

Oct 21, 2023

U.S. Copyright Office, Library of Congress.

Re: Request for Comments Regarding Artificial Intelligence and Copyright

To the Copyright Office,

My name is Ryan Abbott, I am Professor of Law and Health Sciences at University of Surrey School of Law, Adjunct Assistant Professor of Medicine at the David Geffen School of Medicine at University of California Los Angeles, Partner at Brown, Neri, Smith & Khan, LLP, and a neutral at JAMS, Inc. I have published widely on artificial intelligence (“AI”) and intellectual property (“IP”), including as the author of *The Reasonable Robot: Artificial Intelligence and the Law*, Cambridge University Press (2020) and as the editor of the *Research Handbook on Intellectual Property and Artificial Intelligence*, Edward Elgar (2022). I am a licensed physician and patent attorney in the United States, and a solicitor advocate in England and Wales.¹

I also lead the Artificial Inventor Project, which includes a series of pro bono legal test cases seeking intellectual property rights for AI-generated output in the absence of a traditional human author, including *Thaler v. Perlmutter*, No. 23-5233 (D.C. Cir.). This project is intended to promote dialogue about the social, economic, and legal impact of frontier technologies such as AI and to generate stakeholder guidance on the protectability of AI-generated output.²

As a preliminary matter, it is important for the Office to operate using standardized definitions. In the almost 70 years since the term “artificial intelligence” was introduced, it still lacks a generally accepted definition. While this ambiguity does not seem to have negatively impacted technological progress, it is necessary to have clarity in legal regulations and agency policies to promote stakeholder clarity.

While it is helpful that the Office has included a definition of AI in the NOI and RFC, I would suggest first that it should not use the word “intelligence” in the definition of

¹ www.ryanabbott.com.

² <http://artificialinventor.com/>

artificial intelligence. Also, AI should be defined in a technologically neutral manner. Generative AI systems do not have to be wholly or partly based on machine learning technologies to automate creative activity. I would simply define AI as follows: an algorithm or machine capable of completing tasks that would otherwise require cognition.³ Similarly, I would define an “AI-generated work” as a work functionally generated by an AI system under circumstances in which no person traditionally qualifies as an author, similar to how a “computer-generated work” is defined in the United Kingdom’s copyright laws.

My comments below focus on the protectability of AI-generated works. They are responsive to at least questions 1–5 and 18–21.

In particular, the protectability of AI-generated works is the subject of my most recent law review article on AI and copyright forthcoming in the *Florida Law Review*. Abbott, Ryan Benjamin and Rothman, Elizabeth, *Disrupting Creativity: Copyright Law in the Age of Generative Artificial Intelligence* (August 8, 2022). *Florida Law Review*, Forthcoming, Available at SSRN: <https://ssrn.com/abstract=4185327>.

Protecting AI-Generated Works and Accepting AI Authorship

A. Should AI-Generated Works Be Protectable?

Whether copyright protection should be available for AI-generated works depends on the costs and benefits of providing protection, including whether and to what extent there is a problem with lack of protection and the alternatives to protection. With human-generated works, there are numerous benefits associated with copyright protection. These break down broadly into, 1) economic incentives, namely encouraging the production and dissemination of works; and 2) protection of author moral rights.⁴

There are also numerous costs associated with copyright protection.⁵ Copyright allows right holders to prevent others from making or using protected works.⁶ It can thus be

³ Ryan Abbott, [The Reasonable Robot: Artificial Intelligence and the Law](#) (2020), at 22. I recommend a functional definition because the Office should be concerned with the capabilities and functions of AI, rather than the specific way an AI is programmed or designed (e.g., machine learning based systems vs expert systems).

⁴ See William M. Landes and Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. Leg. Stud. 325, 325-33, 344-53 (1989); See Tim W. Dornis, *Artificial Creativity: Emergent Works and The Void In Current Copyright Doctrine*, 22 YALE J.L. & TECH. 1 (2020)

⁵ See, e.g., M.A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 624. (1998); Cf. Garrett Hardin, *The Tragedy of the Commons* 162 SCIENCE 1243, 1244 (1968). Whether the costs of IP rights outweigh the benefits is the subject of extensive literature which suggests it is nuanced and context dependent. See generally, ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* (1990).

⁶ Specifically, a copyright holder has the exclusive right to: “(1) to reproduce the copyrighted work in copies or phonorecords; (2) to prepare derivative works based upon the copyrighted work; (3) to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending; (4) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works, to perform the copyrighted work publicly; (5) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and

used to prevent the production and distribution of works because right holders can elect not to make, sell, or license their works and they can prevent others from doing so. Where right holders do elect to commercialize works, copyright allows them to limit competition and charge more for their works than they could otherwise. Right holders can also prevent third parties from making infringing⁷ and derivative works (such as fan fiction).⁸ Intellectual property rights can thus impede the sharing and further development of knowledge, and there are benefits to having intellectual property in the public domain—meaning not protected by intellectual property laws.⁹

Even for human-generated works, stakeholders disagree on the appropriate level of protection.¹⁰ But the general view of Congress and the Courts has been that the benefits of copyright outweigh the costs. “The granting of such exclusive rights, under the proper terms and conditions, confers a benefit upon the public that outweighs the evils of the temporary monopoly.”¹¹

B. A Brief History of American Copyright Law

The first modern copyright law was the Statute of Anne, passed in 1710 in the United Kingdom (what was then the Kingdom of Great Britain).¹² Prior to this, exclusive rights to works were given by statute to publishers and printers rather than authors.¹³ Although, some early cases involving what today would be associated with copyright infringement were brought under common law causes of action.¹⁴

pictorial, graphic, or sculptural works, including the individual images of a motion picture or other audiovisual work, to display the copyrighted work publicly; and (6) in the case of sound recordings, to perform the copyrighted work publicly by means of a digital audio transmission.” 17 U.S. Code § 106.

⁷ Those where an infringer had access to the protected work and where the infringing work is substantially similar to the protected aspects of the protected work. *Feist Publications, Inc. v. Rural Tel. Serv. Co. Inc.*, 499 U.S. 340, 361 (1991).

⁸ Michelle Chatelain, Note, *Harry Potter and the Prisoner of Copyright Law: Fan Fiction, Derivative Works, and the Fair Use Doctrine*, 15 TUL. J. TECH. & INTELL. PROP. 199 (2012)

⁹ See *Copyright Term and the Public Domain*, LIBGUIDES AT CORNELL UNIVERSITY, guides.library.cornell.edu/copyright/publicdomain. (last visited Jan. 18, 2023).

¹⁰ Stewart E. Sterk, *Rhetoric and Reality in Copyright Law*, 94 MICH. L. REV. 1197 (1996) (arguing copyright law is the result of baseless rhetoric and interest group politics).

¹¹ H.R. REP. NO. 2222, 60th Cong., 2d Sess. (1909) at 5. Plus, most consumers do not require access to a particular work in the way that they might a patented life-saving drug, and so there is a higher degree of fungibility—if Disney charges too much to watch an Avengers movie, consumers can watch Justice League instead.

¹² Oren Bracha, *The Statute of Anne: An American Mythology*, 47 HOUS. L. REV. 877 (2010).

¹³ *Id.* Outside of the United Kingdom, the first state grants of exclusive rights, the precursors of modern copyright protection, were made in Venice in 1495 and in France in 1507, again to operators of printing presses rather than authors. Stephen Breyer, *The uneasy case for copyright: a study of copyright in books, photocopies, and computer programs*, 84 HARV. L. REV. 281, 292 (1970). Prior to the Statute of Anne in the Kingdom of Great Britain, copyright could also be the result of a royal prerogative (a legislative grant). Russ Ver Steeg, *The Roman Law Roots of Copyright*, 59 MD. L. REV. 522, 528 (2000).

¹⁴ The first and most famous “copyright” case may have occurred more than a thousand years before the passage of the Statute of Anne. King Diarmid of Ireland (allegedly) adjudicated a dispute between St. Columba and Abbot Fennian involving claims that Columba had illegally copied Fennian’s psalter. King Diarmid ruled in favor of Fennian, pronouncing that, “to every cow belongs her calf, therefore to every book belongs its copy.” *The Cathach / The Psalter of St Columba*, ROYAL IRISH ACADEMY (Aug. 31, 2015), www.ria.ie/cathach-psalter-st-columba (last visited Jan. 18, 2023). By some accounts, this judgment led to the Battle of Cúl Dreimne and countless deaths. B. Lacey, *The Battle of Cúl Dreimne: A*

The introduction of the printing press was a major technological development and one that inexorably altered the landscape for intellectual property.¹⁵ Prior to this, copying a book was an expensive, error-prone, and laborious undertaking.¹⁶ With the printing press, books could be cost-effectively copied in large quantities, which had profound implications for publishers, authors, and governments concerned about the spread of certain information.¹⁷ Shortly after its introduction, English authorities established an ostensible monopoly on printing with the Stationers' Company.¹⁸ In return for the grant of certain exclusive rights, the Stationers' Company controlled the publication of treasonable, seditious, heretical, or blasphemous books.¹⁹ Unless a printer or publisher had a special relationship with the government they were expected to register any publication with the Stationers' Company.²⁰ By registering a work, the printer or publisher directly received a monopoly on its publication.²¹

Eventually, the Statute of Anne introduced the principle of rights in a work belonging directly to an author.²² While the statute broke up the Stationers' Company monopoly and introduced new author rights (authors being more sympathetic right holders than publishing companies), in practice authors had to assign their works to publishers both to have their works disseminated and to make money.²³ The effect was to ensure the production of books and codify in statute a continuation of existing commercial practices.²⁴

Reassessment. The Journal of the Royal Society of Antiquaries of Ireland (2003), 133, 78–85.

<http://www.jstor.org/stable/25509109>. Long before this, while Roman law did not recognize a general law of copyright, “Roman law precepts can be clearly seen in numerous aspects of copyright doctrine: the essence of copyright as intangible property; the nature of the public domain; different types of copyrightable works (works of authorship) and the sale of them; ownership of copyrights (including joint authorship and work for hire); and liability for copyright infringements.” Russ Ver Steeg, The Roman Law Roots of Copyright, 59 Md. L. Rev. 522, 524 (2000).

¹⁵ See W. S. Holdsworth, *Press Control and Copyright in the 16th and 17th Centuries*. YALE L.J. 29(8), 841-858 (1920).

¹⁶ *The History of Copyright*, UK COPYRIGHT SERVICE, copyrightservice.co.uk/copyright/history-copyright. (“The cornerstones of modern copyright law, the right to be identified as the creator or the work and economic property rights, have their roots in ancient Greek, Roman and Jewish cultures, and can be traced back as far as the 6th century B.C.E. in ancient Greece; but it was not until use of the movable type printing press became widespread across Europe that the need for statutory regulation was realised.”).

¹⁷ *Id.*; Holdsworth *supra* note 15.

¹⁸ *Id.* at 843.

¹⁹ *Id.* at 843-844.

²⁰ *Id.*

²¹ *Id.* at 844.

²² *Id.*; Statute of Anne, 1710.

²³ *Supra* note 13, at 282.

²⁴ *Id.* at 292; DAVID SAUNDERS, *AUTHORSHIP AND COPYRIGHT* (Routledge, 1992); C.f. LR PATTERSON, *COPYRIGHT IN HISTORICAL PERSPECTIVE* (Vanderbilt University, 1968) (arguing the Statute of Anne was a trade-regulation statute aimed to promote competition). In contrast to the common law tradition, Copyright law developed in France in the shadow of the French Revolution and subsequent political philosophies to, at least ostensibly, glorify individual authors. See Ginsburg, *infra* note 31, at 992. An “exclusive right is conferred on authors because their property is the most justified since it flows from their intellectual creation.” *Id.* Emphasis on moral rights became pervasive, including the rights of heirs to claim remedies if subsequent owners alter or distort works in ways that harm the reputation of the original author. William Strauss, *STUDY NO.4 THE MORAL RIGHT OF THE AUTHOR* (July 1959) at 117, <https://www.copyright.gov/history/studies/study4.pdf>. Even here, however,

In the American Colonies, the Statute of Anne did not apply and there was no general copyright system.²⁵ The only legal protection for works were ad hoc privileges issued by local legislatures giving printers or publishers exclusive rights over specific texts usually deemed to be of particular interest to the public, such as a collection of colony laws.²⁶ In 1787, James Madison submitted a provision to the Framers of the U.S. Constitution to “secure to literary authors their copyrights for a limited time.”²⁷ This was the precursor of the Constitution’s Copyright Clause, which ultimately granted Congress the power to “promote the Progress of Science and useful Arts, by securing for a limited Time to Authors and Inventors the exclusive right to their respective Writings and Discoveries.”²⁸ The language of the Constitution is noticeably more focused on public interest than Madison’s proposal.

Congress passed its first Copyright Act in 1790, which inherited numerous provisions from the Statute of Anne.²⁹ The Act stated it was “for the encouragement of learning, by securing copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned.”³⁰ Authors and proprietors are mentioned, but the public remained the law’s primary beneficiaries.³¹ Policymakers hoped that copyright protection would facilitate commercial activities, lead to a more informed and engaged citizenry, and promote democracy by encouraging free speech.³²

As American copyright law continued to develop, Congress continued to emphasize its public-centric focus. In submitting the bill³³ that became the Copyright Act of 1909, the House of Representatives committee responsible for the bill submitted a report, also adopted by the Senate, noting the following:

The enactment of copyright legislation by Congress under the terms of the Constitution is not based upon any natural right that the author has in his

Professor Jane Ginsburg cautions that the framers of French copyright laws may not have greeted the concept of author's rights with as much enthusiasm as later writers. See Ginsburg, *infra* note 31, at 1012. She notes that “the most vociferous advocates for authors' rights were not authors, but their publishers, or, more specifically, the Paris Community of Book Sellers and Printers” and that, “a strong current of Enlightenment thought objected on instrumentalist grounds to any assertion of property rights in idea-bearing works: individual proprietary claims would retard the progress of knowledge.” *Id.* at 1012-1013.

²⁵ See Bracha, *supra* note 12.

²⁶ *Id.*

²⁷ U.S. Copyright Beginnings, U.S. COPYRIGHT OFFICE, www.copyright.gov/history/copyright-exhibit/beginnings/ (last visited Jan. 18, 2023).

²⁸ *Id.*; Art. 1, § 8 U.S. Constitution. In deciding whether legislation is permissible under the Copyright Clause, Courts look to whether there is a rational basis for Congress to have believed that its legislative action was consistent with the aims of the Eldred, *Eldred v. Ashcroft*, 537 U.S. 186, 205 (2003).

²⁹ 1790 Copyright Act. It also added a registration requirement. *Id.*

³⁰ *Id.*

³¹ Jane C. Ginsburg, *A Tale of Two Copyrights: Literary Property in Revolutionary France and America*, 64 *TUL. L. REV.* 991, 1015, (1989). (“Congress adopted a rather pragmatic view of the kinds of works that achieved that objective: the first copyright law protected maps, charts, and books—in that order. The great majority of works for which authors or publishers sought copyright protection under that first statute were highly useful productions.”).

³² *Id.* at 992; *Freedom of the Press in the eyes of the Founding Fathers*, COLONIAL WILLIAMSBURG (Dec. 10, 2019), www.colonialwilliamsburg.org/learn/living-history/freedom-press-eyes-founding-fathers/ (last visited Jan. 18, 2023).

³³ H.R. 28192. H.R. REP. No. 2222, 60th Cong., 2d Sess. (1909).

writings, for the Supreme Court has held that such rights as he has are purely statutory rights, but upon the ground that the welfare of the public will be served and progress of science and useful arts will promoted by securing to authors for limited periods the exclusive rights to their writings. The Constitution does not establish copyrights, but provides that Congress shall have the power to grant such rights if it thinks best. Not primarily for the benefit of the author, but primarily for the benefit of the public, such rights are given. Not that any particular class of citizens, however worthy, may benefit, but because the policy is believed to be for the benefit of the great body of people, in that it will stimulate writing and invention, to give some bonus to authors and inventors.³⁴

Since then, the Supreme Court has explicitly endorsed the supremacy of the public interest as the motivating force behind copyright law.³⁵ For example, in *Fox Film Corp. v. Doyal*, the Court wrote, “the sole interest of the United States is the general benefits derived from the labors of authors for the public.”³⁶ In *Mazer v. Stein*, the Court articulated that, “the economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in ‘Science and the useful arts.’”³⁷

C. Protecting AI-Generated Works and Objections

The history and purpose of the Constitution and the Copyright Act both weigh in favor of the protection of AI-generated works because the public interest trumps any direct benefit to authors. With AI-generated works, allowing protection will encourage people to develop and use creative AI to generate and disseminate socially valuable works, thereby achieving the goal of copyright law.³⁸ Absent protection, certain AI-generated works will never be created or disseminated. That is because, just like human-generated works, the creation and dissemination of works, or at least certain works, requires significant investments of time and money.³⁹

Failing to provide protection also requires producers and distributors of works, at least those for whom copyright is a meaningful incentive like movie and music studios, to use a human author even if she is less efficient. For instance, even if an AI can generate an illustration for a movie poster at a fraction of the time and expense as a human artist,

³⁴ H.R. REP. NO. 2222, 60th Cong., 2d Sess. (1909) at 5.

³⁵ “The primary objective of copyright is not to reward the labor of authors, but ‘[t]o promote the Progress of Science and useful Arts.’” *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 349 (1991) (alteration in original); *Harper & Row, Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 546 (1985) (“It is evident that the monopoly granted by copyright actively served its intended purpose of inducing the creation of new material of potential historical value.”).

³⁶ *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127 (1932).

³⁷ *Mazer v. Stein*, 347 U.S. 201, 219 (1953).

³⁸ By contrast, failing to protect these works will encourage people to misrepresent the role of AI in the creative process and to misrepresent authorship. *See* Harsha Gangadharbatla (2022). The Role of AI Attribution Knowledge in the Evaluation of Artwork. *Empirical Studies of the Arts*, 40(2), 125–142.

³⁹ *See* Breyer, *supra* note 13, at 292. Even in the case of human-generated works investment often comes from a publisher or producer rather than an author. *Id.*

and even if consumer focus groups prefer the AI-generated poster, a movie studio will need to employ a human artist to obtain copyright. That is a socially wasteful outcome if an AI can complete a task better, faster, and cheaper than a person. The same argument applies to having two-tiers of protection for AI-generated and human-generated works. If the additional benefits associated with human authorship are indeed a meaningful incentive, it will push producers to employ people even where it is not otherwise efficient. If those benefits are not meaningful, then they are not rights that should be provided for either AI-generated or human-generated works.

Despite this, some critics nevertheless believe that AI-generated works should not be protected, either due to the argument that copyright law is intended only to promote human creativity, or because the involvement of AI alters the cost/benefit analysis. Of course, it would be useful to have high-quality empirical evidence of the impact of copyright on the producers and distributors of AI-generated works. However, to my knowledge that evidence does not exist, and it is also not evidence that drives policy making with respect to human-generated works.⁴⁰

i. Human Exceptionalism

The argument in favor of human exceptionalism comes in several forms. First, that human creativity is functionally exceptional—in other words, that an AI cannot autonomously generate an original work. This argument was made long ago by Rene Descartes, who argued that a machine could never use words in the way we “declare our thoughts to others.”⁴¹ Even if it could give some poor imitation of speech, it could not give an “approximately meaningful answer to what is said in its presence, as the dullest of men can do.”⁴² Descartes’ predictions had proven inaccurate by the 1970s, but the same basic argument drove CONTU’s conclusion then that AI was not autonomously generating creative output. Whether accurate in CONTU’s time, technology has reached the stage where an argument for functional exceptionalism can no longer be supported—at least not in terms of meeting the very low bar of originality for copyright purposes. The basic argument continues to be made, the goal post having shifted, to claim that while AI can make mediocre art, it cannot make great art.⁴³ But regardless of its veracity, it is not relevant for copyright law which does not concern itself with greatness.⁴⁴

The second version of the argument is that human creativity is ontologically exceptional, namely that even if an AI and a person can generate the same work, the

⁴⁰ See, e.g., Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281 (1970) (arguing the merits of copyright protection based on doctrinal analysis in association with the forthcoming Copyright Act of 1976).

⁴¹ Rene Descartes, *Discourse On Method*, THE PHILOSOPHICAL WRITINGS OF DESCARTES vol. 1 109–151, 109 (John Cottingham, Robert Stoothoff & Dugald Murdoch eds. 1985).

⁴² *Id.*

⁴³ This argument involves the “AI effect”, namely that once AI can do something it is discounted. As AI historian Pamela McCorduck wrote, “It’s part of the history of the field of artificial intelligence that every time somebody figured out how to make a computer do something—play good checkers, solve simple but relatively informal problems—there was a chorus of critics to say, ‘that’s not thinking’.” PAMELA MCCORDUCK, *MACHINES WHO THINK* (2nd ed.) (2004).

⁴⁴ *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 251 (1903).

way a person does so is fundamentally different from the AI.⁴⁵ There are at least three problems with this argument. First, there is no scientific, or even philosophical, consensus on the nature of creativity.⁴⁶ Without a clear understanding of creativity and thus what the difference is between what an AI and a human being are doing, it seems problematic to argue that only what people are doing counts as creative—and even more problematic to base laws on that assumption.⁴⁷ Second, to the extent creativity is understood, there is no consensus that AI cannot exhibit creativity. There is an extensive body of literature on philosophy of mind and computer science that explores the nature of creativity, and at least some seminal thinkers have argued that it is a purely mechanical process analogous to how some AI operates.⁴⁸ For instance, Marvin Minsky, the “Father of Artificial Intelligence,”⁴⁹ had a theory to explain creativity called “Society of Minds.”⁵⁰ He argued that minds are not a single unified intelligence but rather a collection of smaller minds that come together and help to solve problems like a complex mix of competing generative algorithms.⁵¹ The claim then that what an AI and a person do to generate something creative is fundamentally different does not reflect a scientific consensus.

⁴⁵ Although no longer framed in theological terms, the belief in human exceptionalism divorced from the reality of functional equivalence does at times veer close to the “Theological Objection” to machine thinking addressed by Alan Turing, namely that “[t]hinking is a function of man's immortal soul. God has given an immortal soul to every man and woman, but not to any other animal or to machines. Hence no animal or machine can think.” A. M. TURING, COMPUTING MACHINERY AND INTELLIGENCE, *Mind*, Volume LIX, Issue 236, October 1950, 433–460.

⁴⁶ See, e.g., Cade Metz, *A.I. Is Not Sentient. Why Do People Say It Is?*, NYTIMES.COM (Aug 5, 2022), <https://www.nytimes.com/2022/08/05/technology/ai-sentient-google.html> (last visited Jan. 18, 2023), (describing conflicting views about sentience and consciousness in the AI context).

⁴⁷ Aside from AI, a variety of animals are clearly capable of creativity. See, e.g., Dane E. Johnson, *Statute of Anne-imals: Should Copyright Protect Sentient Nonhuman Creators?*, 15 ANIMAL L. 15, 23 (2008). Perhaps the objection should be in the form of biological exceptionalism, rather than human exceptionalism.

⁴⁸ See generally, Stephen L. Thaler, Vast Topological Learning and Sentient AGI. *Journal of Artificial Intelligence and Consciousness*, 8(1), 81–111 (2021); *Breaking into the black box of artificial intelligence*, NATURE (June 22, 2022), www.nature.com/articles/d41586-022-00858-1; Takeshi Kojima, Shixiang Shane Gu, et.al, *Large Language Models are Zero-Shot Reasoners* (June 9, 2022) The University of Tokyo And Google Research, Brain Team, PREPRINT ARXIV, <https://arxiv.org/pdf/2205.11916v2.pdf>.

⁴⁹ Marvin Minsky, *father of artificial intelligence, dies at 88*, MASSACHUSETTS INSTITUTE OF TECHNOLOGY (Mar. 1, 2016), news.mit.edu/2016/marvin-minsky-obituary-0125 (last visited Jan. 18, 2023).

⁵⁰ See MARVIN MINSKY, SOCIETY OF MIND (1986). He was, incidentally, fond of referring to human beings as “meat machines.” <https://www.wired.com/2016/01/marvin-minskys-marvelous-meat-machine/>.

⁵¹ *Id*; See Pindar Van Arman, *Creativity Is Probably Just a Complex Mix of Generative Art Algorithms*, DATA DRIVEN INVESTOR (July 3, 2018), medium.datadriveninvestor.com/creativity-is-probably-just-a-complex-mix-of-generative-art-algorithms-6d37a0087e86 (last visited Jan. 18, 2023). More recently, Gauthier Vernier, one of the creators of the AI responsible for The Portrait of Edward Bellamy sold at Christie's auction house, claimed, “[w]e're looking at these portraits the same way a painter would do it. Like walking in a gallery, taking some inspiration. Except that we feed this inspiration to the algorithm, and the algorithm is the part that does the visual creation...I think [AI] has its place in the art world because it tries to replicate what any artist would do, like trying to create from what he knows.” *First artwork made with AI sells for \$432K*, (Oct. 25, 2018), www.10news.com/news/national/first-piece-of-art-made-with-artificial-intelligence-sells-for-433k-at-auction (last visited Jan. 18, 2023).

The third, and best, reason why the ontological exceptionalism argument fails is that the way a work is made should be irrelevant to its protection. Alan Turing, another pioneering computer scientist, considered a broader version of this question in his seminal work, *Computing Machinery and Intelligence*. He began by asking whether machines could think, then attempted to define ‘machine’ and ‘think.’ Ultimately, given the lack of objective understanding of the nature of thought, he reframed the question to ask whether a machine could behave indistinguishably from a person. Turing thought that the nature of thought, while of interest to philosophers, was not practically relevant—it is behavior that matters.⁵² To Turing (and Minsky), thinking was an impressive but mechanistic phenomenon, and one that would be eventually replicated by a machine.⁵³ Even if some critics are right that Turing took this too far and that an AI itself is not metaphysically creative,⁵⁴ Turing’s analysis at least counters the ontological argument in the copyright context because copyright law is utilitarian and should not be concerned with philosophical distinctions that interfere with positive consequentialist outcomes.

The last version of the human exceptionalism argument is that regardless of functional and ontological similarity, there are consequentialist justifications for only encouraging human activity. This is the argument made by Professors Craig and Kerr when they claim that authorship is inherently a relational activity, and that copyright is not about simply generating works but rather about promoting human communication and socialization. But while Professors Kerr and Craig are no doubt correct that some works have relational benefits, their normative goals are not those of the Constitution or Congress.

ii. Overprotection

Separate from the exceptionalism arguments, protection could be objected to on the basis that the costs and benefits of copyright protection differ between AI- and human-generated works. The benefits of protection may be reduced because no incentive, or at least less incentive, is needed for existing AI to create new works. The logic goes that once a creative AI like Dall·E 2 exists, the marginal cost of having it create additional works is close to zero. This is to say that the investment in the case of AI-generated

⁵² In this vein, Professor Grimmelmann, argues that whatever the difference in nature between AI-and human-generated works, they should be considered equivalent. “The use of rules at all is simply the choice to split the creative process into two stages rather than one. The inputs — Whatever it is that we mean by ‘creativity’ or ‘expression’ or ‘authorship’ — are indistinguishable, and so is the output — a fixed copy of the work.” James Grimmelmann, *There’s No Such Thing as a Computer-Authored Work— And It’s a Good Thing, Too*, 39 COLUM. J. L. & ARTS 403, 408 (2016). “If an author, for her own convenience, decides to automate some of the steps by programming a computer, copyright should not look any less generously upon her... To say that an author creates intuitively is simply to say that neither she nor we have ready access to the algorithm she follows.” *Id.*; See also, Alan L. Durham, *The Random Muse: Authorship and Indeterminacy*, 44 WM. & MARY L. REV. 569 (2002).

⁵³ This attitude reflects a materialism or physicalism school of philosophy.
https://www.philosophybasics.com/branch_materialism.html;
https://www.philosophybasics.com/branch_physicalism.html.

⁵⁴ Professor Bridy similarly argues that if an AI-generated work is indistinguishable from a human-generated work, then the work is creative, even if she would not say the AI is creative. Annemarie Bridy, *The Evolution of Authorship: Work Made by Code*, 39 COLUM. J.L & ARTS 395, 399 (2016).

works comes mainly upfront in the development, training, improving, and iterating of models, but once an AI is fully operational, it can simply continue to make a practically limitless number of works, albeit with some ongoing costs of maintenance and operation. As a result, the scale tips to argue against protection because many or most AI-generated works would be created in the absence of copyright protection. This line of reasoning might alternately suggest that a more limited copyright would be appropriate for AI-generated works, such as a shorter term of protection.

While less incentive may be needed after an AI has been fully programmed or trained, this ignores some key considerations. First, the initial development of creative AI like Dall·E 2 tends to require substantial investment. The incentive may simply be needed further upstream in the process than is generally the case with human creativity. Substantial investment may also be needed to continue improving an AI to generate better output.⁵⁵ Also, even if less investment is needed to create a work, the same level of investment is still required to disseminate a work regardless of how it is created. The costs could also be greater in the case of AI-generated works due to negative impacts on 1) technological unemployment, and 2) property distribution. The technological unemployment concern is that with AI able to generate certain types of work faster and cheaper than human creatives, this will decrease the need for human labor. It is essentially a more specific version of the automation scare—the concern that automation is going to result in wide-spread unemployment.⁵⁶

These concerns about automation date back to at least the first industrial revolution,⁵⁷ but automation has not historically increased overall unemployment even as it has reduced the need for certain types of labor.⁵⁸ For example, at the turn of the 19th Century, about 40 percent of the workforce was in agriculture, while today it is only about 3 percent.⁵⁹ This has not resulted in a 37 percent increase in the unemployment rate.⁶⁰ Technology has made agricultural labor vastly more efficient, and people transitioned to different jobs that have resulted in greater overall productivity.⁶¹ In the

⁵⁵ See, e.g., OpenAI's ChatGPT Reportedly Costs \$100,000 a Day to Run, <https://www.ciocoverage.com/openais-chatgpt-reportedly-costs-100000-a-day-to-run/> (last visited Jan. 18, 2023); *AI and Compute How Much Longer Can Computing Power Drive Artificial Intelligence Progress?*, CSET (Jan. 7, 2022), https://cset.georgetown.edu/wp-content/uploads/AI-and-Compute-How-Much-Longer-Can-Computing-Power-Drive-Artificial-Intelligence-Progress_v2.pdf.

⁵⁶ Rob Salkowitz, *AI Is Coming For Commercial Art Jobs. Can It Be Stopped?*, FORBES (Sept. 16, 2022), <https://www.forbes.com/sites/robsalkowitz/2022/09/16/ai-is-coming-for-commercial-art-jobs-can-it-be-stopped/?sh=1a1888e754b0> (last visited Jan. 18, 2023).

⁵⁷ See, e.g., DAVID RICARDO, *ON THE PRINCIPLES OF POLITICAL ECONOMY AND TAXATION* 283–84 (Batoche Books 2001) (3d ed. 1821). For that matter, broader social issues related to automation have been discussed since Aristotle's time. See, e.g., JOHANNES HANEL, *ASSESSING INDUCED TECHNOLOGY: SOMBART'S UNDERSTANDING OF TECHNICAL CHANGE IN THE HISTORY OF ECONOMICS* 91 (2008) (noting Aristotle's hope that machines could occupy the place of slaves in a utopian society).

⁵⁸ See John Maynard Keynes, *Economic Possibilities for our Grandchildren*, in *ESSAYS IN PERSUASION* 321–32 (Palgrave Macmillan 2010) (1930).

⁵⁹ See Carolyn Dimitri et al., *The 20th Century Transformation Of U.S. Agriculture And Farm Policy* 2, USDA (June 2005), https://www.ers.usda.gov/webdocs/publications/44197/13566_eib3_1_.pdf?v=41055.

⁶⁰ *Id.*

⁶¹ See generally Joel Mokyr et al., *The History of Technological Anxiety and the Future of Economic Growth: Is This Time Different?*, 29 J. ECON. PERSP. 31 (2015).

present context, it may similarly be the case that some creative tasks are rendered obsolete, but that human creatives will transition to different tasks or types of creative work.

Of course, gains to gross domestic product are likely scant consolation to individual creatives now facing competition from AI and potentially losing their jobs, and society has not traditionally done well at lessening the burden on people rendered technologically unemployed.⁶² But the solution to technological unemployment is to provide enhanced social benefits and retraining so that the costs of automation are fairly distributed along with the benefits, not to prevent or discourage businesses from automating.⁶³ The latter is socially wasteful, like a law that mandates human elevator attendants in lieu of automatic control panels.⁶⁴

The distributional concern is that large corporations may be more likely than small and medium enterprises (SMEs) to have the resources necessary to effectively develop and use generative AI, and that this will result in a consolidation of copyright in the hands of companies like Disney and Meta. In turn, this could be a problem if it exacerbates financial inequality or if it is the result of, or results in, unfair business practices or anti-competitive behavior.

As a preliminary matter, it is far from certain that generative AI will preferentially benefit large enterprises. It might also be the case that generative AI democratizes copyright ownership. Today's generative AI allows individuals to produce creative works in ways that were previously impractical.⁶⁵ But even assuming the financial benefits of generative AI preferentially flow to large enterprises, that is not a reason to prohibit copyright in AI-generated works. Large enterprises already hold a disproportionate share of financial resources and intellectual property,⁶⁶ and we do not punish entities simply for being large, or for dominating markets due to superior products, business acumen, or through historical accident.⁶⁷

If the concern is distributional fairness, namely that it would be a bad social outcome for AI to generate a large amount of wealth that flows disproportionately to the already wealthy (perhaps even at the expense of those with lower socioeconomic status), the solution is a more progressive tax system rather than impeding technological progress.⁶⁸

⁶² *Id.*

⁶³ Ryan Abbott and Bret Bogenschneider, *Should Robots Pay Taxes? Tax Policy in the Age of Automation*, 12 HARV. L. & POL. REV. 145 (2018).

⁶⁴ Ernesto Londono, *Rio de Janeiro Elevator Attendants 'Adore' Their Dying, Chatty Trade*, N.Y. TIMES (Nov. 25, 2018), <https://www.nytimes.com/2018/11/25/world/americas/brazil-rio-de-janeiro-elevator-attendants.html> (last visited Jan. 18, 2023).

⁶⁵ Alexander Reben, *The Weird And Wonderful Art Created When AI And Humans Unite*, BBC FUTURE (Nov. 23, 2022), <https://www.bbc.com/future/article/20221123-the-weird-and-wonderful-art-created-when-ai-and-humans-unite> (last visited Jan 20, 2023).

⁶⁶ See *supra* note **Error! Bookmark not defined.**

⁶⁷ *United States v. Grinnell Corp.*, 384 U.S. 563, 57071 (1966).

⁶⁸ See generally, Ryan Abbott and Bret Bogenschneider, *Should Robots Pay Taxes? Tax Policy in the Age of Automation*, 12 HARV. L. & POL. REV. 145 (2018) (noting businesses receive incentives to automate, and arguing in favor of decreasing taxes on human labor to level the playing field for automation).

If the concern is unfair or anti-competitive business practices, there are solutions to this as well. For instance, Disney could, hypothetically, have very powerful AI systems generate countless variations on Marvel comics, characters, movies, etc. Because copyright exists from the moment of fixation and does not require registration, it could protect a large amount of creative content in this manner. This sort of activity could be used productively to make better Marvel content, say by generating a billion versions of a comic book and having an AI model which version is most likely to be appreciated by consumers.

However, in the hands of a “Copyright Troll” instead of Disney, this sort of activity might also be used to make money through strategic litigation, without much investment in distributing works. This could be done by publishing all billion versions of the comic book online, having AI search the Internet for works with some similarities to these versions, and suing in an unduly aggressive or opportunistic manner to attempt to exclude other content generators from the genre or just to extract rent.⁶⁹

There are solutions to this problem built into copyright law already, which seeks to maintain an appropriate balance between exclusive control and public access through mechanisms such as the fair use doctrine which permits the unlicensed use of protected works in certain circumstances.⁷⁰ Perhaps most importantly, AI-generated works may profoundly change the infringement analysis, including in ways that may solve for the Troll problem.

iii. AI-Generated Infringement

Copyright allows a right holder to prevent third parties from, among other things, reproducing a copyrighted work without permission.⁷¹ This requires a right holder to prove both that an infringer copied a protected work, and that there is substantial similarity between the protected and infringing work.⁷² Therefore, if a work is not actually copied from another work, regardless of how similar the works are, there is no infringement.⁷³ In other words, “independent creation” is a defense to infringement.⁷⁴

As a practical matter, it is often difficult to directly prove copying occurred, because whether the infringer copied may be a fact known only to the infringer—and human infringers have reasons to be less than fully forthcoming. As a result, a right holder is allowed to indirectly prove copying by showing similarities between works that are unlikely to exist if they had been independently made.⁷⁵ An inference of copying can

⁶⁹ Such practices are associated with the pejorative term “Copyright Troll”, Matthew Sag and Jake Haskell, *Defense Against the Dark Arts of Copyright Trolling*, 103 Iowa L. Rev. 571 (2018).

⁷⁰ See, e.g., *Google LLC v. Oracle America, Inc.*, 593 U.S. ____ (2021).

⁷¹ *Feingold v. RageOn, Inc.*, 472 F. Supp. 3d 94, 98 (S.D.N.Y. 2020).

⁷² See *Transgo, Inc. v. Ajac Transmission Parts Corp.*, 768 F.2d 1001, 1018 (9th Cir. 1985); MELVILLE B. NIMMER & DAVID NIMMER, *NIMMER ON COPYRIGHT* § 13.03 (rev ed. 2022).

⁷³ See *Gray v. Hudson*, 28 F.4th 87, 96 (9th Cir. 2022).

⁷⁴ *Id.*

⁷⁵ E.g., *Feingold v. RageOn, Inc.*, 472 F. Supp. 3d 94, 98 (S.D.N.Y. 2020).

then be rebutted by presenting evidence of independent creation, for instance, that an alleged infringer could not possibly have had access to a protected work.⁷⁶

To take an extreme hypothetical, if an author wrote an exact copy of another author's bestselling novel but claimed she did so without ever having seen the bestseller, that could be a defense to infringement. However, the likelihood of two authors separately writing the exact same book is effectively zero.⁷⁷ The math involved is reminiscent of the infinite monkey theorem, which predicts that a room full of monkeys with typewriters will eventually reproduce by random chance all the books in the British Museum. While theoretically possible, if the monkeys need to type the word "banana" on typewriters with fifty keys, and if they press keys at random, and if each key has an equal chance of being pressed, the chance that the first six letters pressed spell banana is $(1/50)^6$ (one in fifteen trillion six hundred twenty-five billion). But more practically, the infinite monkey theorem effectively describes a brute force computational problem-solving method called the British Museum algorithm.⁷⁸ This refers to finding a solution by checking all possibilities one by one.⁷⁹ This has allowed AI to, among other things, completely solve the game of checkers—a game with "roughly 500 billion billion possible positions (5×10^{20})".⁸⁰

AI-generated works may alter the infringement analysis with respect to proving copying and independent creation. Proving copying may no longer be an issue if an AI's training data can be accessed (although this depends on the AI system).⁸¹ If the allegedly infringed work is not in the training data, that proves there was no copying because the work was never accessed.⁸² Also, even if an AI was trained on a protected work, the AI could be queried for the specific works that contributed to a particular output and answer the question of whether the AI-generated work involved actual copying in addition to access.⁸³ Thus, in the scenario where a Troll posts a billion works to the Internet, if it can be proven that an allegedly infringing AI-generated work came from a generative AI that was not trained on any of the Troll's works, or that the Troll's works were not directly used to generate the new work, there is no infringement.

For instance, a 2018 art installation, "All We'd Ever Need Is One Another", autonomously generates images by using two flatbed scanners facing one another that both project and reflect light.⁸⁴ AI generates mouse movements that randomize scanning

⁷⁶ *Repp v. Webber*, 132 F.3d 882, 889 (2d Cir. 1997)

⁷⁷ Svenja Lohner, *What Are the Chances?* SCIENTIFIC AMERICAN (Oct. 17, 2019), <https://www.scientificamerican.com/article/what-are-the-chances/>.

⁷⁸ A. Newell, et al, *Elements of a Theory of Human Problem Solving*, Psychological Review. American Psychological Association (1958), 65 (3): 151–166. doi:10.1037/h0048495.

⁷⁹ *Id.*

⁸⁰ Jonathan Schaeffer, et al., *Checkers is Solved.*, SCIENCE 317.5844 (2007): 1518-1522.

⁸¹ For example, this site allows anyone to "Search 5.8 billion images used to train popular AI art models". It includes the images from OpenAI and Stability AI training data which are often used as a base for other AI models. *Have I Been Trained?*, <https://haveibeen trained.com/?custom=1> (last visited Jan. 18, 2023).

⁸² *Id.*

⁸³ Neil Savage, *Breaking Into The Black Box Of Artificial Intelligence*, NATURE (Jan. 23, 2012), <https://www.nature.com/articles/d41586-022-00858-1> (discussing challenges associated with explainability of how AI output is generated).

⁸⁴ Adam Basanta, *All We'd Ever Need Is One Another*, (2018), <http://adambasanta.com/allwedeverneed>.

settings and begin the scanning process. AI is then further used to detect when a newly created image is sufficiently like an existing work of art, after which the AI-generated image is “validated as art” and uploaded to the Internet and social media together with the name of the original artwork it was validated against. The installation creates around 1,000 to 1,500 images a day, and 20 to 50 validated images. In August 2018, the creator of the installation, Adam Basanta, was sued in Quebec Superior Court for copyright infringement by artist Amel Chamandy.⁸⁵ One of the installation’s pieces matched with Chamandy’s 2009 photograph, “Your World Without Paper.”⁸⁶ Given the way the AI-generated images were made in this case, namely not from existing works, the fact a generated image happened to be similar to someone else’s existing image is not grounds for infringement (including under Canadian law).⁸⁷

This case was from several years ago—ancient history in the world of generative AI. As increasingly sophisticated AI comes to generate millions, billions, or trillions of images a day, independent creation is going to be a more prevalent phenomenon. This should lead to increased consumer choice, and likely a higher degree of fungibility between protected works. Taken to its extreme, in a decidedly futuristic scenario where very powerful AI systems can generate astronomical amounts of content, like the hypothetical monkeys recreating all the works of the British Museum, or at least certain sorts of works like every possible 100x100 pixel image,⁸⁸ this could fundamentally render copyright law obsolete in certain areas as any desired work could be independently created. -

Without considering all the ways that AI-generated works challenge existing copyright law doctrines, there will be clear impact on the fair use doctrine and the protection of style. For example, a series of lawsuits alleging copyright infringement were filed in 2022 and 2023 against companies marketing prominent generative AI systems.⁸⁹ One of these alleges that the use of copyrighted images to train generative AI constitutes copyright infringement, and also that AI-generated works created “in the style of” human artists are infringing derivative works.⁹⁰ Under US law, whether training AI on protected content is infringing likely depends on whether that activity, which generally

⁸⁵ Quebec Superior Court (Amel Chamandy / Galerie NuEdge Fine Arts v. Adam Basanta, 500-17-104564-185).

⁸⁶ *Randomly Generated Art Draws Copyright and Trademark Infringement Claims*, IPOS GOODE (Mar. 4, 2019), <https://www.iposgoode.ca/2019/04/randomly-generated-art-draws-copyright-and-trademark-infringement-claims/> (last visited Jan. 18, 2023). Chamandy sought \$40,000 CAN in damages, including for trademark infringement on a trademark she owns on her name. The suit eventually settled under undisclosed terms. Sarah Pimienta, *Artificial Intelligence Systems as Instruments of Human Innovation: The Case for Copyright Law Reform in Canada*, MCGILL UNIVERSITY (Apr. 5, 2022), <https://www.mcgill.ca/business-law/article/artificial-intelligence-systems-instruments-human-innovation-case-copyright-law-reform-canada> (last visited Jan. 18, 2023).

⁸⁷ See, e.g., *Cinar Corporation v. Robinson*, 2013 SCC 73, [2013] 3 S.C.R. 1168.

⁸⁸ Adrian Cooney, *Generating every image possible*, MEDIUM (June 25, 2013), https://medium.com/@adrian_cooney/generating-every-image-possible-21beed4789fe.

⁸⁹ Stable Diffusion litigation, JOSEPH SAVERI LAW FIRM & MATTHEW BUTTERICK (Jan. 13, 2023), <https://stablediffusionlitigation.com/>; GitHub Copilot litigation, JOSEPH SAVERI LAW FIRM & MATTHEW BUTTERICK (Nov. 10, 2022), <https://githubcopilotlitigation.com/>; <https://newsroom.gettyimages.com/en/getty-images/getty-images-statement>.

⁹⁰ *Anderson, et al. v. Stability AI, et al.*, Case 3:23-cv-00201 (N.D. Cal., Filed Jan. 13, 2023). Complaint available at: <https://stablediffusionlitigation.com/pdf/00201/1-1-stable-diffusion-complaint.pdf>, 1–2.

involves making many copies of training data, falls within the fair use exception to infringement.⁹¹ Internationally, an increasing number of jurisdictions have adopted statutory exceptions to copyright infringement for “text and data mining”, which narrowly refers to using protected content to generate insights, but can also refer more broadly to using protected content to train AI systems.⁹² An artist’s “style” is not generally protectable, although the term has a number of senses and there are some ways that style is protected under copyright law, but the extent to which style can be protected is an issue that is going to become more important to resolve given that generative AI makes it far easier to copy artist style.⁹³

D. AI Owners Are the Most Appropriate Default Copyright Owners

Regardless of authorship, an AI cannot own copyright or any type of property because it is not a person—legal or artificial.⁹⁴ While the law could change to accommodate some form of legal personality for AI,⁹⁵ it still would not be an optimal, or even terribly sensible, way to structure rights. Among other things, an AI would not be motivated to create or disseminate works by the prospect of financial gain.

By contrast, people tend to be motivated by the prospect of financial gain. A variety of stakeholders in the AI-generated work ecosystem are potential right holder candidates, including an AI user, owner, or programmer. In some cases, the user, owner, and programmer may be the same person, or it may be that “the” programmer is a collection of people spread over time and space. Numerous scholars have considered the most appropriate right holder for copyright in AI-generated works.⁹⁶ Some courts have also

⁹¹ As the complaint in *J. Doe, et al. v. GitHub, Inc., et al.*, Case No. 3:22-cv-06823 (N.D. Cal., Filed Nov. 3, 2022) notes, GitHub replied to complaints about copying by noting that, “[t]raining machine learning models on publicly available data is considered fair use across the machine learning community.” Complaint, P84. The complaint argues that, “regardless of this concept’s level of acceptance in ‘the machine learning community,’ under Federal law, it is illegal.” *Id.*

⁹² *Artificial Intelligence and Intellectual Property: Copyright and Patents: Government Response to Consultation*, GOV.UK (June 28, 2022), <https://www.gov.uk/government/consultations/artificial-intelligence-and-ip-copyright-and-patents/outcome/artificial-intelligence-and-intellectual-property-copyright-and-patents-government-response-to-consultation>. (noting “TDM is used for training AI systems, amongst other uses). However, in February 2023, Minister George Freeman, responsible for intellectual property, told the House of Commons that the government would not move forward with the text and data mining (TDM) exception as planned without a deeper consultation, citing concerns voiced by creative industries. Rory O’Neill, *UK government bins UKIPO’s flagship AI reforms*, Managing Intellectual Property (Feb. 3, 2023), <https://www.managingip.com/article/2b8dy58efmhbbvsmxvk0/uk-government-bins-ukipos-flagship-ai-reforms>.

⁹³ See, O’Connor, Seán M., *AI Replication of Musical Styles Points the Way to An Exclusive Rights Regime*, Research Handbook on Intellectual Property and Artificial Intelligence, Ryan Abbott ed. (Edward Elgar 2022).

⁹⁴ See, e.g., Lawrence B. Solum, *Legal Personhood for Artificial Intelligences*, 70 N.C. L. Rev. 1231 (1992).

⁹⁵ For example, an autonomous vehicle (AV) could require legal personality to hold an insurance policy to compensate accident victims. Still, AVs are commercial products, and it works out better across the board to have AV manufacturers liable for accidents. See generally, RYAN ABBOTT, *THE REASONABLE ROBOT*, Ch 4. (2020) But legal personality for AI is the subject of a blossoming field of literature. See, e.g., DAVID J. GUNKEL, *ROBOT RIGHTS* (2018).

⁹⁶ For instance, Professor Samuelson considered this question in 1986, noting that, “[t]here are at least five ownership allocation possibilities: one might decide to allocate intellectual property interests in the output to the computer, the user, the author of the generator program, both jointly, or no one... The

weighed in on the most appropriate right holder for AI-assisted works involving a variety of human contributors.⁹⁷ However, the AI owner is the most appropriate default for copyright ownership, for both legal and policy reasons.

It is often the case that someone other than a work's author owns its copyright.⁹⁸ Authors can transfer their rights to third parties, and rights may transfer automatically.⁹⁹ Rights may also vest directly in parties other than an author. For example, under WMFH, employers generally own works made by employees within the scope of their employment.¹⁰⁰ The same applies to certain works made outside of the employment context.¹⁰¹

The Copyright Act does not explicitly provide rules for allocating ownership in AI-generated works. However, it also does not prohibit ownership by virtue of common law rules of entitlement.¹⁰² It is generally the case that where property creates additional property, the owner of the original property is entitled to the subsequent property.¹⁰³ This rule, sometimes referred to as *accession*, applies in a variety of contexts.¹⁰⁴ If a person owns a cow that births a calf, the cow's owner becomes calf's owner.¹⁰⁵ If a person owns a fruit tree that bears fruit, the tree's owner owns the fruit. The tree owner derives title to the fruit through the tree, but this does not require the tree to execute a written document that transfers title to the fruit—the title to the fruit automatically transfers or initially vests in the tree's owner by virtue of her relationship to the fruit tree.¹⁰⁶

If an AI makes a piece of physical property, such as a 3D printer making a painting, the AI's owner would own that painting. There is no reason why someone should be any less entitled to digital art made by an AI. To the contrary, the intangible nature of digital

Article concludes that, in general, the user of a computer generator program should be considered the author of a computer generated work, and should be free to exploit this product commercially." Pamela Samuelson, *Allocating Ownership Rights in CGWs*, 47 U. PITT. L. REV. 1185, 1190, 1192 (1986). See Ginsburg and Budiardjo, *supra* note **Error! Bookmark not defined.**

⁹⁷ See, e.g., *Midway Mfg. Co. v. Artic Intern., Inc.*, 547 F. Supp. 999, 1007 (N.D. Ill. 1982); *Rearden LLC v. Walt Disney Co.*, 293 F. Supp. 3d 963, 969 (N.D. Cal. 2018); *Torah Soft Ltd. v. Drosnin*, 136 F. Supp. 2d 276, 283 (S.D.N.Y. 2001).

⁹⁸ Copyright in a work "vests initially in the author or authors of the work." 17 USC § 201(a).

⁹⁹ "The ownership of a copyright may be transferred in whole or in part by any means of conveyance or operation of law..." 17 USC § 201(d)1.

¹⁰⁰ "In the case of a work made for hire, the employer or other person for whom the work was prepared is considered an author for the purposes of this title, and unless the parties have expressly agreed otherwise in a written instrument signed by them, owns all rights comprised in the copyright." 17 USC § 201(b).

¹⁰¹ *Id.*

¹⁰² For instance, copyright can be transfers by any operation of law, such as might occur without an author's consent in the event the author has passed away, or as part of a bankruptcy proceeding.

¹⁰³ See Thomas W. Merrill, *Accession and Original Ownership*, J. LEGAL ANALYSIS, 459-505 (2009).

¹⁰⁴ *Id.*

¹⁰⁵ "The general rule, in the absence of an agreement to the contrary, is that the offspring or increase of tame or domestic animals belongs to the owner of the dam or mother." *Carruth v. Easterling*, 150 So.2d 852 (Miss. 1963).

¹⁰⁶ In some cases, third parties may have conflicting entitlement claims, such as a party picking fruit, but these are entitlement disputes that courts are familiar with resolving based on underlying principles of property law. See, e.g., *Franklin v. Giddins* [1978] Qd R 72.

art makes protection more important because it is more easily copied than a physical painting.

First possession could also entitle an AI owner to copyright. “[T]he common and civil law (both of which accept the desirability of private ownership) have responded with the proposition that the taking possession of unowned things is the only possible way to acquire ownership of them.”¹⁰⁷ The rule of first possession is simple, but like accession, foundational to functioning systems of private property. If an AI makes a piece of property, and if no other party is entitled to ownership by virtue of their relationship to the AI, then copyright in a work is unowned property that goes to the first party to take possession of the work.¹⁰⁸

An AI owner might also be entitled to copyright if an AI-generated work is considered a WMFH.¹⁰⁹ This requires either an employment relationship or a written instrument signed by an independent contractor.¹¹⁰ An AI cannot execute a contract, and it is not an employee in the sense of labor laws, but it could be treated as an employee for the limited purpose of the WMFH doctrine.¹¹¹ The Supreme Court, in *Community for Creative Non-Violence v. Reid*, identified factors that characterize an employment relationship under agency law.¹¹² Those factors, including the employer’s control over the work, control over the employee, and the status and conduct of an employee, all weigh in favor of AI-generated works being treated as a WMFH. AIs are controlled, operated at someone’s direction, and are even owned as property. The central concern

¹⁰⁷ Richard A. Epstein, *Possession as the Root of Title*, 13 GA. L. REV. 1221, 1222 (1979).

¹⁰⁸ In practice, a user might be more likely to first possess a work than the owner of an AI, but that could be dealt with by contract as discussed further below. Paul Goldstein, *Copyright: Principles, Law and Practice* (1989) at 73.

¹⁰⁹ 17 U.S.C. § 201(b).

¹¹⁰ *Id.* The writing requirement is relatively new and was not part of the 1909 Copyright Act which simply included employment as one example of a work for hire. Anne Marie Hill, *Work for Hire Definition in the Copyright Act of 1976: Conflict Over Specially Ordered or Commissioned Works*, 74 CORNELL L. REV. 559 (1989).

¹¹¹ Someone can be an employee under the WFH doctrine without being an employee under labor laws. *See* *Horror, Inc. v. Miller*, 15 F.4th 232, 244-47 (2d Cir. 2021).

¹¹² The Restatement (Second) of Agency, to which the Court looks for guidance in explicating the general common law of agency regarding classification as an employee, states that control or the right to control the work being produced is “in many situations is determinative.” *Community for Creative Non-Violence v. Reid*, 490 U.S. 730 (1989). In 1989, the Supreme Court wrote in *Community for Creative Non-Violence v. Reid*, that central to the resolution of this inquiry of whether a party is engaged as an employee or independent contractor is “the hiring party’s right to control the *manner and means* by which the product is accomplished.” *Id.* This case marked a shift from the actual control required under the Restatement and prior cases to a factor-based assessment. “We turn, finally, to an application of section 101 to *Reid*’s production of [the Nativity sculpture.] In determining whether a hired party is an employee under the general common law of agency, we consider the hiring party’s right to control the manner and means by which the product is accomplished. Among the other factors relevant to this inquiry are the skill required; the source of the instrumentalities and tools; the location of the work; the duration of the relationship between the parties; whether the hiring party has the right to assign additional projects to the hired party; the extent of the hired party’s discretion over when and how long to work; the method of payment; the hired party’s role in hiring and paying assistants; whether the work is part of the regular business of the hiring party; whether the hiring party is in business; the provision of employee benefits; and the tax treatment of the hired party.” *See*, Restatement [(Second) of Agency] section 220(2) (setting forth a non-exhaustive list of factors relevant to determining whether a hired party is an employee). No one of these factors is determinative. *Community for Creative Non-Violence v. Reid*, 490 U.S. 730 (1989).

with over-application of the WMFH doctrine is that it has the potential to exploit human authors.¹¹³ Employers might acquire copyrights not contemplated at the time of contracting and which would not be reflected in the agreed-upon price for employment or a work. However, where an author is an AI that has no legal rights, there can be no concern about exploitation.

Beyond the legal justification for AI owners being default copyright holders, they are the most appropriate copyright owners for policy reasons. Having owners as right holders encourages investments in developing AI systems, and it encourages owners to license their AI systems. All of which should result in the further creation and dissemination of works.

Ultimately, the specific default owner is less important than ensuring well-defined property rights. That is because copyright is transferable, and so where the user, programmer, and owner are different parties, these parties can contract amongst themselves to an optimal outcome.¹¹⁴ That is particularly likely to occur in advance where the prospect of copyright is an important incentive to a work being created or to a collaboration taking place.¹¹⁵

E. The Importance of Recognizing AI Authors

If AI-generated works are to be protected, this also raises the question of who, or what, should be designated as an author. By definition, in the case of an AI-generated work an AI user, programmer, or owner would not qualify as an author according to traditional criteria. Therefore, this either requires non-traditional criterion for human authorship, no authorship requirement, or AI authorship.¹¹⁶ Some of these options could require an amendment to the Copyright Act.

For example, the Copyright Act could be amended to state that in the case of an AI-generated work, the AI user is deemed the author. This has the advantage of ensuring protection and a clear allocation of rights, although it allows someone to claim authorship for merely asking an AI to generate something creative. That is not unfair to the AI of course, because the AI has no interest in taking credit for the work, but it is unfair to other human artists because it changes the meaning of authorship. It equates legitimate human creativity with someone simply instructing a computer. If someone claimed authorship of every artwork generated by Dall·E 2, they would become the most prolific artist in history overnight. Of course, the WMFH doctrine makes an employer, whether an individual or a corporation, a legal author, even if all the work was done by an uncredited employee.¹¹⁷

¹¹³ See, e.g., Anne Marie Hill, *Work for Hire Definition in the Copyright Act of 1976: Conflict Over Specially Ordered or Commissioned Works*, 74 Cornell L. Rev. 559, 569 (1989).

¹¹⁴ See WM Schuster, *Artificial Intelligence and Patent Ownership*, 75 WASH. & LEE L. REV. 1945 (2018) (employing “Coase Theorem and its corollaries to determine appropriate ownership of patents on AI-generated inventions).

¹¹⁵ *Id.*

¹¹⁶ Corporate authorship is another option, already available in the case of works for hire, but not every production of an AI-generated invention will involve a corporation.

¹¹⁷ 17 U.S.C. §201(b)

AI-generated works could also be authorless. For example, the Copyright Act allows works to be registered anonymously or pseudonymously, although only for works created by a natural person and not for WMFH.¹¹⁸ Similarly, an applicant could register an AI-generated work with no author listed and an explanation of the basis on which they claim entitlement. This has the advantage of avoiding dilution of human authorship, but not designating an author may prove problematic to entitlement. If an AI is being used by a third party to generate a work, the rightful copyright owner may have no way to know the provenance of the work unless the AI is disclosed in a registration or in litigation. Indeed, for essentially this reason, the USCO encourages applicants to provide an author's name rather than to register a work anonymously, noting that it creates a clear record of authorship and ownership of the copyright.¹¹⁹

Finally, the factual author, the AI, could be listed as the legal author—with some surprising benefits. Listing the AI promotes transparency and appropriate entitlement. It not only accurately reports authorship, because the AI is functionally doing the work of a traditional author, but it also allows the various stakeholders involved with the AI to have a clear record of a work's origins. This allows stakeholders to claim and enforce their rights more appropriately.

Recognizing AI authors also helps to preserve a human-centric vision of authorship. Allowing transparent designation of authorship allows the public to understand how works were created. It also benefits policymakers as they struggle with issues related to AI-generated works. One of the best ways to track information on the prevalence of AI-generated works is to allow these works to be registered with AI authors.

AI authorship has a final advantage in that, depending on the outcome of *Thaler v. Perlmutter*, it may already be permitted under the Copyright Act. There is no case law holding that an AI cannot be an author, and only dicta supporting the Human Authorship Requirement—much of which dates to before the development of AI. Given that AI authorship would promote the purpose of the Copyright Act, a court employing a purposive approach to statutory interpretation should conclude that it is entirely permissible. Indeed, the Supreme Court has a long history of interpreting the terms “writings” and “authors” purposively, and not “in their narrow literal sense but, rather, with the reach necessary to reflect the broad scope of constitutional principles.”¹²⁰ That is particularly important in the case of the Copyright Act, which was designed to accommodate technological advances.¹²¹

F. Concluding Thoughts

Our discomfort with the notion of computer-“authored” works (even if we cannot articulate a principled reason for the discomfort) is in keeping with

¹¹⁸ 17 U.S.C. § 409(2).

¹¹⁹ COMPENDIUM (THIRD) § 615.1(B).

¹²⁰ *Goldstein v. California*, 412 U.S. 546, 561 (1973).

¹²¹ “When technological change has rendered its literal terms ambiguous, the Copyright Act must be construed in light of its basic purpose.” *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975).

a recurring phenomenon in the development of copyright law. In every age, a new technology has appeared about which people have expressed fear and concern, claiming that it defies the boundaries of the existing legal system. With respect to copyright, these claims were made about photographs, motion pictures, sound recordings, radio, television, and other telecommunications. In each case, the copyright system has managed over time to incorporate the new medium of expression into the existing framework. Most recent of the upstart new technology has been assumed by computers. For a while the computers-and-copyright battlefield was centered on the copyrightability of computer programs as literary works. That contest now has been largely fought and resolved in favor of copyrightability. It may be that the next battle will be over copyrightability of computer-generated works.¹²²

Professor Arthur Miller, 1991

Technological evolution is often an impetus for reevaluation of copyright law.¹²³ AI is now generating creative works in a major way, and these works have value to consumers. Today, AI-generated art is making a splash on the Internet. Tomorrow, AI-generated music will be playing on the radio and people will be drawing insights from AI-generated literature. The relentless improvement of AI means that people will increasingly have access to a wealth of useful content. The unique characteristics of generative AI, including the self-improving nature of AI models and the difficulties associated with attributing their outputs to human creators, challenges the existing framework and necessitates a thorough rethinking of what rules will result in the greatest social value. Encouraging the creation and dissemination of such content is the main purpose of the copyright system and allowing copyright protection for AI-generated works will achieve this purpose. Once the desirability of protecting these works is acknowledged, acknowledging AI authorship then becomes nothing more than opting for reality instead of elaborate legal fictions.

Respectfully Submitted,



¹²² Arthur Miller, *Computers and Authorship: The Copyrightability of Computer-Generated Works*, WIPO WORLDWIDE SYMPOSIUM ON THE INTELLECTUAL PROPERTY ASPECTS OF ARTIFICIAL INTELLIGENCE (1991), https://www.wipo.int/edocs/pubdocs/en/wipo_pub_698.pdf, at 245-246.

¹²³ See Brad A Greenberg, *Rethinking Technology Neutrality*, 100 MINN. L. REV. 1495 (2015); *The Evolution of Copyright Law*, U.S. COPYRIGHT OFFICE, copyright.gov/history/copyright-exhibit/evolution/ (last visited Jan. 18, 2023). Noting that “[c]opyright has evolved since the first federal copyright law that protected just books, charts, and maps. Over time, the law has expanded to include broad categories encompassing a wide range of works, such as literary works, music and sound recordings, dramatic works, choreography and pantomimes, visual art works, audiovisual works, and architectural works.”