

Rights for Robots? U.S. Courts and Patent Offices Must Consider Recognizing Artificial Intelligence Systems as Patent Inventors

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I. INTRODUCTION

For the first time in history, the United States Patent and Trademark Office (USPTO) received two patent applications listing an Artificial Intelligence (AI) powered computer named “DABUS” as an inventor.¹ The filing of this patent application was significant because only a human or “natural person” can be listed as an inventor on a patent application.² Although Title 35 of the United States Code does not explicitly state natural persons, the USPTO interprets the word “whoever” to suggest a natural person.³ The patent applications “list DABUS as the inventor, and the AI’s owner as the patent applicant and the prospective owner of any issued patents.”⁴ DABUS (short for Device for the Autonomous Bootstrapping of Unified Sentience)⁵ is a “‘creativity machine’ that’s able to generate ideas without human intervention.”⁶ The system “uses an artificial neural system to mimic the creative process of a human brain.”⁷ “It turns information it has learn[ed] into ideas and then uses its cumulative experience to judge their merit.”⁸ The inventions said to be invented by DABUS are a “specially shaped container lid designed for robotic gripping and a flashlight system for attracting human attention in emergencies.”⁹ DABUS was built by AI expert and Missouri inventor, Stephen Thaler.¹⁰ However, it is improper to list Thaler as an inventor of DABUS because Thaler “has no background in developing container lids or flashlight systems, [did not] conceive of those two products[,] and [did not] direct the machine to invent them.”¹¹ The submission of the patent applications is being led by Dr. Ryan Abbott, a law and health-sciences

1. Tina G. Yin-Sowatzke, *Meet DABUS: An Artificial Intelligence Machine Hoping to Maintain Two Patent Applications in Its Own Name*, MCKEE, VOORHEES & SEASE, PLC: FILEWRAPPER BLOG (Aug. 22, 2019), <http://www.filewrapper.com/filewrapper/meet-dabus-an-artificial-intelligence-machine-hoping-to-maintain-two-patent-applications-in-its-own-filewrapper=true>.

2. *Decision on Petition*, U.S. PAT. & TRADEMARK OFF. (Apr. 22, 2020), <http://www.uspto.gov/sites/default/files/documents/1652435022apr2020.pdf>.

3. *See id.*

4. Ryan Abbott, *The Artificial Inventor Project*, WIPO MAG. (Dec. 2019), <http://www.wipo.int/wipomagazine/en/2019/06/article0002.html>.

5. Tom Dines, *A Patent Predicament: Who Owns an AI-Generated Invention?*, FIN. TIMES (Oct. 6, 2019), <http://www.ft.com/content/84677ec8-be73-11e9-9381-78bab8a70848>.

6. Kyle Wiggers, *AI in Patent Law: Enabler or Hindrance?*, VENTURE BEAT (Nov. 11, 2019, 5:24 AM), <http://venturebeat.com/2019/11/11/ai-in-patent-law-enabler-or-hindrance/>.

7. Dines, *supra* note 5.

8. *Id.*

9. Jared Council, *Can an AI System Be Given a Patent?*, WALL ST. J. (Oct. 11, 2019, 9:45 AM), <http://www.wsj.com/articles/can-an-ai-system-be-given-a-patent-11570801500>.

10. Dines, *supra* note 5.

11. Council, *supra* note 9.

professor at the University of Surrey in the United Kingdom.¹² These filings will presumably pressure patent offices and courts to address the unresolved issues of AI and inventorship rights as we progress into a world infiltrated with AI.¹³

In addition, two other patent offices have received DABUS's patent applications, the European Patent Office (EPO) and the United Kingdom Intellectual Property Office (UKIPO).¹⁴ Since the filings in August 2019, both the EPO and UKIPO have responded.¹⁵ The EPO and UKIPO each rejected the two patent applications naming DABUS as the inventor.¹⁶ The EPO stated it would not grant patent rights to DABUS on the grounds that the applications "do not meet the requirement of the EPC [European Patent Commission] that an inventor designated in the application has to be a human being, not a machine."¹⁷ The EPO further explained in a press release that legislative history "supports the conclusion that the legislators understood an inventor to be a natural person only."¹⁸ Additionally, the EPO requires an inventor to have a family name and address, which DABUS did not have.¹⁹ The UKIPO released a similar decision and reasoning regarding the rejection of DABUS' patent application.²⁰ The office relied primarily on sections 7 and 13 of the Patents Act 1977 and what constitutes an inventor.²¹

In August 2019, following the filing of the patent applications, the USPTO released a Federal Register Notice announcing that it would broadly explore its approach to AI and was seeking public input on a

12. *Id.*

13. See Yin-Sowatzke, *supra* note 1.

14. *Id.*

15. *EPO Provides Reasoning for Rejecting Patent Applications Citing AI as Inventor*, IPWATCHDOG (Jan. 28, 2020), <http://www.ipwatchdog.com/2020/01/28/epo-provides-reasoning-rejecting-patent-applications-citing-ai-inventor/id=118280/>.

16. *Id.*

17. *EPO Refuses DABUS Patent Applications Designating a Machine Inventor*, EUR. PAT. OFF. (Dec. 20, 2019), <http://www.epo.org/news-events/news/2019/20191220.html>.

18. *EPO Provides Reasoning for Rejecting Patent Applications Citing AI as Inventor*, *supra* note 15; see *Grounds for the Decision*, EUR. PAT. OFF. (Jan. 27, 2020), <http://register.epo.org/application?documentId=E4B63SD62191498&number=EP18275163>.

19. *EPO Provides Reasoning for Rejecting Patent Applications Citing AI as Inventor*, *supra* note 15.

20. See *Patents Act 1977 (The Patent Rules 2007)*, U.K. INTELL. PROP. OFF. (Dec. 4, 2019), <http://www.boult.com/wp-content/uploads/2020/02/by-the-UKIPO.pdf>.

21. *Id.*

variety of AI-related issues.²² Specifically, one objective of the public notice was to consider “whether new forms of intellectual property protection are needed.”²³ However, in April 2020, the USPTO decided that artificial intelligence systems cannot be listed or credited as inventors on a U.S. patent application.²⁴

First, this Comment provides an overview and background information on AI and its role today in our world and in intellectual property. Next, it discusses U.S. patent law and the requirements for patent eligibility and inventorship. Then, this Comment discusses the current status of non-humans and artificial entities as “legal persons” as well as the intellectual property rights and protections the current laws afford them. Lastly, this Comment examines the positive and negative implications of allowing an AI system as an inventor.

II. AI AND INTELLECTUAL PROPERTY

A. *Today’s Use of Artificial Intelligence*

Artificial Intelligence is seeping into our daily lives affecting how we live, work, and play. What was once considered a science-fiction or futuristic idea is now engrained into almost everything we do. “The global AI market value is expected to reach \$267 billion by 2027.”²⁵ Furthermore, “AI is expected to contribute \$15.7 trillion to the global economy by 2030.”²⁶ AI is also good for business.²⁷ For example, consumers are growing accustomed to AI-powered recommender algorithms such as Amazon’s “[c]ustomers who bought this item also bought” or Netflix’s recommended programming based on previously watched content.²⁸ Netflix’s AI system saves the company about \$1 billion each year and “75% of what users watch on Netflix come from those recommendations.”²⁹

22. See Request for Comments on Patenting Artificial Intelligence Inventions, 84 Fed. Reg. 44889 (U.S. Pat. & Trademark Off. Aug. 27, 2019).

23. *Id.* at 44889.

24. See U.S. PAT. & TRADEMARK OFF., *supra* note 2; see also Rebecca Tapscott, *USPTO Shoots Down DABUS’ Bid For Inventorship*, IPWATCHDOG (May 4, 2020), <http://www.ipwatchdog.com/2020/05/04/uspto-shoots-dabus-bid-inventorship/id=121284/>.

25. Bojan Jovanović, *55 Fascinating AI Statistics and Trends for 2021*, DATAPROT (Mar. 16, 2021), <http://dataprot.net/statistics/ai-statistics/>.

26. *Id.*

27. *15 Unexpected Stats About Artificial Intelligence*, CONTEMP. TECH. UNIV., <http://contech.university/15-unexpected-stats-about-artificial-intelligence/> (last visited Mar. 28, 2021).

28. *Id.*

29. *Id.*

The term Artificial Intelligence “is generally used to refer to technology that carries out tasks that normally need human intelligence.”³⁰ This Comment is primarily focused on machine learning, “a subset of AI that enables computers to learn from data without being explicitly programmed.”³¹

B. Current Intellectual Property Protections for AI

1. Patents

There is not much law on AI-generated inventions for patents.³² Currently, most jurisdictions require a natural person to be listed as an inventor for a patent application.³³ This requirement is meant to “protect and acknowledge the rights of human inventors.”³⁴ However, most inventors of these patents do not own their patents; most are owned by businesses.³⁵ The U.S. patent laws require a natural person to be listed to “ensure that people receive due credit.”³⁶ Nevertheless, these patent laws were enacted without considering the future possibility of machines creating their own inventions.³⁷

2. Copyright

AI-generated works and copyright law are much more developed than AI-generated inventions and patents.³⁸ The United Kingdom was the first country to explicitly provide copyright protection for AI and computer-generated works.³⁹ UK laws allow an AI to be deemed the “producer” of copyrightable work if no natural person qualifies as an author.⁴⁰ The United States still prohibits copyright protection for AI-generated work, deemed their “human authorship policy.”⁴¹ This policy

30. Yohan Liyanage & Kathy Berry, *Insight: Intellectual Property Challenges During an AI Boom*, BLOOMBERG L. (Oct. 29, 2019, 3:01 AM), <http://news.bloomberglaw.com/ip-law/insight-intellectual-property-challenges-during-an-ai-boom>.

31. *Id.*

32. Abbott, *supra* note 4.

33. *Id.*

34. *Id.*

35. *Id.*

36. *Id.*

37. *Id.*

38. *See id.*

39. *Id.*

40. *Id.*

41. *Id.*

incites a natural person to take credit for work that was generated by an AI system, which goes against the principles on which this country's intellectual property laws were founded.⁴²

III. THE U.S PATENT LAW SYSTEM

A. *History and Overview of Patents*

United States patent law derives from Congress' authority "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."⁴³ The patent laws went into effect in 1953 and are codified in Title 35 of the United States Code.⁴⁴ Additionally, Congress enacted the American Inventors Protection Act of 1999 (AIPA), which further revised patent laws.⁴⁵ The patent laws specify the subject matter for which a patent may be obtained and the conditions for patentability.⁴⁶ Further, the law establishes the USPTO to administer the law relating to the granting of patents.⁴⁷

In order for an invention to be patentable, it must meet the requirements stated in 35 U.S.C. § 101. "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new or useful improvement thereof, may obtain a patent. . . ."⁴⁸ Therefore, the patentability of an invention rests on three threshold requirements: (1) novelty, (2) usefulness, and (3) non-obviousness.⁴⁹

B. *The Importance of Patent Inventorship*

Patent inventorship is of central importance to the patent system. It "identifies the true and correct inventor of the claimed invention."⁵⁰ The

42. *See id.*

43. U.S. CONST. art. I, § 8, cl. 8.

44. *See* Patent Act of 1952, Pub. L. No. 82-593, 66 Stat. 792 (codified as amended at 35 U.S.C. §§ 1-390).

45. *See* American Inventors Protection Act of 1999, Pub. L. No. 106-113 app. I, tit. IV, 113 Stat. 1501A-552 (codified as amended in scattered sections of 35 U.S.C.).

46. *See* 35 U.S.C. §§ 100-212.

47. *See* 35 U.S.C. §§ 1-42.

48. 35 U.S.C. § 101.

49. *See* 35 U.S.C. §§ 101-103; *see also* *General Information Concerning Patents*, U.S. PAT. & TRADEMARK OFF. (Oct. 2015), <http://www.uspto.gov/patents-getting-started/general-information-concerning-patents#heading-1>.

50. Campbell Chiang, *A Putative Inventor's Remedies to Correct Inventorship on a Patent*, 2 DUKE L. & TECH. REV. 1, 1 (2003).

patent inventor is described as “the individual who first conceived of the invention and also the first owner of a patent on the invention.”⁵¹ The term “inventor” is statutorily defined as “the individual . . . who invented or discovered the subject matter of the invention.”⁵² Inventorship provides the right to exclude others, it dictates ownership and licensing rights.⁵³ This places scrutiny on correctly identifying the inventor, human or not. If inventorship on a patent application is incorrect, the application can be invalidated.⁵⁴ Although there are remedies to correct inventorship on patent applications, the process can be difficult.⁵⁵

It is important to note that there is a distinction between the terms “inventorship” and “ownership.” The Federal Circuit in *Beech Aircraft Corp. v. EDO Corp.* provided that “inventorship and ownership are separate issues. . . . [I]nventorship is a question of who actually invented the subject matter claimed in a patent. Ownership, however, is a question of who owns legal title to the subject matter claimed in a patent. . . .”⁵⁶

Americans have the cultural tendency of supporting the “first-to-invent” patent system.⁵⁷ The system “is arguably necessary to protect the small inventor who may well be without the resources of a large corporation that would otherwise enable him to fully utilize the patent system.”⁵⁸ The patent system embodies the “American dream” as it grants even an independent, struggling inventor the ability to succeed and utilize the patent system.⁵⁹ Moreover, a “first-to-invent” system is deemed to be superior because “it does not allow ‘one to harvest what another has sown.’”⁶⁰ In other words, it allows a person a natural right to their own creative efforts and prevents the unjust enrichment of others.⁶¹

51. *Id.*

52. 35 U.S.C. § 100(f).

53. *See* 35 U.S.C. § 154(a)(1); *see, e.g.*, Sherry L. Murphy, *Determining Patent Inventorship: A Practical Approach*, 13 N.C. J.L. & TECH. 215, 221-23 (2012).

54. Chiang, *supra* note 50, at 3.

55. *See id.* at 4-6.

56. *Beech Aircraft Corp. v. EDO Corp.*, 990 F.2d 1237, 1248 (Fed. Cir. 1993).

57. Chiang, *supra* note 50, at 2.

58. *Id.* at 2-3.

59. *Id.* at 3.

60. *Id.*

61. *Id.*

C. *The Interpretation of “Individuals” and “Persons”*

The word “person” is commonly used throughout the Constitution, typically to describe natural persons.⁶² It is up to the courts to allow a broader interpretation of the word “person” in an Act. The U.S. Patent Act uses the term “individual” and “inventor” throughout to describe the rights granted to the inventor of a patent.⁶³ Section 100(f) defines the term inventor as “the individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention.”⁶⁴ The Act, however, does not define the term “individual” and who is deemed as an individual.

The United States Supreme Court has extended rights, protections, and liabilities to those it deems as an “individual” outside of natural persons.⁶⁵ For these inquiries, when a statute does not define a term, the Court typically looks first to the word’s ordinary meaning.⁶⁶ The Court then looks to the words of the statute in question to determine whether Congress’s intended to include that meaning.⁶⁷ For example, in *Mohamad v. Palestinian Authority*, the Court had to determine whether the word “individual” written in the Torture Victim Protection Act of 1991 (TVPA) authorized a cause of action against an organization.⁶⁸ Based on their analysis of the ordinary meaning of the term “individual,” the Court held that the term “individual” used in the TVPA encompassed only natural persons and therefore did not impose liability against organizations.⁶⁹

Although *Mohamad* is not an intellectual property case or related to the interpretation of the Patent Act, the opinion provides a thorough explanation of how the Court decides a statutory interpretation issue, specifically, the meaning of the word “individual” as used in an Act of Congress. In that case, the Supreme Court looked to the Oxford English Dictionary, which defines “individual” to ordinarily mean “a human being, a person.”⁷⁰ The Court further emphasized that when the term

62. See, e.g., U.S. CONST. art. II, § 1, cl. 5 (stating that “[n]o person except a natural born citizen . . . shall be eligible to the Office of President.”).

63. See 35 U.S.C. §§ 1-390.

64. 35 U.S.C. § 100(f).

65. See, e.g., *Burwell v. Hobby Lobby Stores, Inc.*, 573 U.S. 682, 708 (2014); *Citizens United v. Fed. Election Comm’n*, 558 U.S. 310, 343 (2010); *Bank of the U.S. v. Deveaux*, 9 U.S. 61, 91 (1809).

66. *FCC v. AT&T Inc.*, 562 U.S. 397, 403 (2011) (citing *Johnson v. United States*, 559 U.S. 133, 138 (2010)).

67. See *Mohamad v. Palestinian Auth.*, 566 U.S. 449, 454-57 (2012).

68. *Id.* at 451.

69. *Id.* at 451-52.

70. *Id.* at 454.

individual is used in our everyday speak such as “the individual left the room” or “the individual went to the store,” the term is “referring unmistakably to a natural person.”⁷¹ It was then noted that the Court itself routinely uses “individual” to denote a natural person and particularly when distinguishing between a natural person and corporation.⁷²

Next, the Court determined that Congress does not employ the word “individual” any differently and as instructed by the Dictionary Act,⁷³ the term “person” includes several entities, but the word “individual” is distinct from those.⁷⁴ Lastly, the Supreme Court stated that “federal statutes routinely distinguish between an ‘individual’ and an organizational entity” and a “person” has been defined in some statutes to include more than just a natural person.⁷⁵ Ultimately, the Court concluded that if they are to interpret the word “individual” to mean more than just a “natural person,” there “must be some indication Congress intended such a result.”⁷⁶

IV. “AI PERSONHOOD?”

Should artificial intelligence be granted legal personhood? For this idea to move forward, the rights and duties that accompany legal personhood must be addressed and specifically what rights and duties of legal personhood will apply to artificial intelligence.⁷⁷ For example, corporations and natural humans have a particular bundle of rights and duties that accompanies legal personhood.⁷⁸ Proponents for AI personhood contend that granting an artificial intelligence system legal personhood status would be synonymous with corporations being treated as legal persons.⁷⁹ Although corporations are considered legal persons, they are run by their stockholders and directors. This is no different than an artificial intelligence being run by its owner and programmers.⁸⁰

71. *Id.*

72. *Id.*

73. 1 U.S.C. § 1 (“[i]n determining the meaning of any Act of Congress, unless the context indicates otherwise . . . the word[] ‘person’ . . . include[s] corporations, companies, associations, firms, partnerships, societies, and joint stock companies, as well as individuals.”)

74. *Mohamad*, 566 U.S. at 454.

75. *Id.* at 455.

76. *Id.*

77. Lawrence B. Solum, *Legal Personhood for Artificial Intelligences*, 70 N.C. L. REV. 1231, 1239 (1992).

78. *Id.*

79. *See id.* at 1239.

80. *See id.* at 1243.

A. *Objections to AI Personhood*

Those opposed to granting an AI system legal personhood status have two main objections to recognizing rights to AIs.⁸¹ First, “only natural persons should be given the rights of constitutional personhood.”⁸² Second, artificial intelligence systems lack the critical components of personhood such as souls, consciousness, intentionality, and feelings.⁸³

1. AI Systems Are Not Humans

The most obvious objection to recognizing AI as a legal person is simply that artificial intelligence systems are not human.⁸⁴ Opponents argue that only humans can have constitutional rights.⁸⁵ However, one response to that objection would be to develop criteria of personhood for non-human entities that are independent from being human.⁸⁶

For example, in October 2017, Saudi Arabia became the first country to grant citizenship to a robot.⁸⁷ The robot, named Sophia, was deemed a Saudi citizen in “an attempt to promote Saudi Arabia as a place to develop artificial intelligence.”⁸⁸ However, much criticism followed the granting of citizenship to Sophia because the robot was given more rights than many human women in Saudi Arabia.⁸⁹ Saudi Arabia still only gives limited rights to human women.⁹⁰ This issue comes into play in many other countries as well, where many citizens also have fewer rights than nonintelligent software and robots.⁹¹ Granting legal personhood status to an AI system when other humans have lesser rights than a robot can cause human rights and dignity to suffer.⁹²

81. *See id.* at 1258.

82. *Id.*

83. *Id.*

84. *Id.* at 1258.

85. *Id.*

86. *Id.* at 1260.

87. Andrew Griffin, *Saudi Arabia Grants Citizenship to a Robot for the First Time Ever*, INDEP. (Oct. 26, 2017, 2:31 PM), <http://www.independent.co.uk/life-style/gadgets-and-tech/news/saudi-arabia-robot-sophia-citizenship-android-riyadh-citizen-passport-future-a8021601.html>.

88. *Id.*

89. *See id.*; Roman V. Yampolskiy, *Could an Artificial Intelligence Be Considered a Person Under the Law?*, THE CONVERSATION (Oct. 5, 2018, 6:42 AM), <http://theconversation.com/could-an-artificial-intelligence-be-considered-a-person-under-the-law-102865>.

90. Griffin, *supra* note 87.

91. Yampolskiy, *supra* note 89.

92. *Id.*

2. AI Systems Lack Critical Elements of Personhood

Another objection for granting AI legal personhood status is that these systems lack critical elements of personhood such as a soul, feelings, consciousness, intentionality, desires, and interests.⁹³ This argument, known as the “missing something” argument, stresses that AI systems could never truly possess these elements and therefore are missing something in order to be recognized as legal persons.⁹⁴ For example, “quality X is essential for personhood.”⁹⁵ Quality X cannot be possessed by an AI system.⁹⁶ Thus, even though a computer could produce behavior that demonstrates quality X, it is only a simulation and the computer is truly lacking quality X.⁹⁷

V. LEGAL PERSONHOOD STATUS OF NON-HUMANS AND ARTIFICIAL ENTITIES

The first step in granting a non-human entity with intellectual property rights will require the entity to be recognized as a legal person or “artificial person.” If a non-human entity is granted legal personhood, the entity will inherit rights and protections similar to those of a natural person as determined by law and our courts.

A. *Animals*

1. Current Legal Personhood Status

The discussion on the legal personhood of animals has been and will continue to be a longstanding topic of conversation. Litigation seeking animal legal personhood is “in its infancy and will likely continue to expand into the foreseeable future.”⁹⁸ In 2017, a New York appellate court issued a “landmark ruling rejecting an animal rights organization’s efforts to assign legal personhood status to chimpanzees.”⁹⁹ The organization sought habeus corpus relief for two caged chimpanzees.¹⁰⁰ In this case, the

93. Solum, *supra* note 77, at 1262.

94. *Id.*

95. *Id.*

96. *Id.*

97. *Id.*

98. Richard L. Cupp, Jr., *Litigating Nonhuman Animal Legal Personhood*, 50 TEX. TECH L. REV. 573, 575 (2018).

99. *Id.* at 573; *see In re Nonhuman Rts. Project, Inc. v. Lavery*, 54 N.Y.S.3d 392 (N.Y. App. Div. 2017).

100. *Lavery*, 54 N.Y.S.3d at 393-94.

petitioners, a Massachusetts nonprofit corporation, contended that chimpanzees are entitled to habeas relief because their human-like characteristics render them “persons” for purposes of CPLR article 70.¹⁰¹ CPLR article 70 “provides a summary procedure by which a ‘person’ who has been illegally imprisoned . . . can challenge the legality of the detention.”¹⁰² Although the word “person” is not defined in the statute, the court concluded that there was no support that the definition includes non-humans.¹⁰³ The court did agree that the petitioner’s evidence demonstrates the intelligence and social capabilities of chimpanzees; however, the petitioner did not provide any evidence “that the United States or New York Constitutions were intended to protect non-human animals’ rights” or that the Legislature intended to expand the term “person” beyond humans.¹⁰⁴

In addition, the Ninth Circuit has stated that Congress would have to authorize Article III standing for animals, but the court indicated that there would no issue if they were to authorize it.¹⁰⁵ The Ninth Circuit in *Cetacean Community v. Bush* stated, “we see no reason why Article III prevents Congress from authorizing a suit in the name of an animal, any more than it prevents suits brought in the name of artificial persons such as corporations, partnerships or trusts, and even ships.”¹⁰⁶

2. The “Monkey Selfie” Case

Although the “Monkey Selfie” case involves whether an animal can receive copyright protection, this case presents a very similar question as the DABUS team: can a non-human have intellectual property rights?¹⁰⁷

In *Naruto v. Slater*, the United States Court of Appeals for the Ninth Circuit held that a monkey and all other animals lacked statutory standing under the Copyright Act because they were not human.¹⁰⁸ In the case, a wildlife photographer visiting a reserve in Indonesia in 2011 left his camera unattended at the reserve.¹⁰⁹ While the camera was unattended, a seven-year-old crested macaque named Naruto allegedly took several

101. *Id.* at 393, 395.

102. *Id.* at 395 (quoting *People ex. rel. Nonhuman Rts. Project, Inc. v. Lavery*, 998 N.Y.S.2d 248, 249 (N.Y. App. Div. 2014)).

103. *Id.*

104. *Id.* at 395-96.

105. *Cetacean Cmty. v. Bush*, 386 F.3d 1169, 1175-76 (9th Cir. 2004).

106. *Id.* at 1176.

107. *See Naruto v. Slater*, 888 F.3d 418 (9th Cir. 2018).

108. *Id.* at 420.

109. *Id.*

photographs of himself (“Monkey Selfies”) with the photographer’s camera.¹¹⁰ In 2014, the photographer published the Monkey Selfies in a book and identified himself as one of the copyright owners of the Monkey Selfies.¹¹¹ However, throughout the book, the photographer admits that Naruto took the photographs at issue.¹¹² People for the Ethical Treatment of Animals (PETA) filed a “Next Friends” complaint against the photographer on behalf of Naruto alleging copyright infringement.¹¹³ The United States District Court for the Northern District of California granted the motions to dismiss by the plaintiffs on the grounds that the complaint did not establish standing under Article III or statutory standing under the Copyright Act.¹¹⁴ The district court concluded that although Naruto might have had Article III standing, he failed to establish statutory standing under the Copyright Act.¹¹⁵

The Ninth Circuit affirmed the district court’s decision and agreed that Naruto did not have statutory standing under the Copyright Act.¹¹⁶ The court looked to their circuit’s precedent in *Cetacean Community v. Bush* and stated that “if an Act of Congress plainly states that animals have statutory standing, then animals have statutory standing. If the statute does not so plainly state, then animals do not have statutory standing.”¹¹⁷ They further stated that the Copyright Act “does not expressly authorize animals to file copyright infringement suits under the statute.”¹¹⁸

B. Corporations

Corporations have been recognized as legal persons going back to the nineteenth century.¹¹⁹ They are considered legal persons, like people, and are viewed as individuals in the eyes of the law.¹²⁰ Corporations are also one of the non-human entities that have intellectual property rights.¹²¹ A corporation shares several protections and rights that a natural person

110. *Id.*

111. *Id.*

112. *Id.*

113. *Id.*

114. *Id.*

115. *Id.* at 420-21.

116. *Id.* at 425-26.

117. *Id.* at 426.

118. *Id.*

119. *See* *Bank of the U.S. v. Deveaux*, 9 U.S. 61, 92 (1806).

120. *Redinger v. Standard Oil Co.*, 148 N.W.2d 225, 229 (Mich. Ct. App. 1967).

121. *See* Russ Pearlman, *Recognizing Artificial Intelligence (AI) as Authors and Inventors Under U.S. Intellectual Property Law*, 24 RICH. J.L. & TECH. 2, 21 (2018).

has; however, the United States Supreme Court has stated that a corporation “must exist by means of natural persons.”¹²²

The doctrine of “corporate personhood” was established to address the ongoing legal debate over the extent to which rights traditionally associated with natural persons should also be afforded to corporations.¹²³ This doctrine recognizes “corporations as legal persons separate in identity from the natural persons who form them.”¹²⁴ The idea of “corporate personhood” “serves as a basis for the limited liability of the corporate form and the ability of a corporation to exercise rights that are enumerated in the Constitution for persons.”¹²⁵ Although the Supreme Court doesn’t use the term “corporate personhood,” its decisions on the rights of corporations rely on the understanding that corporations have similar rights as their incorporators, natural persons.¹²⁶ The Court’s recognition of the legal personhood status, rights, and protections for corporations have gradually expanded over time.¹²⁷ For example, the Supreme Court has recognized that the First Amendment applies to corporations, including the protection of political speech.¹²⁸ Furthermore, the Court has held that a corporation was a “person” under the Religious Freedom Restoration Act of 1993.¹²⁹ In addition, under contract law, corporations are recognized as legal persons and individuals in the eyes of the law and are bound by their contracts regardless of internal disagreements.¹³⁰

VI. THE FUTURE OF AI-GENERATED WORKS AND PATENT INVENTORSHIP RIGHTS

Unlike animals, corporations are formed and owned by humans, and thus a court will look to the “character of the individuals who compose the corporation.”¹³¹ In order to determine whether artificial intelligence systems should be awarded legal personhood status, courts could follow

122. *Deveaux*, 9 U.S. at 65.

123. See Thomas F. Cocchi, Jr., “Corporations Are People, My Friend:” *The Merits of the Expansion of Corporate First Amendment Rights in the Modern Era*, 17 DUQ. BUS. L.J. 25, 27-34 (2015).

124. *Id.* at 26.

125. *Id.*

126. See *id.*

127. See *Burwell v. Hobby Lobby Stores, Inc.*, 573 U.S. 682 (2014); *Citizens United v. Fed. Election Comm’n*, 558 U.S. 310 (2010); *Deveaux*, 9 U.S. 61.

128. See, e.g., *Citizens*, 558 U.S. at 341-42; *First Nat’l Bank of Bos. v. Bellotti*, 435 U.S. 765, 778, n.14 (1978); *NAACP v. Button*, 371 U.S. 415, 428-29 (1963).

129. *Burwell*, 573 U.S. at 706.

130. *Redinger*, 148 N.W.2d at 229.

131. *Deveaux*, 9 U.S. at 92.

the same analysis applied to determine whether a corporation should have legal personhood status. Both corporations and artificial intelligence systems are formed and owned by humans. Like a corporation, any legal liabilities an AI suffers would fall onto its owners and programmers.

A. Criticism on Recognizing AI Patent Inventors

Attorneys, AI experts, and scholars have raised many concerns that would need to be resolved if an AI system is recognized as a patent inventor.¹³² One concern involves the enforcement of AI patents.¹³³ It could be difficult to establish and prove patent infringement as it is not often clear how an AI system actually works.¹³⁴ One possible solution that has been suggested by commentators is the idea of reversed burdens of proof.¹³⁵

Another important question raised is, Who would accept the legal liabilities of an artificial intelligence system if something goes wrong? Because there is no “natural person” listed as the inventor, it is assumed that no one can truly be held liable. However, in the case of corporations, despite not being a human being, corporations are still held legally liable. A corporation’s owners, typically shareholders, who are natural persons are the ones held liable for a corporation’s wrongdoing. This same framework could be applied for artificial intelligence. In that case, the programmers and owners of the artificial intelligence system would have to accept legal liability for any of the system’s wrongdoing.

B. Support for Recognizing AI Patent Inventors

The DABUS team’s belief on why patent protection is necessary for AI-generated inventions rest on one word: innovation.¹³⁶ They believe that this protection will directly motivate those who develop, own, and use AI.¹³⁷ If an AI-generated work is excluded from inventorship, it could discourage developers and hinder AI innovation.¹³⁸ Ultimately, if AI-

132. See Liyanage & Berry, *supra* note 30.

133. *Id.*

134. *Id.*

135. *Id.*

136. Abbott, *supra* note 4.

137. *Id.*

138. Benjamin Ford, *Artificial Intelligence Inventor Asks If ‘WHO’ Can Be an Inventor Is the Wrong Question?*, IPWATCHDOG (Aug. 5, 2019), <http://www.ipwatchdog.com/2019/08/05/artificial-intelligence-inventor-asks-whether-can-inventor-wrong-question/id=111896/>.

generated patents are allowed, it will result in more innovation for our society.¹³⁹

Moreover, current patent law requires humans to avoid the issue and register their inventions “with silence regarding where the true creativity may primarily lie.”¹⁴⁰ This devalues human inventorship by allowing people to take credit for work they have not done.¹⁴¹ The DABUS team stresses that listing an AI as an inventor is “not a matter of providing rights to machines, but it would protect the moral rights of traditional human inventors and the integrity of the patent system.”¹⁴²

VII. CONCLUSION

U.S. patent laws should adapt to the realities of today’s AI by expanding their definition of an inventor for the patent system. Although the DABUS team is the first to submit patent applications as an AI inventor, they will surely not be the last. If AI systems are truly inventing patentable concepts autonomously, our laws should allow AI systems to be recognized as inventors. Expanding our patent laws to recognize AI inventors shows that the U.S. is continuing to be a leader in forward-thinking and progressive technology.

The first step in expanding our patent law to allow AI inventorship would likely require AI systems to be granted legal personhood status. As discussed, there are many objections and concerns to the idea of AI personhood, but these objections can be addressed and solved by limiting the scope of an AI system’s legal personhood. The rights and protections of an AI system should be limited and in no way allow the system to possess all rights and protections of a natural, human person. The best place to start in developing AI personhood would be to look at non-human entities that currently possess legal personhood status, such as corporations. Based on the rights, protections, and liabilities of other “artificial entities,” the rights for an AI system can be altered to what is best suited for an artificial intelligence system. Ultimately, the objective is to allow artificial intelligence the same rights and protections allowed to “individuals” under the U.S. patent laws that could expand even further to other intellectual property rights.

This country’s intellectual property law was founded on promoting creativity, encouraging ideas, and fostering innovation. To allow an

139. Abbott, *supra* note 4.

140. Pearlman, *supra* note 121, at 49.

141. Abbott, *supra* note 4.

142. *Id.*

innovative and constantly improving system like an AI machine the opportunity to contribute to our society will help maximize societal benefits. Rather than seeing an AI system as a disruptor, we should view AI as an ally that is here to contribute meaningful ideas and processes to our society to help us adapt and improve in our changing world.