

**NOTE**  
**THE A.I. INTELLECTUAL PROPERTY**  
**OFFICE OF THE FUTURE:**  
**A PROPOSAL TO GRANT AUTHORSHIP AND**  
**INVENTORSHIP RIGHTS TO A.I.**

I. INTRODUCTION

“By changing nothing, nothing changes.”

*Tony Robbins*<sup>1</sup>

The advancement of artificial intelligence (“A.I.”) technology within the last decade has changed the world.<sup>2</sup> Yet, the law in the United States has not changed with it.<sup>3</sup> The way we communicate, receive information, and even how we drive are all areas of our daily lives that have been greatly affected by A.I. development.<sup>4</sup> A.I. now has the capability to independently think of ideas, create artwork, and produce music.<sup>5</sup> Developers explain that A.I. is “just like a conscious human brain”

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1. Tony Robbins (@TonyRobbins), TWITTER (Jan. 29, 2020, 4:11 PM), <https://twitter.com/tonyrobbins/status/1222628356471939073?lang=en> [<https://perma.cc/JR9U-CRXG>].

2. See Maithreyan Surya, *The Decade of Artificial Intelligence*, TOWARDS DATA SCI. (Dec. 31, 2019), <https://towardsdatascience.com/the-decade-of-artificial-intelligence-6fcdf2fae473> [<https://perma.cc/PJ95-8LEC>] (summarizing notable A.I. advancements within the last decade).

3. W. Keith Robinson & Joshua T. Smith, *Emerging Technologies Challenging Current Legal Paradigms*, 19 MINN. J.L., SCI. & TECH. 355, 356 (2018) (“The law has always struggled to keep pace with technological developments.”).

4. See Surya, *supra* note 2. A.I. is also being used in hospitals. See Arlene Weintraub, *Hospitals Utilize Artificial Intelligence to Treat Patients*, U.S. NEWS & WORLD REP. (Oct. 31, 2017), <https://www.usnews.com/news/healthcare-of-tomorrow/articles/2017-10-31/hospitals-utilize-artificial-intelligence-to-treat-patients> [<https://perma.cc/6VW6-MQVM>]. And, A.I. has become increasingly beneficial in publishing. See Holly Lynn Payne, *Why Book Publishing Seeks Artificial Intelligence*, HUFFINGTON POST (June 19, 2017, 10:51 PM), [https://www.huffpost.com/entry/why-book-publishing-seeks-artificial-intelligence\\_b\\_59482841e4b0961faacbe5d6](https://www.huffpost.com/entry/why-book-publishing-seeks-artificial-intelligence_b_59482841e4b0961faacbe5d6) [<https://perma.cc/8NMH-XHYC>].

5. Alexandra Jones, *Artificial Intelligence Can Now Be Recognised as an Inventor After Historic Australian Court Decision*, ABC NEWS (Aug. 2, 2021, 1:55 AM) [hereinafter Jones, *Artificial Intelligence Can Now Be Recognised as an Inventor*], <https://www.abc.net.au/news/2021-08-01/historic-decision-allows-ai-to-be-recognised-as-an-inventor/100339264> [<https://perma.cc/MLS7-NYK9>] (“AI systems are now fully capable of inventing, creating artworks and producing music.”).

with the “capacity to rival the creative and innovative capacity of humans.”<sup>6</sup> A.I. creations are so evolved that they satisfy most of the criteria required to be a copyrightable work or a patentable invention.<sup>7</sup> However, these creations cannot receive intellectual property rights where the A.I. system is named as the author or inventor on the application.<sup>8</sup>

The intellectual property offices and the federal courts use an antiquated interpretation of the words “author” and “inventor” and hold that these terms only include “natural persons.”<sup>9</sup> Despite its unique human-like capabilities, an A.I. system is not a “natural person” and therefore it cannot receive legal protection for its work through a copyright or patent.<sup>10</sup> For patents, the issue with this is twofold: since the A.I. system is not a human, it cannot receive intellectual property rights as the inventor, and since only the first to conceive of an idea can be named as the inventor, and the human developers of A.I. systems are technically not the first to conceive of the idea, it is also invalid for their name to be listed as the inventor on the application.<sup>11</sup> What protection does this leave for A.I.-created works?<sup>12</sup>

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6. *Id.*

7. See 35 U.S.C. §§ 101–103 (requiring utility, novelty, and non-obviousness for patents); 17 U.S.C. § 102(a) (requiring “original works of authorship fixed in any tangible medium of expression”).

8. See Michelle Song, *Artificial Intelligence: Can It Be an Inventor or an Author?*, NAT’L L. REV. (July 14, 2022), <https://www.natlawreview.com/article/artificial-intelligence-can-it-be-inventor-or-author> [<https://perma.cc/LV55-RLUB>] (discussing the current stance of the United States on A.I. authorship, specifically its refusal to protect works).

9. Matthew Horton & Austin J. Kim, *Federal Circuit Rules Inventorship Must Be Natural Human Beings*, FOLEY & LARDNER LLP (Aug. 11, 2022), <https://www.foley.com/en/insights/publications/2022/08/federal-circuit-inventorship-natural-human-beings> [<https://perma.cc/9QFB-WCD6>].

10. Randi L. Karpinia, *Intellectual Property Rights of Artificial Intelligence Inventors*, AM. INTEL. PROP. L. ASS’N, <https://www.aipla.org/list/innovate-articles/intellectual-property-rights-of-artificial-intelligence-inventors> [<https://perma.cc/F7KY-UHLR>] (last visited Dec. 2, 2023). A.I. is unique in that it falls somewhere between a natural person and a legal person. See Sergio Alberto Gramitto Ricci, *Artificial Agents in Corporate Boardrooms*, 105 CORNELL L. REV. 869, 882 (2020) [hereinafter Gramitto Ricci, *Artificial Agents*]. Both humans and A.I. systems can act autonomously, essentially “perceiving [their] environment through sensors and acting on that environment through effectors.” *Id.* (quoting STUART J. RUSSELL & PETER NORVIG, *ARTIFICIAL INTELLIGENCE: A MODERN APPROACH* 34 (1st ed. 1995)). However, A.I. is unlike humans because it does not exist in nature. *Id.* at 892. Much like corporations or other legal persons, it needs to be created through human or legal intervention. *Id.* The difference between legal persons and A.I., though, is that legal persons such as corporations depend on human agents to act, but A.I. does not rely on or need such human agents because it can autonomously think and create. *Id.* at 893.

11. Karpinia, *supra* note 10. While looking closer at the Patent Act, Karpinia points out that a person who “did not participate” in the inventive mental act “is NOT an inventor.” *Id.*

12. See Ryan E. Long, *AI Creations: Legally Protected?*, CTR. FOR INTERNET & SOC’Y (Apr. 20, 2021, 2:48 PM), <https://cyberlaw.stanford.edu/blog/2021/04/ai-creations-legally-protected> [<https://perma.cc/6AM3-6HUF>]; see also COMPUT. SCI. & TELECOMMS. BD. NAT’L RSCH. COUNCIL, *THE DIGITAL DILEMMA: INTELLECTUAL PROPERTY IN THE INFORMATION AGE* 18 (2000)

Refusing to accept A.I.-named applications can have a dramatic and detrimental impact on innovation.<sup>13</sup> A.I. creations represent the future, and the law needs to adapt to make sure that the progression of A.I. continues in a beneficial and legal manner.<sup>14</sup> Specifically, A.I. creations need an independent space within the United States' intellectual property laws.<sup>15</sup> The current intellectual property offices in the United States are the Copyright Office and the Patent and Trademark Office.<sup>16</sup> These are the only two options within the United States for applicants to receive intellectual property rights, and neither office is willing to accept an application listing an A.I. system as the author or inventor.<sup>17</sup> This decision deprives society of the vast number of potential beneficial creations that can come from A.I.<sup>18</sup> It also likely puts the United States behind other nations that are adapting to include A.I. creations under their intellectual property laws.<sup>19</sup>

This Note proposes a two-part solution.<sup>20</sup> First, Congress should amend the language of the Copyright and Patent Acts to include A.I. in the definition of what can be an author and inventor.<sup>21</sup> Second, Congress should create a new intellectual property office designated solely for the review of A.I. applications.<sup>22</sup> This Note argues that a new office promotes future development and contributes to a technologically advanced

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(“Digital technology enables the creation of new kinds of information products and services, which raises a multitude of legal issues . . . [and] pose[s] difficult questions about authorship, ownership, and the boundaries among protected works.”).

13. See Sam Norris, *Artificial Intelligence and Intellectual Property: Non-Human Innovation and the Ownership of Rights*, STARTUP (Nov. 6, 2020), <https://medium.com/p/ad38535c1cde> [<https://perma.cc/J3RA-QBVV>].

14. See *id.*

15. See *infra* Part IV. As this Note suggests, a unique approach to this topic is required to keep up with the times. See Norris, *supra* note 13. Norris understands this need for change, stating, “IP has a real opportunity to get ahead of the curve on this issue, but it will be down to domestic and international legal institutions to take the initiative and create some form of unique regulation for AI innovation.” *Id.*

16. WIPO, *Directory of Intellectual Property Offices*, <https://www.wipo.int/directory/en/urls.jsp> [<https://perma.cc/CV3Y-AUE7>] (last visited Dec. 2, 2023).

17. See Song, *supra* note 8.

18. See Matt Hamblen, *Team Seeks Patents for Inventions Created by DABUS, an AI*, FIERCE ELECS. (Aug. 1, 2019, 10:43 AM), <https://www.fierceelectronics.com/electronics/team-seeks-patents-for-inventions-created-by-dabus-ai> [<https://perma.cc/B34P-JHPN>] (“If outdated IP laws around the world don’t respond quickly to the rise of the inventive machine, the lack of incentive for AI developers could stand in the way of a new era of spectacular human endeavor.”).

19. See Zachary Grant, *Artificial Intellectual Property*, MICH. BAR J., Jan. 2022, at 18, 20 (“A Chinese court ruled that AI-generated news articles qualify for copyright protection and can be enforced by the publishing company that owns the AI machine.”); see also *infra* Part III.C.

20. See *infra* Part IV.

21. See *infra* Part IV.A.

22. See *infra* Part IV.B.

society within the borders of the United States.<sup>23</sup> The new office would exist as a separate entity to the other two existing intellectual property offices.<sup>24</sup> A new separate set of governing rules and regulations would also accompany the creation of the office and would serve as a guide for some of the unknown questions that would arise.<sup>25</sup>

This Note begins with a summary of the rapid and progressive history of A.I. development, including its ability to conceive ideas and create tangible works in a manner similar to humans.<sup>26</sup> Part II then explores the governing laws of intellectual property, focusing on the language of the Intellectual Property Clause of the Constitution and the Copyright and Patent Acts.<sup>27</sup> Part III delves into a recent example to highlight the barriers facing A.I. creations, specifically how the application of traditional laws does not account for modern technological advancements.<sup>28</sup> Part IV argues that to best adapt to the future of innovation, Congress should amend the language of the Copyright and Patent Acts to include A.I. in the definitions of author and inventor for purposes of receiving intellectual property rights.<sup>29</sup> Part IV also argues that a new office dedicated to copyright and patent applications of A.I. would be the best solution to balance the ever-changing new world of both human and machine creations.<sup>30</sup>

## II. BACK TO THE FUTURE: A BRIEF HISTORY ON INTELLECTUAL PROPERTY LAW AND THE DEVELOPMENT OF A.I.

This Part explains the development of A.I. technology and how the new capability of A.I. systems to innovate autonomously is unaccounted for in the current laws of the United States.<sup>31</sup> Subpart A discusses the functional background of A.I. technology; recent significant developments; and its modern, impressive capabilities.<sup>32</sup> Subpart B then looks closely at the specific language and history of the governing intellectual property laws in the United States.<sup>33</sup> Subpart B concludes with case law where different courts addressed issues of authorship and inventorship.<sup>34</sup>

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23. *See infra* Part IV.B.2.

24. *See infra* Part IV.B.2.

25. *See infra* Part IV.C.

26. *See infra* Part II.A.

27. *See infra* Part II.B.

28. *See infra* Part III.

29. *See infra* Part IV.

30. *See infra* Part IV.

31. *See infra* Part II.

32. *See infra* Part II.A.

33. *See infra* Part II.B.1–2.

34. *See infra* Part II.B.3.

These precedent cases are similar, but notably not exact, to the issue presented for A.I.<sup>35</sup>

### *A. Helpful Tech Terms to Understand A.I. Development*

This is a time of unprecedented technological development.<sup>36</sup> Computers and A.I. systems already contribute to the modern financial system, modes of transportation, healthcare, cars, and home appliances, and that is only to name a few.<sup>37</sup> The world of A.I. technology is too detailed and complex to explain here in depth, but before discussing any legal considerations, it is pertinent to understand some of the different terminology involved.<sup>38</sup>

A.I. can generally be defined as “the science and engineering of making intelligent machines, especially intelligent computer programs.”<sup>39</sup> One subfield of A.I. is called machine learning, and this particular field uses human intervention to segment data into different categories.<sup>40</sup> A further subfield of machine learning is called deep learning, which is the type of A.I. with the closest association to operating at a human level, and this is the field of A.I. referred to throughout this Note.<sup>41</sup>

The deep learning A.I. systems that now autonomously create and invent works rely on a “type of connectionist artificial intelligence,” which is where the system receives general knowledge and then

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35. See *infra* Part II.B.3.

36. See Katyanna Quach, *One Man’s Battle to Get Patent Rights for AI Inventors in America May Be Over*, REGISTER (Sept. 1, 2022), <https://www.theregister.com/2022/09/01/ai-patent-rights> [<https://perma.cc/4M93-JVK8>] (“Machines can outpace humans in generating intellectual property, thus producing unprecedented global prosperity.”).

37. See JAMES BARRAT, *OUR FINAL INVENTION: ARTIFICIAL INTELLIGENCE AND THE END OF THE HUMAN ERA 3* (1st ed. 2013).

38. See *infra* Part II.A. For more information on the breadth of artificial intelligence history and development, see STUART J. RUSSELL & PETER NORVIG, *ARTIFICIAL INTELLIGENCE: A MODERN APPROACH 16-33* (3d ed. 2010).

39. *What Is Strong AI?*, IBM, <https://www.ibm.com/topics/strong-ai> [<https://perma.cc/SY2V-EM7C>] (last visited Dec. 2, 2023) (quoting John McCarthy, *What Is AI? / Basic Questions*, PROFESSOR JOHN MCCARTHY, FATHER OF AI, <http://jmc.stanford.edu/artificial-intelligence/what-is-ai/index.html> [<https://perma.cc/PA48-K5BL>]).

40. See *id.* (defining machine learning).

41. See *id.* (defining deep learning). Deep learning A.I. is made up of varying levels of intelligence, labeled “weak,” “strong,” or “superintelligence.” Sean Illing, *Why Not All Forms of Artificial Intelligence Are Equally Scary*, VOX (Mar. 8, 2017, 9:40 AM), <https://www.vox.com/science-and-health/2017/3/8/14830108/artificial-intelligence-science-technology-robots-singularity-bostrom> [<https://perma.cc/8UPA-KMJU>] (“There are, generally speaking, three forms of AI . . .”). The A.I. systems that currently exist today are still only considered weak or narrow, which shows that the future potential of A.I. will be extremely impressive, possibly even exceeding the capacity of human-level intelligence. See *id.*

independently conceives of a novel creation.<sup>42</sup> The A.I. system can do this because it operates using “neural networks” that generate ideas through a complex process.<sup>43</sup> The process essentially alters the network interconnections which are then checked and balanced by a second system of neural networks to detect any problems with the new idea and then reinforces the idea based on whether it can be considered important or useful.<sup>44</sup> This process is what allows the A.I. system to generate new ideas without human intervention.<sup>45</sup>

These new capabilities of A.I. create uncharted territory for the law.<sup>46</sup> A.I. is a nonhuman that can perform tasks mentally and physically similar to humans.<sup>47</sup> The law recognizes no such thing, and it is now time to figure out the best way to approach the modern technology of the times.<sup>48</sup>

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42. John Richards, *DABUS & AUKUS: A Tale of Three Approaches to the Question of Whether an Invention Created by a Machine Using Artificial Intelligence Is Patentable*, JD SUPRA (Dec. 3, 2021), <https://www.jdsupra.com/legalnews/dabus-aucus-a-tale-of-three-approaches-2740160> [<https://perma.cc/UW97-EWC9>].

43. Hamblen, *supra* note 18; see Stephen Thaler, *DABUS Explained to the AIPLA*, LINKEDIN (May 22, 2020) [hereinafter Thaler, LINKEDIN], <https://www.linkedin.com/pulse/dabus-explained-aipla-dr-stephen-thaler> [<https://perma.cc/8MSX-2ENJ>] (“A vast system of artificial neural nets chain together to form complex concepts and their anticipated consequences.”). “Neural networks are computing systems with interconnected nodes that work much like neurons in the human brain” that “recognize hidden patterns and correlations in raw data, cluster and classify it, and—over time—continuously learn and improve.” SAS, *Artificial Neural Networks*, SAS INSIGHTS, [https://www.sas.com/en\\_us/insights/analytics/neural-networks.html](https://www.sas.com/en_us/insights/analytics/neural-networks.html) [<https://perma.cc/B9M6-7ZCT>] (last visited Dec. 2, 2023).

44. Hamblen, *supra* note 18; see Ryan Abbott, *Imagination Engines Inc. Announces a New Patent That Is Arguably the Successor to Deep Learning and the Future of Artificial General Intelligence (AGI)*, ARTIFICIAL INVENTOR PROJECT (Oct. 10, 2019), <https://artificialinventor.com/dabus-receives-a-us-patent> [<https://perma.cc/8NMK-BXAB>].

45. See Ryan Abbott, *I Think, Therefore I Invent: Creative Computers and the Future of Patent Law*, 57 B.C. L. REV. 1079, 1084 (2016); see also Hamblen, *supra* note 18 (“In some cases, AI is no longer a tool, even a very sophisticated tool. In some cases, AI is automating innovation.”).

46. See Andres Guadamuz, *Artificial Intelligence and Copyright*, WIPO MAG. (Oct. 2017), [https://www.wipo.int/wipo\\_magazine/en/2017/05/article\\_0003.html](https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html) [<https://perma.cc/UA5W-NYYW>] (“[T]here are indications that the laws of many countries are not amenable to non-human copyright.”); see also Mark Jones, *The Question Mark Over AI and Intellectual Property*, TECHWIRE ASIA (Sept. 30, 2020) [hereinafter Jones, *The Question Mark Over AI and Intellectual Property*], <https://techwireasia.com/2020/09/the-question-mark-over-ai-and-intellectual-property> [<https://perma.cc/KLQ5-895X>] (“The trouble is, current laws are not consistent and clear cut.”).

47. See Abbott, *supra* note 45, at 1084-85 (explaining the human-like capabilities of a specific A.I. system). For A.I. physical attributes that are similar to humans, see *Atlas*, ROBOTS, <https://robotsguide.com/robots/atlas2016> [<https://perma.cc/H4RL-JXGH>] (last visited Dec. 2, 2023) (explaining the robot named Atlas that can lift boxes, run, jump, and do backflips).

48. See *Impact of Artificial Intelligence on IP Policy: Call for Comments*, WIPO, [https://www.wipo.int/about-ip/en/artificial\\_intelligence/call\\_for\\_comments/index.html](https://www.wipo.int/about-ip/en/artificial_intelligence/call_for_comments/index.html) [<https://perma.cc/T8RF-42ZD>] (last visited Dec. 2, 2023). The WIPO was calling for comments and seeking to get information to facilitate a future discussion about the impact of A.I. on intellectual property policies. *Id.*

### B. Governing Intellectual Property Laws

The following Sections provide background on the intellectual property laws in the United States.<sup>49</sup> Section 1 examines the power given to Congress under the Constitution of the United States.<sup>50</sup> Section 2 looks at the Copyright and Patent Acts, two acts created by Congress while acting under its constitutional authority.<sup>51</sup> Section 3 then discusses relevant case law involving non-human applications that the courts and the intellectual property offices are currently using to make decisions about A.I. creations.<sup>52</sup>

#### 1. The Power of Congress Under the Intellectual Property Clause

The intellectual property rights for patents and copyright, which are the focus of this Note, are regulated on a federal level under the Intellectual Property Clause of the Constitution.<sup>53</sup> This clause is Congress’s source of power to enact governing legislation of patents and copyright and it is interchangeably referred to as the “Patent and Copyright Clause.”<sup>54</sup> One of the original purposes of this clause was to create a uniform, national law to govern copyright and patents because the states could not effectively protect them separately.<sup>55</sup>

Under the Intellectual Property Clause, Congress has the power to regulate patents and copyright by “promot[ing] 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[.]”<sup>56</sup> The

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49. See *infra* Part II.B.1–3.

50. See *infra* Part II.B.1.

51. See *infra* Part II.B.2; Brian Golger, *Copyright in the Artificially Intelligent Author: A Constitutional Approach Using Philip Bobbitt’s Modalities of Interpretation*, 22 U. PA. J. CONST. L. 867, 870 n.24 (2020) (“Congress acted swiftly in exercising this power, passing the first Copyright Act in 1790.”).

52. See *infra* Part II.B.3.

53. *Intellectual Property*, LEGAL INFO. INST. AT CORNELL L. SCH., [https://www.law.cornell.edu/wex/intellectual\\_property](https://www.law.cornell.edu/wex/intellectual_property) [<https://perma.cc/9NF9-D5UW>] (last visited Dec. 2, 2023).

54. *Intellectual Property Clause*, LEGAL INFO. INST. AT CORNELL L. SCH., [https://www.law.cornell.edu/wex/intellectual\\_property\\_clause](https://www.law.cornell.edu/wex/intellectual_property_clause) [<https://perma.cc/ED8Y-SGBB>] (last visited Dec. 2, 2023).

55. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 162 (1989) (“One of the fundamental purposes behind the Patent and Copyright Clauses of the Constitution was to promote national uniformity in the realm of intellectual property.”); see THE FEDERALIST No. 43 (James Madison) (“The States cannot separately make effectual provisions for either of the cases, and most of them have anticipated the decision of this point, by laws passed at the instance of Congress.”).

56. U.S. CONST. art. I, § 8, cl. 8. As the language of the clause suggests, there are five constitutional limitations for when copyrights and patents can be granted. Dotan Oliar, *The Origins and Meaning of the Intellectual Property Clause* 50-51 (Sept. 15, 2004) (unpublished manuscript), [https://cyber.harvard.edu/ip/oliar\\_ipclause.pdf](https://cyber.harvard.edu/ip/oliar_ipclause.pdf) [<https://perma.cc/8ZSM-3ACM>]. First, they

language “to authors and inventors” is the troublesome element when it comes to A.I., and the question becomes whether A.I. can be included in the definition of those terms.<sup>57</sup> To answer this question, the courts should, as they have previously held, give great deference to Congress regarding the means that it uses to carry out the powers and limitations granted to it in the Intellectual Property Clause.<sup>58</sup>

## 2. The Specific Statutory Language in the Copyright and Patent Acts Posing the Problem for A.I. Creations

The Patent Act states that “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”<sup>59</sup> An inventor is defined as the “individual . . . who invented or discovered the subject matter of the invention.”<sup>60</sup> There is also a requirement that the individual who “believes *himself* or *herself* to be the original inventor” make an oath or declaration.<sup>61</sup> The Patent and Trademark Office and the federal

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must be granted “to promote the progress of science and useful arts.” *Id.* Second, they can only be granted for specified, “limited times.” *Id.* at 51. Third, the rights must be granted to “authors and inventors.” *Id.* Fourth, it must secure an “exclusive right.” *Id.* Fifth, and finally, the granted copyright or patent must be for “writings and discoveries.” *Id.*

57. See David L. Schwartz & Max Rogers, “Inventorless” Inventions? *The Constitutional Conundrum of AI-Produced Inventions*, 35 HARV. J.L. & TECH. 531, 540, 544 (2022).

58. See *Eldred v. Ashcroft*, 537 U.S. 186, 212 (2003) (“[I]t is generally for Congress, not the courts, to decide how best to pursue the Copyright Clause’s objectives.”); see also *Graham v. John Deere Co.* 383 U.S. 1, 6 (1966) (“Congress may, of course, implement the stated purpose of the Framers by selecting the policy which in its judgment best effectuates the constitutional aim.”). This Note argues that Congress can rely solely on its power under the Intellectual Property Clause; however, it is worth noting that a possible alternative for Congress would be to act under the Commerce Clause, which allows Congress to regulate interstate and foreign commerce. U.S. CONST. art. I, § 8, cl. 3; see KEVIN J. HICKEY, CONG. RSCH. SERV., IF10986, INTELLECTUAL PROPERTY LAW: A BRIEF INTRODUCTION 3 (2022). There is much debate about the limitations that the Intellectual Property Clause and the Commerce Clause place on one another and whether or not they are intended to interact. See Kevin J. Hickey, *The Copyright/Commerce Clause Collision: A Subject Matter Approach*, 82 U. CIN. L. REV. 1, 3-9 (2013); Jeanne C. Fromer, *The Intellectual Property Clause’s External Limitations*, 61 DUKE L.J. 1329, 1343, 1359-62 (2012) (discussing the debate about the language of the Intellectual Property Clause and the different views about internal and external limitations on the Intellectual Property Clause as it relates to Congress’s other powers); see also Richard B. Graves III, *Globalization, Treaty Powers, and the Limits of the Intellectual Property Clause*, 50 J. COPYRIGHT SOC’Y U.S.A. 199, 210-11 (2003) (exploring the extent of Congress’s power to legislate pursuant to its treaty power and whether the Intellectual Property Clause further limits this power). “In all the years since the *Trade-Mark Cases*, the question whether Congress can legislate pursuant to treaty what it cannot legislate pursuant to the Intellectual Property Clause has remained unanswered.” *Id.* at 200.

59. 35 U.S.C. § 101 (emphasis added).

60. 35 U.S.C. § 100(f) (emphasis added).

61. 35 U.S.C. § 115(b) (emphasis added).



courts have held that taken together, all of these terms in the Patent Act contextually imply that Congress intended a human-only application of the law.<sup>62</sup>

The Copyright Act states that copyright subsists “in original works of authorship.”<sup>63</sup> The word “authorship” elicits the most controversy when determining A.I.’s role.<sup>64</sup> The United States Code governs copyright law, but the Copyright Office also has a Compendium of Copyright Practices (“Compendium”) which provides guidance for the office and the courts as well.<sup>65</sup> The Compendium contains a human authorship requirement which states that “[t]he U.S. Copyright Office will register an original work of authorship, provided that the work was created by a human being.”<sup>66</sup> The Compendium elaborates further regarding machinery, stating:

Similarly, the Office will not register works produced by a machine or mere mechanical process that operates *randomly* or *automatically* without any creative input or intervention from a human author. The crucial question is “whether the ‘work’ is basically one of human authorship, with the computer [or other device] merely being an assisting instrument, or whether the traditional elements of authorship in the work (literary, artistic, or musical expression or elements of selection, arrangement, etc.) were actually conceived and executed not by man but by a machine.”<sup>67</sup>

An important difference between a machine and a mechanical process as compared to the type of A.I. discussed throughout this Note is that A.I. does not act randomly or automatically.<sup>68</sup> A.I. is not random

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62. See Schwartz & Rogers, *supra* note 57, at 538-39.

63. See 17 U.S.C. § 102(a).

64. See Tal Dadia et al., *Can AI Find Its Place Within the Broad Ambit of Copyright Law?*, 10 BERKELEY J. ENT. & SPORTS L. 37, 46-47 (2021).

65. See U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 301 (3d ed. 2021).

66. COMPENDIUM (THIRD) § 306. The Copyright Office has declared it will only register works of authorship provided the work was created by a human being because copyright law protects “the fruits of intellectual labor” that “are founded in the creative powers of the mind.” See, e.g., *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 346 (1991) (quoting *The Trade-Mark Cases*, 100 U.S. 82, 94 (1879)).

67. COMPENDIUM (THIRD) § 313.2 (emphasis added) (quoting U.S. COPYRIGHT OFF., REPORT TO THE LIBRARIAN OF CONGRESS BY THE REGISTER OF COPYRIGHTS 5 (1966)).

68. Dadia et al., *supra* note 64, at 47.

Automation is the completion of fixed repetitive tasks without human intervention; automation is predictable in that it follows a clear set of rules[.] AI is different in that, while it is not random, it is also not always predictable, it need not follow a set of rules and it can be employed to complete non-repetitive tasks, learning for prior tasks to predict and complete tasks better, without continued human intervention and instruction.

*Id.*

because it learns from a pattern of prior tasks, and it is also not automatic because it does more than complete repetitive tasks.<sup>69</sup>

### 3. Non-Human Authors and Inventors in Court

The above-mentioned disputed terms of inventor and author in the doctrinal laws have led courts to hold that such terms only apply to humans.<sup>70</sup> For patents, courts have historically held that non-human applicants like corporations and sovereigns cannot be considered inventors under the Patent Act because they cannot perform the necessary “mental act.”<sup>71</sup> An important difference pertaining to A.I. is that A.I. performs, or at least performs some mechanical version of, a “mental act” which allows it to create inventions on its own, entirely unknown to the original A.I. developer.<sup>72</sup> Furthering this point, corporations cannot act without human decision-making; they require human agents to function and provide consciousness, but A.I. does not need to rely on such human agency.<sup>73</sup>

Courts take a similar stance regarding copyright, and consistently refuse to interpret that the term “author” in the Copyright Act applies to non-human applicants such as animals.<sup>74</sup> In *Naruto v. Slater*, the Ninth

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69. *Id.* at 43, 47.

70. *See* Thaler v. Vidal, 43 F.4th 1207, 1212 (Fed. Cir. 2022); Schwartz & Rogers, *supra* note 57, at 535; Dadia et al., *supra* note 64, at 46-47.

71. *Univ. of Utah v. Max-Planck-Gesellschaft zur Forderung der Wissenschaften E.V.*, 734 F.3d 1315, 1323 (Fed. Cir. 2013); *see* *Beech Aircraft Corp. v. EDO Corp.*, 990 F.2d 1237, 1248 (Fed. Cir. 1993) (holding that corporations cannot be inventors because a company is “merely a corporate assignee” and therefore “only natural persons can be ‘inventors’”). This notion was affirmed in *Univ. of Utah*, a dispute between universities, where the court held that since the case did not involve citizens against a state, and only natural persons can perform the mental act required to be an inventor of a patent, then sovereign immunity was not at issue. *Univ. of Utah*, 734 F.3d at 1323. Now, corporations can be named as an “Applicant” which differs from “Inventor,” and the ownership rights in the invention are assigned to a corporate entity. *See* Andrew Berks, *Patent Ownership in the United States – Best Practices to Preserve Your Rights*, GDB L. (Oct. 26, 2021), <https://www.gdblaw.com/patent-ownership-rights-united-states> [<https://perma.cc/D8LN-GUKY>]. When an employee is the first to invent, their employment agreement often contains a clause requiring them to assign ownership rights to the corporation. *Id.*

72. *See* Abbott, *supra* note 45, at 1094 (“[T]he creative act is the result of random or chaotic perturbations in the machine’s existing connections that produce new results which, in turn, are judged by the machine for value.”). Abbott addresses the argument that humans create the A.I. system and therefore humans are involved in the creative process, preventing A.I. inventorship. *Id.* at 1094-95. However, he quickly shuts this down with an analogy to parents and children, stating that all humans would not exist without contribution from their parents and yet that does not make a parent the inventor of their child’s patents. *Id.* at 1095.

73. *See* Gramitto Ricci, *Artificial Agents*, *supra* note 10, at 874 (“[S]hould legal capacity be granted to AI, it should not resemble the legal personality provided to corporations because corporations ultimately rely on human agents, while AI would not.”); *see also id.* at 893.

74. *See* *Naruto v. Slater*, 888 F.3d 418, 426 (9th Cir. 2018).

Circuit denied a monkey intellectual property rights as a photographer of a selfie that it took.<sup>75</sup> The court reasoned that the Copyright Act refers to an author’s “children,” “widow,” and “grandchildren,” which are all terms that imply humanity.<sup>76</sup> In another copyright case, *Kelley v. Chicago Park District*, a living garden was denied intellectual property rights after the Seventh Circuit reasoned that “authorship is an entirely human endeavor.”<sup>77</sup> These cases demonstrate the courts’ adherence to the human authorship requirement expressed in the Compendium.<sup>78</sup>

Although the courts seem unyielding in their interpretation of the terms “author” and “inventor” in these cases, it is important to note that the courts are not always entirely opposed to modifying the interpretation of doctrinal language.<sup>79</sup> In *Burrow-Giles Lithographic Co. v. Sarony*, the Supreme Court contemplated how to properly interpret the word “writings.”<sup>80</sup> The Court held that its constitutional meaning included photographs, even though photographs were not one of the items explicitly listed by Congress as a writing.<sup>81</sup> The explanation provided here was that “[t]he only reason why photographs were not included in the extended list in the act of 1802 is probably that they did not exist.”<sup>82</sup> Is that not also true for A.I.?<sup>83</sup>

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75. *Id.* For the selfie in question, see Tanya Basu, *Monkey Should Get Rights to Famous Selfie*, *PETA Says*, TIME (Sept. 22, 2015, 1:18 PM), <https://time.com/4044452/peta-monkey-selfie-copyright> [<https://perma.cc/RHR3-3RE8>].

76. *Naruto*, 888 F.3d at 426.

77. *Kelley v. Chi. Park Dist.*, 635 F.3d 290, 304 (7th Cir. 2011) (quoting 2 WILLIAM F. PATRY, PATRY ON COPYRIGHT § 3:19 (2010)). The Seventh Circuit also discussed the work’s lack of fixation, a requirement that helps prove creation and infringement. *Id.* at 303-04. The work was not permanent or stable and thus, was not copyrightable. *Id.* at 304.

78. COMPENDIUM (THIRD) § 306. Other examples of works that do not meet the human authorship requirement include:

[a] mural painted by an elephant[.] [a] claim based on the appearance of actual animal skin[.] [a] claim based on driftwood that has been shaped and smoothed by the ocean[.] [a] claim based on cut marks, defects, and other qualities found in natural stone[.] [and] [a]n application for a song naming the Holy Spirit as the author of the work.

*Id.* § 313.2.

79. *See, e.g.*, *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 58 (1884); *see also* Jonathan Baker, Note, *The Advent of Effortless Expression: An Examination of the Copyrightability of BCI-Encoded Brain Signals*, 105 MINN. L. REV. 389, 390-91, 400 (2020) (discussing the liberal interpretation of writings, which allowed the Supreme Court to find the Constitution broad enough to include authorizing copyright of photographs).

80. *Burrow-Giles Lithographic Co.*, 111 U.S. at 58.

81. *Id.* The Court was faced with the question of whether or not a photograph was within the definition of a “writing” even though it was not included in the declared list created by Congress. *Id.*

82. *Id.* The Court reasoned that since photographs and the scientific principles, chemicals, and machinery involved were all discovered long after the statute was enacted, the technology was just unknown at the time, and outside of that fact, the Court saw no other reason for its exclusion. *Id.*

83. *See supra* Part II.A. When it drafted the language of the Patent Act, Congress also likely did not foresee machines achieving the ability to conceive of and create patentable inventions. *See*

### III. THE TRIALS AND TRIBULATIONS FOR A.I. SYSTEMS IN THE INTELLECTUAL PROPERTY WORLD AND THE IMPACT ON INNOVATION

A.I. cannot currently receive intellectual property rights in the United States for its autonomous creations.<sup>84</sup> Notwithstanding the valiant efforts of A.I. developers, the United States' intellectual property offices and federal courts refuse to recognize A.I. creations where the A.I. system is named as the author or inventor.<sup>85</sup> The leading reason for such denial is that A.I. systems are not humans and therefore do not fit into the interpretation of an author or inventor as defined by the United States' legal system.<sup>86</sup> Precedent is vital to maintaining consistency in the law, but the courts and the intellectual property offices cannot be blind to the vast amount of technological change that is occurring.<sup>87</sup> The world is now part of what some consider the "Fourth Industrial Revolution" and advancements in A.I. are at the center of the unprecedented, high-paced change.<sup>88</sup> The courts' refusal to stray from precedent interpretation presents a roadblock for A.I. inventions.<sup>89</sup> These decisions hold

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Abbott, *supra* note 45, at 1097 ("Legislators were not thinking about computational inventions in 1952."); *see also* Karl F. Milde, Jr., *Can a Computer Be an "Author" or an "Inventor"?*, 51 J. PAT. OFF. SOC'Y 378, 379 (1969) ("[I]t is clear from the absence of any further qualifying statements that the Congress, in considering the statute in 1952, simply overlooked the possibility that a machine could ever become an inventor.").

84. Song, *supra* note 8.

85. Quach, *supra* note 36.

86. *See* Horton & Kim, *supra* note 9.

87. *See* Robinson & Smith, *supra* note 3, at 356, 357 ("Given the importance of these technologies to the future, the law must protect virtual inventions, clarify patent eligibility for software, and recognize AI's increasing role in inventing.").

88. Devon McGinnis, *What Is the Fourth Industrial Revolution?*, 360 BLOG (Feb. 2, 2023), <https://www.salesforce.com/blog/what-is-the-fourth-industrial-revolution-4ir> [<https://perma.cc/AAJ4-RFVM>] (defining the Fourth Industrial Revolution as "a fusion of advances in artificial intelligence (AI), robotics, the Internet of Things (IoT), Web3, blockchain, 3D printing, genetic engineering, quantum computing, and other technologies"). For more information about the high-paced growth of A.I., *see Global Artificial Intelligence Market 2017-2025 - Growth Trends, Key Players, Competitive Strategies and Forecasts Report – Research and Markets*, BUS. WIRE (Nov. 30, 2017, 6:58 AM), <https://www.businesswire.com/news/home/20171130005513/en/Global-Artificial-Intelligence-Market-2017-2025—Growth> [<https://perma.cc/KA4Y-8W9K>] (explaining that A.I. is expected to achieve a compound annual growth rate of fifty-two percent by 2025 and is already used by well-established international companies).

89. *See* Russ Pearlman, *Recognizing Artificial Intelligence (AI) as Authors and Inventors Under U.S. Intellectual Property Law*, RICH. J.L. & TECH., 2018, at i, 25, 37; *see also* Robert A. McFarlane & Rosanna W. Gan, *Circuit Decision on AI Complicates Inventor Strategies*, BLOOMBERG L. (Sept. 14, 2022, 4:01 AM), <https://news.bloomberglaw.com/in-house-counsel/circuit-decision-on-ai-complicates-inventor-strategies> [<https://perma.cc/83TQ-JYQ4>] (discussing potential implications of DABUS not receiving intellectual property rights and why these may grow increasingly important when it comes to future innovation).

back A.I. development and, as a result, hold back important and valuable inventions to society.<sup>90</sup>

This Part discusses the current problem presented for A.I.-generated works and the inability for that work to receive intellectual property rights.<sup>91</sup> Subpart A looks closely at a recent example of an A.I. developer's attempt to obtain intellectual property rights after naming the A.I. system as the author and inventor on the applications.<sup>92</sup> Subpart A shows how each attempt was met with a refusal and explains some of the reasoning provided in the response from the intellectual property offices and the courts.<sup>93</sup> Subpart B discusses the potential impact this refusal will have on innovation, including the possibility of an international impact.<sup>94</sup> Subpart C describes the current options that exist for A.I. creations and how these options ultimately do not best solve the problem.<sup>95</sup>

### A. The Uphill Battle for DABUS

A recent example, and the ignition for much of the conversation about A.I. and intellectual property, is an A.I. system called DABUS, which stands for “Device for the Autonomous Bootstrapping of Unified Sentience.”<sup>96</sup> DABUS is an A.I. system that generates work autonomously.<sup>97</sup> DABUS does more than simply associate patterns to create possible solutions with an algorithm.<sup>98</sup> Similar to the human brain, DABUS can generate novel patterns of information and can adapt to new scenarios without additional human input.<sup>99</sup> Further, DABUS self-assembles its software; it is not written by human beings.<sup>100</sup> The

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90. Tom Dines, *A Patent Predicament: Who Owns an AI-Generated Invention?*, FIN. TIMES (Oct. 6, 2019), <https://www.ft.com/content/84677ec8-be73-11e9-9381-78bab8a70848> [<https://perma.cc/4U7Z-NXWK>] (discussing the argument that without recognizing A.I. as an inventor, we discourage production of “socially valuable inventions”); see Jones, *The Question Mark Over AI and Intellectual Property*, *supra* note 46.

91. See *infra* Part III.

92. See *infra* Part III.A.

93. See *infra* Part III.A.

94. See *infra* Part III.B.

95. See *infra* Part III.C.

96. Quach, *supra* note 36. This name is shorter for “Electro-optical device and method for identifying and inducing topological states formed among interconnecting neural modules.” Thaler, LINKEDIN, *supra* note 43.

97. Karpinia, *supra* note 10.

98. *IEI's Patented Creativity Machine® Paradigm*, IMAGINATION ENGINES INC., <https://imagination-engines.com/cm.html> [<https://perma.cc/TG3X-BA9Y>] (last visited Dec. 2, 2023) (“This new AI paradigm is vastly more powerful than generic algorithms . . .”).

99. *Id.* (“Creativity Machines represent a new kind of neural network paradigm that can generate rather than just associate patterns.”).

100. *Id.* (“In other words, generic algorithms must be written by human programmers, whereas Creativity Machines build themselves!”).

developer of DABUS, Stephen Thaler, named DABUS as the applicant on both the patent and copyright applications filed for works conceived and created independently by DABUS, only to receive denials.<sup>101</sup>

### 1. Copyright Refusal

Throughout the last few years, DABUS “has tried its ‘hand’ at art.”<sup>102</sup> The A.I. system generates original artwork based on machine learning from thousands of photographs.<sup>103</sup> Thaler filed a copyright application for one work titled “A Recent Entrance to Paradise” on behalf of DABUS and listed “Creativity Machine” as the author and his own name as the claimant.<sup>104</sup>

The Copyright Office refused the application and the request for reconsideration because the work “lacks the human authorship necessary to support a copyright claim.”<sup>105</sup> Thaler appealed and the first request for reconsideration was denied.<sup>106</sup>

Thaler appealed again with a second request for reconsideration arguing that the human authorship requirement is “unconstitutional and unsupported by either statute or case law.”<sup>107</sup> He asserted that “there is no binding authority that prohibits copyright for [computer-generated works].”<sup>108</sup> Thaler’s argument was grounded in public policy, urging that the Copyright Office should register A.I.-generated work because doing so would “further the underlying goals of copyright law, including the constitutional rationale for copyright protection.”<sup>109</sup>

The Copyright Office responded with another refusal and again grounded its decision in the history of copyright law.<sup>110</sup> Even though the

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101. Quach, *supra* note 36.

102. Luke Conrad, *AI Should Be Recognised as “Inventor” of New Container Product*, *Say Academics*, TBTECH (Aug. 19, 2019), <https://tbtech.co/news/ai-recognised-inventor-new-container-product-academics> [<https://perma.cc/V3B9-TZVP>] (showing images of four pieces of artwork created by DABUS).

103. Joel Feldman, *The Art of Artificial Intelligence: A Recent Copyright Law Development*, REUTERS (Apr. 22, 2022, 10:59 AM), <https://www.reuters.com/legal/legalindustry/art-artificial-intelligence-recent-copyright-law-development-2022-04-22> [<https://perma.cc/8PA8-U4C6>] (explaining the method of machine learning used to generate original artwork).

104. *Id.*

105. *Id.*; COMPENDIUM (THIRD) § 306.

106. Letter from Shira Perlmutter et al., U.S. Copyright Off. Rev. Bd., to Ryan Abbott, Brown, Neri, Smith & Khan, LLP (Feb. 14, 2022), <https://www.copyright.gov/rulings-filings/review-board/docs/a-recent-entrance-to-paradise.pdf> [<https://perma.cc/79JM-2W5N>].

107. *Id.*; Timothy J. Lockhart, *Copyright Office Denies Application for AI “AUTHOR,”* JD SUPRA (June 1, 2022), <https://www.jdsupra.com/legalnews/copyright-office-denies-application-for-7678617> [<https://perma.cc/6B44-JV96>].

108. Letter from Shira Perlmutter et al. to Ryan Abbott, *supra* note 106, at 2.

109. *Id.*

110. *See id.* at 7.

Copyright Office acknowledged that there is no previous ruling from any court in the United States that has considered A.I. authorship, it still decided that the human authorship requirement should rule.<sup>111</sup> The Copyright Office also acknowledged that A.I. is not specifically addressed anywhere in the Compendium.<sup>112</sup>

Thaler is currently in an ongoing legal battle with the Copyright Office and its director, Shira Perlmutter, in hopes that a court will eventually rule in favor of a copyright registration with DABUS named as the author (the one that created the material) and Thaler named as the owner (the one allowed to own and reproduce it).<sup>113</sup> Without any change in the language of the law or any other guidance from Congress about treatment of A.I. applications, it is likely that the courts will continue to rule according to the broad precedent of the human authorship requirement as applied to other non-human applicants and, therefore, against Thaler in his legal pursuit.<sup>114</sup> Despite the lack of any factually comparable precedent involving A.I., the DABUS-named application will likely remain precluded.<sup>115</sup>

## 2. Patent Refusal

In addition to artwork, DABUS is also capable of creating inventions.<sup>116</sup> One of the applications where DABUS is named as the inventor is a food and beverage container with “fractal designs that creates pits

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111. *Id.* at 5 (“While the Board is not aware of a United States court that has considered whether artificial intelligence can be the author for copyright purposes, the courts have been consistent in finding that non-human expression is ineligible for copyright protection.”).

112. *Id.* at 6 (“Although no *Compendium* section explicitly addresses artificial intelligence, the Board concludes that Office policy and practice makes human authorship a prerequisite for copyright protection.”).

113. See Katyanna Quach, *US Copyright Office Sued for Denying AI Model Authorship of Digital Image*, REGISTER (June 7, 2022), [https://www.theregister.com/2022/06/07/thaler\\_ai\\_copyright](https://www.theregister.com/2022/06/07/thaler_ai_copyright) [<https://perma.cc/GXQ2-UNE9>]. The most recent ruling came from Judge Howell of the United States District Court for the District of Columbia. Eileen Kinsella, *A Court Shot Down a Computer Scientist’s Latest Attempt to Copyright an A.I.-Created Artwork in a Case That Has Big Implications for A.I. Artists*, ARTNET (Aug. 21, 2023), <https://news.artnet.com/art-world/court-shot-down-ai-art-copyright-again-2352452> [<https://perma.cc/L2YD-PDGZ>]. Judge Howell granted summary judgment, agreeing with the Copyright Office’s motion. *Id.* Although Judge Howell acknowledged that the world of copyright is “approaching new frontiers,” human authorship remains the “sine qua non” of copyrightability. *Id.* On October 11, 2023, Thaler alerted the District Court that he is appealing the decision. *Thaler Appeals D.C. Court Decision Denying Copyright for AI-Generated Art*, TFL (Oct. 12, 2023), <https://www.thefashionlaw.com/thaler-appeals-d-c-court-decision-denying-copyright-for-ai-generated-art> [<https://perma.cc/9HLM-NU87>].

114. See COMPENDIUM (THIRD) § 306.

115. See *id.*

116. See Karpinia, *supra* note 10.

and bulges from its sides.”<sup>117</sup> Another DABUS invention is a flashing device for attracting attention which could be helpful in search and rescue operations.<sup>118</sup>

The Patent and Trademark Office denied the application because DABUS is not a human inventor.<sup>119</sup> It is important to point out that the denial did not say anything about the inventions failing to meet any of the criteria of an ordinarily patentable subject matter; the sole issue was that DABUS, a non-human, was named as the inventor.<sup>120</sup> After failing to convince the Patent and Trademark Office otherwise, Thaler appealed to the United States District Court for the Eastern District of Virginia.<sup>121</sup> Thaler’s argument in this appeal was that an A.I.-generated patent application that meets inventorship criteria should list A.I. as the inventor, since after all it is the true inventor.<sup>122</sup>

History suggests that the likely motivation for the language in the Patent Act comes from Congress’s concern for original inventors losing rights in their inventions.<sup>123</sup> At the time of passage, Congress was concerned that legal entities would assert ownership rights over the true, individual inventors.<sup>124</sup> Ironically, in following a strict, contextual

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117. Conrad, *supra* note 102; Hamblen, *supra* note 18; see Jones, *Artificial Intelligence Can Now Be Recognised as an Inventor*, *supra* note 5 (showing a diagram with the image of the fractal design created by DABUS).

118. See Hamblen, *supra* note 18; Jones, *Artificial Intelligence Can Now Be Recognised as an Inventor*, *supra* note 5 (showing a diagram of the Attracting Enhanced Attention invention by DABUS).

119. Elura Nanos, *Federal Appellate Court Rules AI Systems Cannot Be ‘Inventors’ Because They Are Not Human*, L. & CRIME (Aug. 8, 2022, 12:22 PM), <https://lawandcrime.com/federal-court/federal-appellate-court-rules-ai-systems-cannot-be-inventors-because-they-are-not-human> [<https://perma.cc/7Y7Z-GT9J>].

120. Schwartz & Rogers, *supra* note 57, at 532-33 (“In responding to Thaler’s neural flame application, the USPTO gave no hint that the invention failed to satisfy the standard patentability criteria . . . . The problem was in the paperwork.”). Further, the Court does not claim that the invention is a wholly abstract algorithm which has presented a roadblock for A.I. in the past. See *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589-90, 596 (2013) (explaining that “[l]aws of nature, natural phenomena, and abstract ideas are not patentable”); see also *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 212, 220-21, 226-27 (2014) (holding that “merely requir[ing] generic computer implementation fails to transform that abstract idea into a patent-eligible invention”). The difference here is that the DABUS inventions are not wholly abstract algorithms; they are designs produced entirely as a result of machine learning. See *supra* Part.II.B.

121. Nanos, *supra* note 119; Grant, *supra* note 19, at 20.

122. Grant, *supra* note 19, at 20.

123. See Abbott, *supra* note 45, at 1096-97.

124. See *id.* (noting that the individual requirement was likely included to give original inventors rights to their discoveries rather than other entities that attempted to assert ownership where ownership was disputed); *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 60-61 (1884) (“In my opinion, ‘author’ involves originating, making, producing, as the inventive or master mind . . . .”) (quoting *Nottage v. Jackson* [1883] QB 627 at 635 (Eng.)). The significance of this early ruling regarding authorship is that it demonstrates the intent for the author to be the one that generated or formulated the original idea. See Abbott, *supra* note 45, at 1096-97. Applying this to



interpretation of what can be an “inventor,” A.I. systems, the original inventors, are now deprived of the rights that Congress sought to protect.<sup>125</sup> Following this logic, a developer of an A.I. system is not the first and true inventor of a subsequent invention that comes from the independent conception of the A.I. system, but in an effort to receive intellectual property rights, some developers are naming themselves as inventors on patent applications anyway.<sup>126</sup> This means that the Patent and Trademark Office has already granted patents, albeit unknowingly, for a non-human invention.<sup>127</sup> This is a harmful loophole because it takes away from the original intent of the Patent Act.<sup>128</sup>

Thaler expresses this originality concern in his appeal.<sup>129</sup> His argument is that failure to recognize A.I. as the inventor will only encourage other developers to claim inventorship in A.I.-created works even though they did not function as the inventors.<sup>130</sup> This takes away from the importance of the Patent Act’s original inventor requirement and sends a message to the public that the intellectual property offices will reward false claims of inventorship.<sup>131</sup>

After failing to persuade the United States District Court, Thaler appealed to the Federal Circuit Court.<sup>132</sup> A three-judge panel for the Federal Circuit again relied on the language of the Patent Act and also refused to recognize A.I., a non-human, as an inventor.<sup>133</sup> The court specifically focused on the definition of the word “individual” and how this

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modern technology would mean that the autonomous conceptualization of A.I. creations would allow it to be considered the author. *See id.*

125. Schwartz & Rogers, *supra* note 57, at 539 (“Consequently, under the existing Patent Act and in light of the interpretation it has been given . . . DABUS cannot be considered an inventor . . . , notwithstanding that DABUS might well be the creator . . .”).

126. *See* Abbott, *supra* note 45, at 1087-88. One example of this behavior is the patent granted to Dr. John Koza titled “Apparatus for Improved General-Purpose PID and non-PID Controllers.” *Id.*; U.S. Patent No. 6,847,851 (filed July 12, 2002). The patent listed only Dr. Koza and two other human inventors, who all took an oath declaring they disclosed all information regarding identity of inventors despite no mention of A.I. involvement. *See* ‘851 Patent; Abbott, *supra* note 45, at 1088 n.67. The patent application never mentioned A.I. involvement even though A.I. was the original inventor, generating the patentable invention without any human intervention. *See* ‘851 Patent; Abbott, *supra* note 45, at 1088 n.68 (citing an interview in which Dr. Koza shared that legal counsel advised him to use his own name).

127. *See* Abbott, *supra* note 45, at 1085, 1087-88.

128. *See* Jones, *The Question Mark Over AI and Intellectual Property*, *supra* note 46 (discussing how the current “workaround” is the nondisclosure of A.I.’s role in creating valuable output).

129. Grant, *supra* note 19, at 20.

130. *Id.*

131. *See* Bd. of Trs. of the Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc., 563 U.S. 776, 780, 785-86 (2011) (holding that a researcher who invents a patent at a federally funded lab is still the one who owns the patent).

132. Nanos, *supra* note 119.

133. *See* Thaler v. Vidal, 43 F.4th 1207, 1213 (Fed. Cir. 2022).

term is used throughout everyday life as well as the surrounding context given to the word in the Patent Act.<sup>134</sup> The opinion of the court further states that if Congress intended to include non-humans in the meaning of individual, then it would have done so within the text.<sup>135</sup> The court essentially begins and ends its discussion with the word “individual.”<sup>136</sup> Despite this being a case of first impression, the court does not entertain any discussion on the astounding ability of A.I. to autonomously conceive ideas and create otherwise patentable works.<sup>137</sup>

### *B. Inhibiting Innovation and the International Implications*

A leading reason for A.I.-generated works to receive intellectual property rights is that it can result in a world of increased innovation.<sup>138</sup> A.I. is currently pioneering innovation, and it has the potential to produce creations that will drastically advance the future.<sup>139</sup> A.I. can retain information and propose solutions in ways that humans simply cannot.<sup>140</sup> Such problem-solving can progress society in unimaginable ways.<sup>141</sup> A.I.

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134. *Id.* at 1211.

135. *Id.*

136. *Id.* at 1213 (asserting that this case “begins and ends with the plain meaning of the text” and because the language of the word “individual” is unambiguous, the inquiry ends there). Judge Stark also begins the opinion by stating:

At first, it might seem that resolving this issue would involve an abstract inquiry into the nature of invention or the rights, if any, of AI systems. In fact, however, we do not need to ponder these metaphysical matters. Instead, our task begins – and ends – with consideration of the applicable definition in the relevant statute.

*Id.* at 1209.

137. See Blake Brittain, *Scientist Renews Bid to Name Artificial Intelligence as U.S. Patent Holder*, REUTERS (Sept. 19, 2022, 1:33 PM), <https://www.reuters.com/legal/litigation/scientist-renews-bid-name-artificial-intelligence-us-patent-holder-2022-09-19> [<https://perma.cc/WG2W-975H>] (quoting Thaler’s statement that, “At minimum, the Panel Opinion should have wrestled with the ambiguity created by technological evolution, and the results that flow from prohibiting patents on AI-generated inventions . . .”).

138. See Pearlman, *supra* note 89, at 24.

AI serves the interest of the public, just as United States IP law was created to serve the interest of the public. This has been emphasized time and again by the Supreme Court: while the system provides for exclusive rights for authors and inventors, “the[ir] reward . . . is wholly secondary” compared to society . . . . While some may feel uncomfortable with incentivizing AI systems that can generate more works than a human, the Supreme Court has rejected the argument that protections are a reward for the “sweat of the brow” in producing works. Instead, our laws recognize contributions driven by originality and creativity . . . .

*Id.*

139. See Hamblen, *supra* note 18.

140. See Barry He, *Artificial Intelligence Still Fighting for Inventor’s Rights*, CHINA DAILY GLOBAL (Oct. 11, 2021), <https://www.chinadaily.com.cn/a/202110/11/WS61639519a310cdd39bc6e049.html> [<https://perma.cc/2HX6-RXWQ>].

141. See *id.*

has the potential to cure cancer and reverse climate change.<sup>142</sup> Shutting out A.I. from the law poses the risk of missing out on such profound development.<sup>143</sup>

Understandably, the vast potential of A.I. and its future capabilities can seem frightening.<sup>144</sup> There may be a fear that society's dependency on A.I. will become so robust that humans will become inferior.<sup>145</sup> However, A.I. innovation will continue to progress in today's technology-driven world regardless of whether society agrees about A.I. receiving intellectual property rights.<sup>146</sup> If A.I. will not slow down for the law to catch up, a world of unregulated A.I. seems to be the real thing to fear.<sup>147</sup> A new office would provide regulations that allow for human and A.I. coexistence to proceed fairly and beneficially within very specific and safe parameters, rather than unregulated and unprotected as it currently stands.<sup>148</sup> A.I. may have the key to so many extremely beneficial inventions, and there needs to be an adjustment to the current system to protect them.<sup>149</sup>

There may also be international implications from the United States' decision to deny A.I. intellectual property rights to its autonomous works.<sup>150</sup> Other countries are currently progressing ahead of the United States by addressing and adapting the law around this new issue.<sup>151</sup> South Africa was the first country to grant a patent to DABUS as

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142. See Hamblen, *supra* note 18 (“Abbott and his team believe that powerful AI systems could eventually find cures for cancer or find workable solutions for reversing climate change.”).

143. He, *supra* note 140 (“The risk of missing out on vital innovations for society is a substantial one.”).

144. See Pearlman, *supra* note 89, at 29 (“Some critics appear to be adamantly opposed to the idea of AI ownership of IP. . . . [But this] does little to recognize the creative contribution of AI systems and merely attempts to frighten any suggestion away with doomsday like predictions.”).

145. See BARRAT, *supra* note 37, at 3-5 (discussing plausibility of losing control of our future to machines as they develop to unpredicted, powerful levels that are incompatible with our survival). “We get more dependent every day.” *Id.* at 3.

146. See Briana Hopes, Comment, *Rights for Robots? U.S. Courts and Patent Offices Must Consider Recognizing Artificial Intelligence Systems as Patent Inventors*, 23 TUL. J. TECH. & INTELL. PROP. 119, 134 (2021) (“Although the DABUS team is the first to submit patent applications as an AI inventor, they will surely not be the last.”).

147. *Id.* (discussing the argument that intellectual property protection for A.I. is a matter of protecting “moral rights of traditional human inventors and the integrity of the patent system”) (quoting Ryan Abbott, *The Artificial Inventor Project*, WIPO MAG. (Dec. 2019), [https://www.wipo.int/wipo\\_magazine/en/2019/06/article\\_0002.html](https://www.wipo.int/wipo_magazine/en/2019/06/article_0002.html) [https://perma.cc/6J7E-Y5SD]).

148. See *infra* Part IV.B.2.

149. Dines, *supra* note 90.

150. See Grant, *supra* note 19, at 20 (“Around the world, other countries are debating the copyrightability of AI works.”).

151. Paul Sawers, *Chinese Court Rules AI-Written Article Is Protected by Copyright*, VENTUREBEAT (Jan. 10, 2020, 1:54 PM), <https://venturebeat.com/ai/chinese-court-rules-ai-written>

the inventor.<sup>152</sup> Many critics are pointing the finger at South Africa's patent office, the Companies and Intellectual Property Commission, saying this was an incorrect decision resulting from an oversight of the commission and that if South Africa had a different examination system in place, then the application would have been rejected.<sup>153</sup> South Africa has not yet explained its decision to accept the A.I.-named application, but recent policy changes in South Africa imply that this might not have been a mistake.<sup>154</sup> South Africa is looking to increase innovation as a way to improve and help solve socioeconomic issues facing the country.<sup>155</sup> Granting intellectual property rights to A.I. creations incentivizes developers to relocate to the country where they benefit most, helping boost innovation and thus contribute to a growing economy elsewhere.<sup>156</sup>

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article-is-protected-by-copyright [<https://perma.cc/BK5C-FEHU>] (“[A]t least one court now agrees that creative output with limited direct human input is protected by copyright law.”).

152. See Grant, *supra* note 19, at 20.

153. Meshandren Naidoo, *In a World First, South Africa Grants Patent to an Artificial Intelligence System*, CONVERSATION (Aug. 23, 2021, 6:40 AM), <https://theconversation.com/in-a-world-first-south-africa-grants-patent-to-an-artificial-intelligence-system-165623> [<https://perma.cc/5RSX-A3BD>].

154. See *id.* Prior to the DABUS decision, South Africa instituted relevant intellectual property policy decisions showing willingness to expand policies to bring in more innovation. *Id.* The Intellectual Property Policy of the Republic of South Africa Phase I of 2018 marked the beginning of the innovation movement, calling for a greater emphasis on innovation. See INT'L TRADE & ECON. DEV., INTELLECTUAL PROPERTY POLICY OF THE REPUBLIC OF SOUTH AFRICA PHASE I 3, 9 (2018) (S. Afr.), [https://www.gov.za/sites/default/files/gcis\\_document/201808/ippolicy2018-phasei.pdf](https://www.gov.za/sites/default/files/gcis_document/201808/ippolicy2018-phasei.pdf) [<https://perma.cc/UP6F-53WM>]. In March 2019, the Department of Science and Technology's White Paper on Science, Technology, and Innovation mentioned how South Africa can benefit from the emerging, modern technology market through specific activities such as hosting research and development of large companies to create jobs and bring in foreign investment. See DEP'T OF SCI. & TECH., WHITE PAPER ON SCIENCE, TECHNOLOGY AND INNOVATION 6 (2019) (S. Afr.), [https://www.dst.gov.za/images/2019/White\\_paper\\_web\\_copyv1.pdf](https://www.dst.gov.za/images/2019/White_paper_web_copyv1.pdf) [<https://perma.cc/U4Q9-JSGE>]. In October 2020, the Presidential Commission on the Fourth Industrial Revolution discussed how to adapt to technological growth and proposed establishing a national institute for A.I. See Summary Report & Recommendations Presented by the Commission on the Fourth Industrial Revolution, GN 591 of GG 43834 (23 Oct. 2020) at 173, 202 (S. Afr.), [https://www.gov.za/sites/default/files/gcis\\_document/202010/43834gen591.pdf](https://www.gov.za/sites/default/files/gcis_document/202010/43834gen591.pdf) [<https://perma.cc/4ZKG-29A3>]. Further, in April 2021, the South African government proposed a draft of the National Policy on Data and Cloud, again expressing South Africa's desire to take advantage of the opportunity of rapid technological growth. See Draft National Policy on Data and Cloud, GN 306 of GG 44389 (1 Apr. 2021) at 19-20 (S. Afr.), [https://www.gov.za/sites/default/files/gcis\\_document/202104/44389gon206.pdf](https://www.gov.za/sites/default/files/gcis_document/202104/44389gon206.pdf) [<https://perma.cc/9EPB-HC8U>].

155. See Naidoo, *supra* note 153.

156. See *id.* This concept is known as competition to attract. See *U.S. Tech Regulation & Geostategic Competition: Key Insights and Takeaways*, FP ANALYTICS (June 23, 2022), <https://keepingustechcompetitive.com> [<https://perma.cc/WD82-C9UU>]. Countries leading in technology compete to attract the most advantageous technology to their countries to obtain leadership. *Id.*

Further, China now allows for A.I.-generated news articles to qualify for copyright protection enforced by the publishing company that owns the A.I. machine.<sup>157</sup> A court in Shenzhen, China, found that an A.I.-written article was an original, creative output that met the legal requirements for copyright protection.<sup>158</sup> The issue with other nations developing in this area ahead of the United States is that it may push innovation out of the United States' borders and into the land of different nations, ultimately causing the United States to miss out on the vast innovative benefits provided.<sup>159</sup>

### *C. All Current Options to Protect A.I. Creations Lead to a Dead End*

If the law in the United States does not adapt as A.I. continues to progress, A.I. developers will pursue other options to receive protection for their inventions or these inventions will otherwise remain unprotected in the public domain, and all of these options have consequences.<sup>160</sup> One option already mentioned above would be for developers to uproot the A.I. systems from the United States and relocate to a different country that is willing to grant intellectual property rights to A.I.<sup>161</sup> The United States prides itself on valuing innovation and creativity, and it would be harmful for the country to lose out on these potential benefits simply because it refuses to adapt its laws.<sup>162</sup> Another suggested option for

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157. Grant, *supra* note 19, at 20.

158. Sawers, *supra* note 151.

159. See Jena McGregor, *How to Go After Big, Bold Goals*, WASH. POST (Feb. 19, 2015, 12:23 PM), <https://www.washingtonpost.com/news/on-leadership/wp/2015/02/19/the-xprize-founders-how-to-guide-for-going-after-big-bold-goals> [<https://perma.cc/VEV2-SBLG>] (“If the government regulates against use of drones or stem cells or artificial intelligence, all that means is that the work and the research leave the borders of that country and go someplace else.”); see also Hopes, *supra* note 146, at 134 (“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.”); David Gilson, *Are South Africa’s IP Laws Keeping Up With Technology Innovation?*, LEXOLOGY (Jan. 3, 2022), <https://www.lexology.com/commentary/intellectual-property/south-africa/spoor-fisher/are-south-africas-ip-laws-keeping-up-with-technology-innovation> [<https://perma.cc/JF2D-22PW>] (“[South Africa’s] patent award should serve as a wake-up call to governments around the world to accelerate the process of modernising and harmonising IP laws, regulations and practices in general.”).

160. See McFarlane & Gan, *supra* note 89:

Unless the Supreme Court or Congress step in to allow an AI to be designated as an inventor or the natural person controlling, programming, or providing input to the AI to be the inventor of any AI “conceived” invention, such strategies may become increasingly important as the capabilities of AI grow.

*Id.*

161. See *supra* Part III.B.

162. See U.S. INTEL. PROP. ENFT COORDINATOR, ANNUAL INTELLECTUAL PROPERTY REPORT TO CONGRESS 3-5 (Feb. 2019). In its 2019 annual report, the Intellectual Property En-

A.I.-generated work is for the developer to seek protection under a trade secret.<sup>163</sup> However, this is not a viable solution for A.I.-generated works that can easily be reverse-engineered because trade secrets are only protected until they are discovered.<sup>164</sup>

The final resort is for A.I. creations to remain in the public domain.<sup>165</sup> This is also problematic because anyone can copy the work or replicate the invention, taking credit away from those who put valuable time, money, and effort into the original elaborate A.I. system.<sup>166</sup> The fraudulent claims of developers on the A.I.-generated patent applications show that this option is already unfavorable; developers would rather fraudulently exclude the A.I. system's contribution than allow the work to go into the public domain without any protection.<sup>167</sup> As A.I. continues to progress, it will be more beneficial to society as a whole to develop an intellectual property system with regulations now.<sup>168</sup> These other options do not suffice.<sup>169</sup>

#### IV. THE A.I. INTELLECTUAL PROPERTY OFFICE OF THE FUTURE

Thus far, this Note has explored *why* this issue is so important for the future.<sup>170</sup> Now, this Part looks at *how* to best solve it.<sup>171</sup> This Part

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forcement Coordinator emphasized that the administration would “work to ensure that our intellectual property laws are kept up to date, and that they promote American innovation and creativity” because “[i]ntellectual property is integral to our nation’s economic competitiveness and the growth of our innovative economy.” *Id.* at 4. The report went on to voice that in order to succeed in the twenty-first century, “America must lead in research, technology, and innovation.” *Id.* at 11.

163. See McFarlane & Gan, *supra* note 89.

164. *Id.* (“For inventions that can be easily copied . . . patent protection may remain the only viable form of IP protection.”). Protection under a trade secret is said to be weaker than patent protection. *Kewanee Oil Co. v. Bicon Corp.*, 416 U.S. 470, 489-90 (1974) (“Trade secret law provides far weaker protection in many respects than the patent law.”). Using a trade secret requires great risk because of the chance that a competitor will obtain the secret through theft or a breach of a confidential relationship, and such an act would likely be difficult to prove. *Id.* at 490.

165. See Long, *supra* note 12 (“[S]hould AI-generated inventions fall within the public domain or should the law give indications of the way in which the human inventor should be determined?”).

166. See Guadamuz, *supra* note 46.

Although copyright laws have been moving away from originality standards that reward skill, labour and effort, perhaps we can establish an exception to that trend when it comes to the fruits of sophisticated artificial intelligence. The alternative seems contrary to the justifications for protecting creative works in the first place.

*Id.*

167. See He, *supra* note 140 (“An AI program cannot stand up for its own intellectual property rights, and so little would stop a human from fraudulently claiming an invention they did not create.”).

168. See *infra* Part IV.B.2.

169. See *supra* Part III.C.

170. See *supra* Part III.

171. See *infra* Part IV.

respectfully suggests that changes are necessary to achieve a better, more innovative future.<sup>172</sup> This Part proposes a solution that would allow DABUS and all other A.I. systems to receive intellectual property rights for their autonomous works.<sup>173</sup> The proposed solution has two steps.<sup>174</sup> The first step requires Congress to recognize A.I. as an author and inventor.<sup>175</sup> The second step requires Congress to develop a new intellectual property office with specific regulations focused solely on A.I. applications for copyright and patents.<sup>176</sup>

#### *A. Expansion of Author and Inventor*

The first step is for Congress to recognize its power under the Intellectual Property Clause of the Constitution and amend or clarify the language of the Copyright and Patent Acts to include A.I. in the definitions of author and inventor.<sup>177</sup> The recommendation in this Note is only for A.I., and not for any other non-human entity, to be added to the definition of author and inventor.<sup>178</sup> The reason for this is that A.I. is more similar to a corporation than it is to an animal, plant, or any other prohibited non-human applicant mentioned in the statutes or case law above.<sup>179</sup> The key distinction is that A.I. and corporations are both formed and owned by humans.<sup>180</sup> For further clarification, the recommendation in this Note is also only for A.I. to be considered as an author and inventor for the purpose of receiving intellectual property rights in a copyright or patent and not for any other legal rights.<sup>181</sup> The expanded definition of author and inventor would grant A.I. rights that are similar to the scope of a corporation.<sup>182</sup> This definition would specify that A.I. would have rights similar to those of a natural person for the specific purpose of obtaining intellectual property rights and it would simultaneously be restricted from obtaining other rights enjoyed by natural persons, like the right to vote.<sup>183</sup>

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172. See *infra* Part IV.

173. See *infra* Part IV.

174. See *infra* Part IV.A–B.

175. See *infra* Part IV.A.

176. See *infra* Part IV.B.

177. See *infra* Part IV.A.

178. See *infra* Part IV.A.

179. See Hopes, *supra* note 146, at 132–33; see also *supra* Part II.B.3.

180. Hopes, *supra* note 146, at 133 (“Both corporations and artificial intelligence systems are formed and owned by humans.”).

181. See *infra* Part IV.A.

182. See *infra* Part IV.A.

183. See Nina Totenberg, *When Did Companies Become People? Excavating the Legal Evolution*, NPR (July 28, 2014, 4:57 AM), <https://www.npr.org/2014/07/28/335288388/when-did-companies-become-people-excavating-the-legal-evolution> [https://perma.cc/8SHW-K3GK] (dis-

To achieve this, Congress should return its attention to the concept of originality, which requires that the “person” themselves creates what they seek to patent or copyright.<sup>184</sup> In *Burrow-Giles Lithographic Co. v. Sarony*, the Supreme Court defined “author” as “he to whom anything owes its origin; originator; maker; one who completes a work of science or literature.”<sup>185</sup> Similarly, in *Board of Trustees of the Leland Stanford Junior University v. Roche Molecular Systems, Inc.*, the Supreme Court stated that its precedent confirmed the “general rule that rights in an invention belong to the inventor.”<sup>186</sup> These early interpretations of the Court emphasize the original intent of the statutory language: for intellectual property rights to go directly to the one (person or thing) that produced the original.<sup>187</sup>

With respect to A.I.-generated creations, the originator is the A.I. system.<sup>188</sup> Some might argue that the developer of the A.I. should be named the originator, but this argument does not account for the modern capabilities of A.I.<sup>189</sup> It assumes that developers insert precise instructions into the A.I. system to create a desired outcome, but that is not the case.<sup>190</sup> Most A.I. systems are taught through experiential learning in a

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cussing the Supreme Court ruling in *Citizens United v. FEC*, 558 U.S. 310 (2010), ultimately leaving corporations to be classified as people, but only for some purposes). For a brief overview on the history of corporate rights, see Sarah Pruitt, *How the 14th Amendment Made Corporations Into ‘People,’* HIST. (Oct. 15, 2018), <https://www.history.com/news/14th-amendment-corporate-personhood-made-corporations-into-people> [<https://perma.cc/74QQ-WKWM>].

184. Oskar Liivak, *The Forgotten Originality Requirement: A Constitutional Hurdle for Gene Patents*, 87 J. PAT. & TRADEMARK OFF. SOC’Y 261, 265 (2005) (“Originality requires that a person themselves creates what they seek to patent.”). The author goes on to discuss that the originality requirement in patent law, which requires that an applicant does not copy or take the subject matter or a patent from somewhere else, largely corresponds with the requirement of originality in copyright law, which essentially prohibits copying. *Id.* at 266.

185. *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 57-58 (1884); see *ArtI.S8.C8.3.1 Authorship, Writings, and Originality*, CONST. ANNOTATED, [https://constitution.congress.gov/browse/essay/artI-S8-C8-3-1/ALDE\\_00013063](https://constitution.congress.gov/browse/essay/artI-S8-C8-3-1/ALDE_00013063) [<https://perma.cc/X9CV-75D4>] (last visited Dec. 2, 2023).

186. *Bd. of Trs. of the Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc.*, 563 U.S. 776, 785 (2011). Some of the precedent cases the Court cited include: *Gayler v. Wilder*, 51 U.S. 477, 493 (1851) (“[T]he discoverer of a new and useful improvement is vested by law with an inchoate right to its exclusive use, which he may perfect and make absolute by proceeding in the manner which the law requires.”); *Solomons v. United States*, 137 U.S. 342, 346 (1890) (“[W]hatever invention [an inventor] may thus conceive and perfect is his individual property.”); *United States v. Dubilier Condenser Corp.*, 289 U.S. 178, 188 (1933) (stating that an inventor owns “the product of [his] original thought”). *Roche Molecular Sys., Inc.*, 563 U.S. at 785-86.

187. See *ArtI.S8.C8.3.1 Authorship, Writings, and Originality*, *supra* note 185.

188. See Jones, *Artificial Intelligence Can Now Be Recognised as an Inventor*, *supra* note 5.

189. See Pearlman, *supra* note 89, at 28 (discussing that the argument for naming a programmer of A.I. as the owner is based on a false assumption regarding A.I. coding and does not account for the power of modern neural networks).

190. Jason Tanz, *Soon We Won’t Program Computers. We’ll Train Them Like Dogs*, WIRED (May 17, 2016, 6:50 AM), <https://www.wired.com/2016/05/the-end-of-code>



similar manner to how children learn to read or speak a language, and certainly parents and teachers are not the ones who receive intellectual property rights on behalf of a child or student who applies these learned skills later in life.<sup>191</sup> The A.I. system is so advanced that it autonomously thinks and creates works of art and useful inventions.<sup>192</sup> However, the intellectual property offices and the courts have become fixated on a requirement of a human author or inventor based on surrounding contextual terms that imply natural personhood.<sup>193</sup> Essentially the current position is that since the language does not explicitly include A.I., then it is excluded.<sup>194</sup> Congress should return its attention to the importance of recognizing the first and true creator and amend the definition of author and inventor in the Copyright and Patent Acts to explicitly list A.I.<sup>195</sup>

When Congress decides to act, it must do so within the power of its constitutional purpose: to “promote the Progress of Science and useful Arts . . . .”<sup>196</sup> This requirement would be met because the potential future societal benefits from A.I. creations are immeasurable.<sup>197</sup> A.I. has the ability to contribute meaningful ideas and processes to this ever-evolving world.<sup>198</sup> Further, without amending the language, and maintaining that only humans can own the rights, Congress incentivizes

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[<https://perma.cc/HL8C-3894>] (explaining the experiential learning process for machine learning and how machines are coached by being shown thousands of images). “With machine learning, programmers don’t encode computers with instructions. They *train* them.” *Id.*

191. See Pearlman *supra* note 89, at 28 (comparing machine learning to human experiential learning, much like a child learning to read).

192. See *supra* Part II.A.

193. See, e.g., Thaler v. Vidal, 43 F.4th 1207, 1212 (Fed. Cir. 2022).

194. McFarlane & Gan, *supra* note 89 (“This holding, which effectively excludes AI systems from the category of ‘individuals’ eligible to be named as inventors, may complicate the intellectual property strategies of innovators who use advanced AI for research and development.”).

195. See Hopes, *supra* note 146, at 134 (“This country’s intellectual property law was founded on promoting creativity, encouraging ideas, and fostering innovation.”).

196. U.S. CONST. art. I, § 8, cl. 8. See *Graham v. John Deere Co.* 383 U.S. 1, 5-6 (1966).

The Congress . . . may not . . . enlarge the patent monopoly without regard to the innovation, advancement or social benefit gained thereby. . . . Innovation, advancement, and things which add to the sum of useful knowledge are inherent requisites in a patent system which by constitutional command must “promote the Progress of . . . useful Arts.”

This is the *standard* expressed in the Constitution and it may not be ignored.

*Id.* *Graham* is an influential case for the interpretation of the Intellectual Property Clause with patents. See Oliar, *supra* note 56, at 48. The equivalent case to *Graham* for copyright is *Eldred v. Ashcroft*, 537 U.S. 186 (2003). See Oliar, *supra* note 56, at 48 n.196.

197. See Mike Thomas & Jessica Powers, *The Future of AI: How Artificial Intelligence Will Change the World*, BUILT IN, <https://builtin.com/artificial-intelligence/artificial-intelligence-future> [<https://perma.cc/P7WU-HHPT>] (Mar. 3, 2023).

198. See Hopes, *supra* note 146, at 134-35 (“[Allowing] an innovative and constantly improving system like an AI machine the opportunity to contribute to our society will help maximize societal benefits.”).

humans to claim rights to inventions that they had no part in creating.<sup>199</sup> This is harmful for innovation and therefore contrary to promoting progress.<sup>200</sup> Granting intellectual property protection to A.I. can help deter such behavior and also help regulate a more honest application process.<sup>201</sup>

Additionally, Congress has not produced any legislation regarding A.I.-generated work, and none of the case law until the *Thaler* case directly answered the intellectual property rights question that A.I.-generated works pose.<sup>202</sup> Also, as this Note previously mentioned, Congress's power under the Intellectual Property Clause has historically been given great deference.<sup>203</sup> Congress previously used its broad power under the Intellectual Property Clause to expand the term "writings" to encompass photographs and again years later to include visual art.<sup>204</sup> Congress also amended the Copyright Act to extend the term of the limited time requirement to allow copyright protection for seventy years.<sup>205</sup> Congress even had the power to take works which were previously in the public domain out of the public domain and grant protection.<sup>206</sup>

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199. See He, *supra* note 140.

200. See *id.*

201. See *id.*

202. See Letter from Shira Perlmutter et al. to Ryan Abbott, *supra* note 106, at 3, 5. In its response, the Copyright Office Review Board acknowledged that Congress has not defined the phrase "original work of authorship" and that the phrase is "very broad," albeit being "not unlimited." *Id.* at 3.

203. See *Eldred v. Ashcroft*, 537 U.S. 186, 212-13 (2003); see also *Graham v. John Deere Co.*, 383 U.S. 1, 6 (1966); *Golan v. Holder*, 565 U.S. 302, 326 (2012) (declaring that copyright legislation is constitutional where "Congress rationally could have concluded" that it "promotes the diffusion of knowledge"); *United States v. Elcom Ltd.*, 203 F. Supp. 2d 1111, 1141-42 (N.D. Cal. 2002) (holding the Digital Millennium Copyright Act did not violate the Intellectual Property Clause because as long as the law is not "irreconcilably inconsistent with any provision of the Intellectual Property Clause," then Congress does not "exceed its constitutional authority").

204. See U.S. COPYRIGHT OFF., *The 18th Century*, COPYRIGHT.GOV, [https://www.copyright.gov/timeline/timeline\\_18th\\_century.html](https://www.copyright.gov/timeline/timeline_18th_century.html) [<https://perma.cc/3XDV-2JBA>] (last visited Dec. 2, 2023). In *Burrow-Giles Lithographic Co.*, the Supreme Court stated that "[t]he only reason" photographs were not listed was simply because they did not exist. *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 58 (1884). This ruling confirmed that Congress acted properly when it exercised its power and amended the Copyright Act to include photographs in 1865. See *The 18th Century*, *supra* note 204. Congress added visual art in 1870. *Id.*

205. Sonny Bono Copyright Term Extension Act, Pub. L. No. 105-298, § 102, 112 Stat. 2827, 2827 (1998); see *Eldred*, 537 U.S. at 204-06, 222 (holding that Congress's extension of the duration of existing copyrights is within Congress's authority under the Intellectual Property Clause and better aligns protection in the United States with that of foreign nations, such as those in the European Union).

206. *Golan*, 565 U.S. at 318 (holding that there is no barrier in the text of the Intellectual Property Clause to Congress extending copyright protection to works previously in the public domain). This case arose after Congress granted rights to previously unprotected works of Berne member countries after the United States joined the Berne Convention for the Protection of Literary and Artistic Works. *Id.* at 306-07. These works previously lacked protection in the United States and were

In the patent realm, the Supreme Court has previously noted that ruling out “unanticipated inventions” from receiving patent protection “conflict[s] with the core concept of the patent law . . . .”<sup>207</sup> The Court elaborated that “the inventions most benefiting mankind are those that ‘push back the frontiers of chemistry, physics, and the like,’” and that “Congress employed broad general language in drafting [the Patent Act] precisely because such inventions are often unforeseeable.”<sup>208</sup> The ability of A.I. to autonomously create works of art and invent helpful tools was likely unforeseeable to a majority of the world only a few years ago.<sup>209</sup>

The power to take action with A.I. intellectual property rights lies with Congress under the Intellectual Property Clause.<sup>210</sup> Based on Congress’s historical ability to adjust the interpretation of the terms in the Copyright and Patent Acts to remain up to date with the times, Congress should now be able to act in a similar manner to adjust the interpretation of author and inventor to include A.I.<sup>211</sup> Amending the statutes directly would clarify the new language, and it would eliminate the ambiguity among the intellectual property offices and the courts.<sup>212</sup> The Copyright Act does not explicitly define author, so the amendment here should add the definition of author or authorship and include A.I. on the new list.<sup>213</sup> The Patent Act’s definition of inventor should clarify that the term

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in the public domain because they were either not from a country of origin that the United States protected at the time of publication; were sound recordings fixed prior to 1972; or their author did not comply with statutory formalities, but Congress no longer requires those formalities as prerequisites to copyright protection. *Id.* at 307.

207. *Diamond v. Chakrabarty*, 447 U.S. 303, 316, 318 (1980) (ruling that genetically modified organisms could be patented).

208. *Id.* (citing *Great Atl. & Pac. Tea Co. v. Supermarket Equip. Corp.*, 340 U.S. 147, 154 (1950) (Douglas, J., concurring)).

209. *See The Exponential Growth of AI*, RESTORE SOLS., <https://restore.solutions/articles/the-exponential-growth-of-ai> [<https://perma.cc/AR23-JM6L>] (Oct. 1, 2023) (discussing the exponential growth of A.I.). “Over past decades, the computing power behind machines has doubled every two years.” *Id.*

210. *See* U.S. CONST. art. I, § 8, cl. 8.

211. *See supra* Part IV.A.

212. *See supra* Part III. Amending the Copyright and Patent Acts exclusively to include A.I. helps to control and keep A.I. rights narrow, and for the sole purpose of receiving copyright and patents. *See* 1 U.S.C. § 1 (listing definitions that the Supreme Court must use to determine “the meaning of any Act of Congress, unless the context indicates otherwise”). If Congress were to include A.I. within the broader definition of “person” under the Dictionary Act, this would grant several additional rights to A.I., which is not what this Note intends to propose. *See id.* (defining “person” and “whoever” to include “corporations, companies, associations, firms, partnerships, societies, and joint stock companies, as well as individuals”).

213. *See* 17 U.S.C. § 101. This new language could be modeled off the Compendium’s authorship requirements, with the elimination of the human authorship requirement. *See* COMPENDIUM (THIRD) §§ 301–316.

includes individuals and A.I. systems that “invented or discovered the subject matter of the invention.”<sup>214</sup>

### *B. Establishment of New Office*

After amending the statutory language, the next step for Congress is to again exercise its power under the Intellectual Property Clause to create a new intellectual property office solely dedicated to handling copyright and patent applications for which AI is the author, co-author, inventor, or co-inventor.<sup>215</sup> Section 1 looks at how Congress historically established the other intellectual property offices.<sup>216</sup> Section 2 then discusses how Congress can exercise its authority in a similar manner to create a new office for A.I. and explores the different reasons why a new office can provide the best solution.<sup>217</sup>

#### 1. Prior Office Establishment

Historically, Congress has passed several statutes that establish and organize the patent system.<sup>218</sup> The Patent and Trademark Office was established as an agency of the United States, within the Department of Commerce.<sup>219</sup> The Patent and Trademark Office is authorized to create regulations for the conduct of proceedings in the office, but these are all subject to the policy direction of the Secretary of Commerce and are required to be consistent with the law.<sup>220</sup> The Patent and Trademark Office operates pursuant to statutes passed by Congress and proceedings rules established by the Patent and Trademark Office as long as those are consistent with law.<sup>221</sup> Patent examiners within the office are responsible for reviewing applications and granting patents to those that successfully meet the statutory requirements.<sup>222</sup>

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214. See 35 U.S.C. § 100(f).

215. See *infra* Part IV.B.

216. See *infra* Part IV.B.1.

217. See *infra* Part IV.B.2.

218. U.S. PAT. & TRADEMARK OFF., *Introduction, in* MANUAL OF PATENT EXAMINING PROCEDURE (9th ed. 2023), <https://www.uspto.gov/web/offices/pac/mpep/mpep-0020-introduction.html> [<https://perma.cc/4RW8-49YG>] (exercising its authority under the Intellectual Property Clause and Commerce Clause).

219. *Id.* (citing 35 U.S.C. § 1).

220. See *id.*; see also *United States Patent and Trademark Office (USPTO)*, LEGAL INFO. INST. AT CORNELL L. SCH., [https://www.law.cornell.edu/wex/united\\_states\\_patent\\_and\\_trademark\\_office\\_\(uspto\)](https://www.law.cornell.edu/wex/united_states_patent_and_trademark_office_(uspto)) [<https://perma.cc/27BP-U8K4>] (last visited Dec. 2, 2023).

221. *United States Patent and Trademark Office (USPTO)*, *supra* note 220.

222. *Id.*

The Intellectual Property Clause of the Constitution also grants Congress the power to enact laws establishing a system of copyright.<sup>223</sup> The Copyright Office was established as an agency of Congress, existing as a separate department within the Library of Congress.<sup>224</sup> The Copyright Office is an office of record where copyright claims are registered and documents are recorded.<sup>225</sup> The Copyright Office is responsible for managing the copyright catalog where details of all registered copyrighted works are stored and searchable.<sup>226</sup>

## 2. A.I. Intellectual Property Office

Under the Intellectual Property Clause, Congress should establish a new office just as it exercised its powers to establish the other intellectual property offices in the United States.<sup>227</sup> The new office would operate as an extension of the two established offices and would only focus its time on works that are conceived or co-conceived autonomously by A.I.<sup>228</sup> The new office would essentially vet through the A.I. applications to ensure that the creation in the application meets the statutory requirements for a copyright or patent.<sup>229</sup> Subsequently, the new office would perform a thorough search on the catalog and registrar of the existing offices to prevent infringement on existing works.<sup>230</sup> The final step of the process would be for the office to grant or reject the intellectual property rights to the A.I. system, and, if accepted, assist in assigning the rights to the owner or developer.<sup>231</sup>

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223. U.S. COPYRIGHT OFF., *United States Copyright Office: A Brief Introduction and History*, COPYRIGHT.GOV [hereinafter U.S. COPYRIGHT OFF., *A Brief Introduction and History*], <https://perma.cc/64BB-FVV2> (last visited Dec. 2, 2023).

224. U.S. COPYRIGHT OFF., *Overview*, COPYRIGHT.GOV [hereinafter U.S. COPYRIGHT OFF., *Overview*], <https://www.copyright.gov/about> [<https://perma.cc/MVY2-GGWW>] (last visited Dec. 2, 2023) (“The Copyright Office acts as a conduit for the Library of Congress . . .”).

225. U.S. COPYRIGHT OFF., *A Brief Introduction and History*, *supra* note 223.

226. *United States Copyright Office*, LEGAL INFO. INST. AT CORNELL L. SCH., [https://www.law.cornell.edu/wex/united\\_states\\_copyright\\_office](https://www.law.cornell.edu/wex/united_states_copyright_office) [<https://perma.cc/2YP7-WPLF>] (last visited Dec. 2, 2023).

227. *See infra* Part IV.B.2.

228. *See infra* Part IV.B.2.

229. *See United States Patent and Trademark Office (USPTO)*, *supra* note 220; *see also United States Copyright Office*, *supra* note 226.

230. Ference Intellectual Property Lawyers, *How to Protect Your Intellectual Property and Avoid Inadvertent Infringement in Your New Business*, FERENCE, <https://ferencelaw.com/how-to-protect-your-intellectual-property-and-avoid-inadvertent-infringement-in-your-new-business> [<https://perma.cc/4BBS-K6CH>] (last visited Dec. 2, 2023) (stating the importance of researching and preventing infringement).

231. *See infra* Part IV.B.2.

A separate system of application will benefit A.I. innovation and humans.<sup>232</sup> A.I. can develop at a very fast rate, and upon the approval to receive intellectual property rights, there would likely be a spike in the number of applications for the intellectual property offices, which are already overwhelmed.<sup>233</sup> There is opposition to adding A.I. applications due to the fact that it may exacerbate the issue of the current long waiting period.<sup>234</sup> The United States Patent and Trademark Office can take anywhere from one to six years before ruling on a patent application.<sup>235</sup>

A new office would allow the current intellectual property offices to continue with normal daily activities, focusing on the important task of granting intellectual property rights to humans.<sup>236</sup> The benefit of A.I. applications going to a separate office is that human applications will not be overshadowed or pushed to the side upon increased filings.<sup>237</sup> The goal is to promote the coexistence of A.I. and human innovation, so to help prevent a backlog of applications in the current intellectual property offices, the new office would be dedicated to handling the influx of A.I. applications.<sup>238</sup>

While it is arguable that increasing funding for or hiring new examiners at the existing intellectual property offices could combat the increased applications from A.I., this does not provide the same benefit as

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232. See Alexandra George & Toby Walsh, *Artificial Intelligence Is Breaking Patent Law*, NATURE (May 24, 2022), <https://www.nature.com/articles/d41586-022-01391-x#ref-CR2> [<https://perma.cc/J2WJ-2KVS>].

233. See Dines, *supra* note 90 (showing data that the demand for intellectual property rights is currently growing faster than today's global economy, and much of that growth is coming from A.I.).

234. See Samuel Scholz, Note, *A Siri-ous Societal Issue: Should Autonomous Artificial Intelligence Receive Patent or Copyright Protection?*, CYBARIS, 2020, at 81, 130.

235. See Dennemeyer Group, *How Long Does It Take to Get a Patent, and How Can You Speed Up the Process?*, DENNEMEYER: IP GRP. (July 24, 2023), <https://www.dennemeyer.com/ip-blog/news/getting-a-patent-how-long-does-it-take-and-can-ai-speed-things-up> [<https://perma.cc/VD6W-NZVU>].

236. See U.S. COPYRIGHT OFF., *A Brief Introduction and History*, *supra* note 223; see also *United States Patent and Trademark Office (USPTO)*, *supra* note 220.

237. See George & Walsh, *supra* note 232 (“[O]ne fear is that AIs might soon be so prolific that their inventions could overwhelm the patent system with applications.”).

238. See IPO OF THE FUTURE THINK TANK, REPORT: THE INTELLECTUAL PROPERTY OFFICE (IPO) OF THE FUTURE § 2.1(viii) (Nov. 2020). This report by the IPO of the Future Think Tank, which was launched by the International Trademark Association in 2019, features the collective input of various international intellectual property leaders regarding questions surrounding A.I. See *id.* One of their concerns was that “[m]illions of machine-generated patents could clog the system, impacting genuine innovations as well as competitiveness.” *Id.* A new office can help eliminate the impact the high number of patents would have on human inventions. See *id.* (“[I]t is critical to ensure that the IP system and the IPO of the Future is well-equipped to support the emergence of transformative technologies.”).

a new office.<sup>239</sup> Even with more examiners it is likely that a majority of the applications stacked up to review each day would be A.I., simply because of its ability to develop faster than humans.<sup>240</sup> If A.I. applications consume a majority of the time of examiner review, that would be counterintuitive to the promotion of progress.<sup>241</sup> A new office would help manage and control the amount of innovative growth.<sup>242</sup>

There is also something beneficial about specialization, especially in an area that is so new and where there are still so many pending questions.<sup>243</sup> As examining attorneys become familiar with this new niche area of the law, they will begin to master it and thus become more efficient.<sup>244</sup> Granting A.I. intellectual property rights would likely require a new set of rules, regulations, and possibly requirements.<sup>245</sup> One example of a new requirement might be the term of years to protect an A.I.-generated work.<sup>246</sup> Considering the fast growth rate of A.I., the best solution could be that the term of years is shorter.<sup>247</sup> A designated office staffed with examiners trained in this hybrid area of A.I. intellectual property law would understand and confidently apply the new

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239. See *infra* Part IV.B.2.

240. See *The Exponential Growth of AI*, *supra* note 209. See generally *Invention. Reinvented.*, IPROVA, <https://www.iprova.com> [<https://perma.cc/KE98-NK5F>] (last visited Dec. 2, 2023) (promoting AI technologies that augment human intelligence, allowing for high-speed inventions).

241. See U.S. CONST. art. I, § 8, cl. 8.

242. See *infra* Part IV.B.2.

243. See George & Walsh, *supra* note 232 (“In the absence of clear laws setting out how to assess AI-generated inventions, patent registries and judges currently have to interpret and apply existing law as best they can. This is far from ideal.”). In discussing the future necessary improvements of intellectual property law and offices, an article published by the American Bar Association predicts that “an increasing degree of industry-specific specialization will be required to ensure accuracy and quality control, combined with sufficiently supervised and controlled automation to ensure that a high, or even higher, quality work product ensues.” Christophe van Zyl, *The Future of IP: The More Things Change, the More They Stay the Same?*, AM. BAR ASS’N (May/June 2016), [https://www.americanbar.org/groups/intellectual\\_property\\_law/publications/landslide/2015-16/may-june/the\\_future\\_ip\\_more\\_things\\_change\\_more\\_they\\_stay\\_same](https://www.americanbar.org/groups/intellectual_property_law/publications/landslide/2015-16/may-june/the_future_ip_more_things_change_more_they_stay_same) [<https://perma.cc/VX3J-ADZ5>]. This interest in specialization within current intellectual property fields shows that a specialized office for A.I. might also prove more efficient. See *infra* Part IV.B.2.

244. See Sarah Bottorff, *Law Firm Specialization: Why It Matters*, NAT’L L. REV. (Aug. 6, 2022), <https://www.natlawreview.com/article/law-firm-specialization-why-it-matters> [<https://perma.cc/S6VN-8RKX>] (discussing the benefits of specialization in the law).

245. See *infra* Part IV.C.

246. See George & Walsh, *supra* note 232.

247. See *id.* (“[L]awmakers might decide that, if AI-IP is easier and faster to develop, it should be protected for a shorter period than the conventional [twenty]-year term of standard patents.”). Moreover, the goal is to create an increased benefit to society, not obtain a monopoly for creations that can occur at double-speed. See *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975).

requirements, creating less confusion and less error within the existing offices.<sup>248</sup>

### C. Remaining Questions

Considering this office will be an entirely new concept, there are several questions that will need to be answered.<sup>249</sup> The “simple” solution is that Congress will provide a new set of rules and regulations along with the emergence of the new office to guide everyone in this new area.<sup>250</sup> Some of the main points of concern likely include the process of review, the amount of time for the term of these new rights, ownership and assignment, and infringement and other liability.<sup>251</sup> The truth is that the answers to these questions are far from simple; they contain complex legal questions and will likely require careful thought from Congress.<sup>252</sup>

One of the larger, more pressing issues involves ownership, assignment, and liability.<sup>253</sup> Clearly A.I. is not a natural person in the sense that it can show up in court and assert or defend the intellectual property rights that were granted to it.<sup>254</sup> However, a corporation cannot physically show up in a courtroom either.<sup>255</sup> Corporations are another non-human entity that already enjoy many rights as a legal “person.”<sup>256</sup> The history of corporations and legal personhood could provide a general framework for how to approach some of the unanswered questions.<sup>257</sup>

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248. See George & Walsh, *supra* note 232 (“AI is changing the way that science is done and inventions are made. We need fit-for-purpose IP law to ensure it serves the public good.”).

249. See *infra* Part IV.C.

250. See George & Walsh, *supra* note 232 (“It would be better for governments to create legislation explicitly tailored to AI inventiveness.”).

251. See *infra* Part IV.C.

252. See *infra* Part IV.C.

253. See Yohan Liyanage & Kathy Berry, *Insight: Intellectual Property Challenges During an AI Boom*, BLOOMBERG L. (Oct. 29, 2019, 4:01 AM), <https://news.bloomberglaw.com/ip-law/insight-intellectual-property-challenges-during-an-ai-boom> [<https://perma.cc/PF3K-VWP5>].

254. Hopes, *supra* note 146, at 133 (“Because there is no ‘natural person’ listed as the inventor, it is assumed that no one can truly be held liable.”).

255. See *id.* (discussing how corporations, despite not being human, are still held legally liable).

256. *Id.*

257. See Sergio Alberto Gramitto Ricci, *Archeology, Language, and Nature of Business Corporations*, 89 MISS. L.J. 43, 56-57 (2019). One approach for determining if a corporation should receive rights involves the court looking to “the character of the individuals who compose [the corporation].” See *Bank of the United States v. Deveaux*, 9 U.S. 61, 89-90 (1809). This approach could be applied to A.I. as well, but instead the court would look at the “character” of the owner or developer. See *id.* A better approach might be developing an artificial personality, which combines legal personality and autonomous decision-making. Gramitto Ricci, *Artificial Agents*, *supra* note 10, at 874.



Current copyright law states that an employer, including a business entity, can be the author of certain works.<sup>258</sup> In fact, it is so common for a corporation to be an author, that most copyright cases to reach the Supreme Court have been filed by corporations, also known as authors that are nonhuman.<sup>259</sup> If A.I. were to be included in copyright law, it would operate in a similar way, and the owner or developer of the A.I. would have responsibility for any wrongdoing.<sup>260</sup>

Patent law is different in that a corporation cannot be named as the original inventor on an application, but instead corporations are often later assigned the intellectual property rights granted to that original inventor.<sup>261</sup> Corporations cannot be named as inventors because they cannot perform the requisite mental act of conceiving the idea.<sup>262</sup> However, the intellectual property rights granted to that original inventor are typically thereafter assigned to a corporation.<sup>263</sup> As a workaround, corporations often have employees that work on behalf of the company to conduct research and create novel inventions who agree to assign over any rights to inventions created during their employment.<sup>264</sup> The difference, as discussed throughout this Note, is that A.I. can independently conceive ideas.<sup>265</sup> Therefore, for a patent, A.I. would be listed as the original inventor—similar to the employee—and the rights would thereafter be assigned to the owner or developer, and they would bear responsibility and liability.<sup>266</sup>

## V. CONCLUSION

As it stands, A.I. creations do not fit into the United States' intellectual property laws.<sup>267</sup> We are living in a world of fast-paced technology,

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258. See, e.g., 17 U.S.C. § 201(b) (“[T]he employer or other person for whom the work was prepared is considered the author . . .”).

259. Opening Brief of Plaintiff-Appellant at 12-13, *Naruto v. Slater*, 888 F.3d 418 (9th Cir. 2018) (No. 16-15469), 2016 WL 4089357, at \*12-13. (“This proposition is so firmly established in the jurisprudence that most copyright cases to reach the United States Supreme Court have been filed by authors who are non-humans, ranging from motion picture studios to music publishers to others.”).

260. See Hopes, *supra* note 146, at 133 (“[P]rogrammers and owners of the artificial intelligence system would have to accept legal liability for any of the system’s wrongdoing.”).

261. See Randi Karpinia, *Can a Corporation Be Named as a Patent Inventor?*, SAGACITY LEGAL, <https://sagacitylegal.com/can-a-corporation-be-a-patent-inventor> [<https://perma.cc/FPN4-5LLM>] (last visited Dec. 2, 2023).

262. *Id.* (“A corporation cannot conceive of an invention because a corporation has no collective consciousness to perform a mental act.”).

263. See Berks, *supra* note 71.

264. *Id.*

265. See Richards, *supra* note 42.

266. See Hopes, *supra* note 146, at 133.

267. See *Thaler v. Vidal*, 43 F.4th 1207, 1213 (Fed. Cir. 2022).

growing more advanced and more useful each day.<sup>268</sup> Yet, the law is lagging behind these advancements.<sup>269</sup> The recent developments of ChatGPT, Midjourney, OpenAI, and DALL-E 2 make this issue even more urgent as these A.I. platforms are easily accessible to the general public.<sup>270</sup> A.I. can contribute meaningful ideas and inventions to the entire world, but society will not be able to enjoy the benefit of those creations if the law does not act quickly to provide these A.I. systems legal protection and a set of rules and regulations.<sup>271</sup>

While some may believe that expanding intellectual property rights to include A.I. harms human innovation, the purpose of this Note's proposal is to create a world that fairly includes both and encourages collaboration of human and machine creations, because each form of innovation is necessary and each form provides great value.<sup>272</sup> Amending the language of the Copyright and Patent Acts and creating a new A.I. intellectual property office will promote future development for a technologically advanced society and encourage such development to take place within the borders of the United States, rather than somewhere overseas.<sup>273</sup> A new office can also help to protect human innovation.<sup>274</sup> It would allow the two other intellectual property offices to continue with their important job of reviewing applications without burdening them with a high volume of A.I. applications.<sup>275</sup> It can further protect human inventions because it would provide a set of governing rules and regulations to help control the growth of A.I. creations and to ensure that all A.I. creations comply with the law and continue to provide a benefit to

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268. See *The Exponential Growth of AI*, *supra* note 209.

269. See Pearlman, *supra* note 89, at 37 (“[T]he United States legal system must adapt to the realities of today’s AI and eliminate the gray areas that exist in the law.”).

270. See Anthony V. Lupo & Dan Jasnow, *Robo-Rights: As AI Art Takes Over, Who’s the Real Artist in the Machine Learning Age?*, NAT’L L. REV. (Feb. 3, 2023), <https://www-natlawreview-com.cdn.ampproject.org/c/s/www.natlawreview.com/article/robo-rights-ai-art-takes-over-who-s-real-artist-machine-learning-age?amp> [<https://perma.cc/54FG-3F3S>] (discussing the new, increasingly accessible world of A.I.).

271. Hopes, *supra* note 146, at 135 (“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.”).

272. See Richard W. Stevens, *US Federal Court Rules: Machines Do Not “Invent” Things*, MIND MATTERS (Aug. 10, 2022), <https://mindmatters.ai/2022/08/us-federal-court-rules-machines-are-not-their-own-inventors> [<https://perma.cc/KFK9-S2XU>] (“All this effort expended to demote humankind while exalting machines.”).

273. See Liyanage & Berry, *supra* note 253 (discussing how the varying treatment of A.I. among different countries “will continue to cause headaches for international businesses and lawyers alike, as well as potentially influencing the location of the next wave of AI advancements”).

274. See *supra* Part IV.B.2.

275. See *supra* Part IV.B.2.

society.<sup>276</sup> The issue facing A.I. requires a solution that is not static but rather adapts with A.I. evolution.<sup>277</sup>

This change is necessary to adapt to the future world.<sup>278</sup> Without change, the world cannot evolve or grow, and it cannot become any better than it is today.<sup>279</sup> As President John F. Kennedy once said, “Change is the law of life. And those who look only to the past or present are certain to miss the future.”<sup>280</sup> A.I. innovation is the future, and the change is happening now.<sup>281</sup> While the proposals in this Note may seem unorthodox today, the future will not wait for the law to catch up, and it is extremely important that the field of intellectual property law is prepared.<sup>282</sup>

*Ally E. Kaden\**

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276. See *supra* Part IV.B.2.

277. See Lupo & Jasnow, *supra* note 270.

278. See Pearlman, *supra* note 89, at 25, 37.

279. See Robbins, *supra* note 1.

280. Alana Ross & Barry Ross, *Change Is the Law of Life - JFK*, ROSS & ROSS INT’L (Mar. 14, 2017), <https://www.rossross.com/blog/change-is-the-law-of-life-jfk> [<https://perma.cc/3XZF-UE2P>] (quoting former President John F. Kennedy).

281. See *id.* (discussing the unignorable change that is occurring right now with digital transformation and the need to adapt with these innovations).

282. See Pearlman, *supra* note 89, at 10, 25, 37.

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