2019).

²¹ Dewey, *Corporate Legal Personality*, *supra* note 16 at 657-658 (emphasis added).

²² See, e.g., Lawrence Lessig, *REPUBLIC, LOST VERSION 2.0* (2nd ed. 2015).

²³ As Dewey pointed out: "The foregoing section [of his paper] does not attempt to define what it is to be a "person" in the sense of a right-and-duty-bearing unit. Its purpose is to show the logical method by which such a definition should be arrived at; and, secondly, to show that the question has been enormously complicated by the employment of a wrong logical method, and by the introduction of irrelevant conceptions, imported into legal discussion (and often into legal practice) from uncritical popular beliefs, from psychology, and from a metaphysics ultimately derived from theology." Dewey, *Corporate Legal Personality* at 662-663.

²⁴ In object oriented programming, a base class is an object that has the framework for adding properties and methods for specialized methods. The use of a base class

is to provide the framework for making other – more specialized – classes. *See, e.g.*, <https://www.techopedia.com/definition/26896/base-class>

²⁵ *See*, The Latin Dictionary, <http://latindictionary.wikidot.com/verb:agere> (last viewed on Nov. 14, 2019). Incidentally, the Latin form of agency, while the root of the Western view of agency, is distinct from non-Western views of agency. For example, some streams of Native American philosophy hold distinctly different views on agency. *See, e.g.*, Scott L. Pratt, *Persons in Place: The Agent Ontology of Vine Deloria, Jr.*, APA Newsletter, Spring 2006, Vol. 6, No. 1, pp. 4-9, https://cdn.ymaws.com/www.apaonline.org/resource/collection/13B1F8E6-0142-45FD-A626-9C4271DC6F62/v06n1American_Indians.pdf (last visited on Nov. 22, 2019) (“Deloria also proposes no simple attribution of a “human-like nature” to non-human others but, rather, argues for different “natures” in different forms of agency. Finally, it is important to note that Deloria does not hold that such vitalism marks a difference between what we view as animate and inanimate beings. Everything has its particular “vital force” manifested in its activities.”) Consequently, the word “agency” has its own “baggage” and a completely new word should be adopted for the legal base class which has a rigorous definition that transcends philosophical and cultural traditions.

²⁶ *See, e.g.*, [https://en.wikipedia.org/wiki/Java_\(programming_language\)](https://en.wikipedia.org/wiki/Java_(programming_language)).

²⁷ *See, e.g.*, Nirosh, *Introduction to Object Oriented Programming Concepts (OOP) and More*, Code Project (Feb. 4, 2015), <https://www.codeproject.com/Articles/22769/Introduction-to-Object-Oriented-Programming-Concept> (last visited on Nov. 13, 2019). *See also*, “*abc — Abstract Base Classes*,” The Python Standard Library, <https://docs.python.org/3/library/abc.html> (last visited, Nov. 22, 2019).

²⁸ *Santa Clara County v. Southern Pacific Railroad Company*, 118 U.S. 394, 6 S. Ct. 1132; 30 L. Ed. 118; 1886 U.S. LEXIS 1942 (1886) (which held that corporations are “persons” within the intended meaning of the Fourteenth Amendment).

²⁹ *Citizens United v. Federal Election Commission*, 558 U.S. 310, 130 S. Ct. 876; 175 L. Ed. 2d 753; 2010 U.S. LEXIS 766 (2010) (holding that restrictions on money expenditures by agent.corporations were unconstitutional because an earlier Supreme Court had given agent.corporations the same status as agent.human.citizen in *Santa Clara, Id.* The agent.corporation’s characteristic of money highlights the procrustean bed made by the Supreme Court when they realized that agent.corporations did not have the same characteristics for speech that agent.humans possess. To remedy that shortcoming, the Supreme Court equated money from agent.corporations with traditional speech by agent.humans so that both could fit within the rubric of “person.” The problem of course, is that the exchange of money does not convey information. Rather, money conveys influence and thus representation within government).