



COPYRIGHT PROTECTION FOR WORKS GENERATED BY ARTIFICIAL INTELLIGENCE



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By Ryan Abbott & Elizabeth Rothman

This article argues that AI-generated works should receive copyright protection because they are precisely the sort of things designed to be protected. Copyright law, while often framed in terms of benefiting authors, has primarily broader and more utilitarian social goals: promoting the generation and dissemination of works. While critics are of course correct that AI is not motivated to work by the prospect of copyright protection, that argument is a straw man. Rather than motivating machines directly, copyright protection will motivate people upstream of the creative act to use and develop AI that will result in more production and dissemination of works.

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01

INTRODUCTION

The role of artificial intelligence (“AI”) in the creative economy has changed dramatically. Due to advances in computing power and software designs, as well as the growth of big data useful for training machine learning-based algorithms, AI has evolved from assisting to automating the creative process. Moreover, AI is now stepping into the shoes of content generators and creating valuable original content in a commercially relevant way. Before the end of the decade, a significant amount of art, literature, news stories, music, software, and web content will likely be AI-generated.

This technological evolution will result in seismic social and economic impact. It will prove equally disruptive to the law, including in the field of intellectual property (“IP”). AI behaving like a person raises numerous challenges in all areas of IP; and with copyright, it has now become critically important to resolve how legally to treat creative work made by a machine: can an AI-generated work receive copyright protection? Who would own the copyright? Who, or what, would be the author? Is it copyright infringement to use protected works to train algorithms or to create AI-generated works?

These questions have been explored in academic literature for decades. Most commentators believe that AI-generated works should not receive protection, either for moral reasons — because AI-generated works are not the right sort of thing to protect — or for economic ones — because AI does not respond to financial incentives to create output, because protection is unnecessary for other reasons, or because there are greater costs associated with protection. More practically, the U.S. Copyright Office (“USCO”) has implemented a “Human Authorship Requirement” since at least 1973 that has prohibited the registration of copyright for AI-generated works.² While the Copyright Act does not explicitly state that an author must be a human being, or that human creativity is a requirement for copyright, there is a long history of jurisprudence framing creativity in human-centric terms.³ There is no case law, at least in the United States, involving copyright protection of

an AI-generated work.⁴ Although, it should be noted that other types of artificial authors — artificial persons largely in the form of corporations and sovereign nations — have qualified as authors under the Copyright Act for over a century.⁵

This Article argues that AI-generated works should receive copyright protection because they are precisely the sort of things designed to be protected. Copyright law, while often framed in terms of benefiting authors, has primarily broader and more utilitarian social goals: promoting the generation and dissemination of works. While critics are of course correct that AI is not motivated to work by the prospect of copyright protection, that argument is a straw man. Rather than motivating machines directly, copyright protection will motivate people upstream of the creative act to use and develop AI that will result in more production and dissemination of works.

02

AI-GENERATED WORKS AND COPYRIGHT LAW

Despite years of academic commentary on the protectability of AI-generated works, until very recently, there has never been a case in the United States either alleging copyright infringement of an AI-generated work or challenging the Copyright Office’s Human Authorship Requirement. There are a few possible reasons for this. It may be that copyright applicants obtained registrations without disclosing their works were AI-generated, and litigants may have prosecuted claims without the origins of their works coming to light. Perhaps more likely, the lack of case law is due to AI-generated works having lacked value.

*Thaler v. Perlmutter*⁶ is part of the Artificial Inventor Project led by Ryan Abbott, one of this Article’s coauthors.⁷ In 2019, the Copyright Office refused to register an AI-generated 2D artwork — *A Recent Entrance to Paradise* — created by an

2 U.S. COPYRIGHT OFF., COMPENDIUM (FIRST) OF U.S. COPYRIGHT OFFICE PRACTICES §§ 2-287, 2-290 (1973) [hereinafter COMPENDIUM (FIRST)].

3 U.S. COPYRIGHT OFF., COMPENDIUM (THIRD) OF U.S. COPYRIGHT OFFICE PRACTICES § 306 (2021) [hereinafter COMPENDIUM (THIRD)].

4 Letter from U.S. Copyright Rev. Bd., U.S. Copyright Off., to Ryan Abbott, Esq., Couns. For Dr. Stephen Thaler (Feb. 14, 2022), <https://www.copyright.gov/rulings-filings/review-board/docs/a-recent-entrance-to-paradise.pdf>.

5 See Copyright Act, ch. 320, § 8, 35 Stat. 1075, 1077 (1909) (current version at 17 U.S.C. § 304).

6 No. 1:22-cv-01564, 2023 WL 5333236 (D.D.C. Aug. 18, 2023).

7 *Patents and Applications*, ARTIFICIAL INVENTOR PROJECT, <https://artificialinventor.com/patent-applications/>.

AI named the Creativity Machine.⁸ The applicant, Stephen Thaler, applied to register the work as its owner because he is the owner, user, and developer of the Creativity Machine.⁹ After the work was rejected, Thaler filed two requests for reconsideration appealing the refusal, and, on February 14, 2022, the Copyright Office finally affirmed the rejection in a final agency action. The main justification for the denial of registration was that the work lacked a human author. The Review Board concluded, “[H]uman authorship is a prerequisite to copyright protection in the United States and . . . the Work therefore cannot be registered.”¹⁰ In June 2022, Thaler sued the Copyright Office in federal court to compel the registration of the work with the Creativity Machine listed as the author and with Thaler as the owner of the copyright.¹¹

While this copyright case was ongoing, independent applicants had been testing the system by attempting to register works created using text-to-image generators. One artist, Kristina Kashtanova, registered a comic book called *Zarya of the Dawn*, with images created using the generative AI system Midjourney. The USCO initially registered the work on September 15, 2022.¹² However the USCO subsequently contacted them asking for details about the use of AI in the creation of the work and notified them that the Office was considering cancelling the registration. On February 21, 2023, the USCO announced “We conclude that Ms. Kashtanova is the author of the Work’s text as well as the selection, coordination, and arrangement of the Work’s written and visual elements. That authorship is protected by copyright. However, as discussed below, the images in the Work that were generated by the Midjourney technology are not the product of human authorship.”¹³

Following the decision on the registration of *Zarya of the Dawn*, on March 16, 2023, the USCO released “Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence.”¹⁴ It states, “If a work’s tradi-

tional elements of authorship were produced by a machine, the work lacks human authorship and the Office will not register it.”¹⁵ With respect to the use of prompts:

For example, when an AI technology receives solely a prompt from a human and produces complex written, visual, or musical works in response, the “traditional elements of authorship” are determined and executed by the technology — not the human user. . . . When an AI technology determines the expressive elements of its output, the generated material is not the product of human authorship. As a result, that material is not protected by copyright and must be disclaimed in a registration application.¹⁶

The USCO has further clarified that the obligation to disclose AI-generated elements rests on whether the material in the work generated by AI is appreciable or de minimis. The standard for ascertaining what is appreciable is: “Would that content be copyrightable if created by a human author?”¹⁷

“While this copyright case was ongoing, independent applicants had been testing the system by attempting to register works created using text-to-image generators”

On August 18, 2023, after cross motions for summary judgment were filed in *Thaler v. Perlmutter*, the court granted the Copyright Office’s request for summary judgment on the

8 Letter from U.S. Copyright Rev. Bd. to Ryan Abbott, *supra* note 4.

9 *Thaler*, 2023 WL 5333236, at *1; *Stephen L. Thaler, Ph.D., IMAGINATION ENGINES*, www.imagination-engines.com/founder.html.

10 Letter from U.S. Copyright Rev. Bd. to Ryan Abbott, *supra* note 4.

11 *Thaler*, 2023 WL 5333236, at *1.

12 U.S. COPYRIGHT OFF., REGISTRATION RECORD VAU001480196 (2022), <https://publicrecords.copyright.gov/detailed-record/34309499>.

13 Letter from Robert Kasunie, Assoc. Reg. of Copyrights, U.S. Copyright Off., to Van Lindberg, Esq., Couns. for Kristina Kashtanova (Feb. 21, 2023), <https://www.copyright.gov/docs/zarya-of-the-dawn.pdf>.

14 Copyright Registration Guidance, 88 Fed. Reg. at 16190.

15 Copyright Registration Guidance, 88 Fed. Reg. at 16192.

16 *Id.*

17 *Id.*

grounds that “[h]uman authorship is a bedrock requirement of copyright.”¹⁸ Judge Beryl A. Howell, citing *Goldstein v. California*, acknowledged that the “Plaintiff correctly observes that throughout its long history, copyright law has proven malleable enough to cover works created with or involving technologies developed long after traditional media of writings memorialized on paper.”¹⁹ However, Judge Howell declined to extend protection to works created autonomously by AI, stating:

Copyright is designed to adapt with the times. Underlying that adaptability, however, has been a consistent understanding that human creativity is the sine qua non at the core of copyrightability, even as that human creativity is channeled through new tools or into new media. . . . Non-human actors need no incentivization with the promise of exclusive rights under United States law, and copyright was therefore not designed to reach them. The understanding that ‘authorship’ is synonymous with human creation has persisted even as the copyright law has otherwise evolved.²⁰

The case is currently under appeal with the U.S. Court of Appeals for the D.C. Circuit.

03 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 the possible problems with lack of protection and the alternatives to protection. With human-generated works, there are numerous benefits associated with copyright protection. As discussed earlier, these break down broadly into (1) economic incentives, namely

encouraging the production and dissemination of works, and (2) protection of author moral rights.

There are also costs associated with copyright protection. Copyright allows right holders to prevent others from making or using protected works. It can thus be used to prevent the production and distribution of works because right holders can elect not to make, sell, or license their works while also preventing others from doing so. Where right holders 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 infringing and derivative works (such as fan fiction). 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.

Even for human-generated works, stakeholders disagree on the appropriate level of protection. 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.”²¹

Protecting AI-Generated Works and Objections

The history and purpose of the Constitution and the Copyright Act both weigh in favor protecting 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. 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, require significant investments of time and money.

Failing to provide protection also requires producers and distributors of works — at least those for whom copyright is a meaningful incentive such as movie and music studios — to use human authors even if they are less efficient.

1. Human Exceptionalism

The argument against protecting AI-generated works on the basis of human exceptionalism comes in several forms. The

¹⁸ *Thaler v. Perlmutter*, No. 1:22-cv-01564, 2023 WL 5333236, at *4, 7 (D.D.C. Aug. 18, 2023).

¹⁹ *Id.* at 3.

²⁰ *Id.*

²¹ H.R. REP. NO. 60-2222, at 7 (1909).

first version is that human creativity is functionally exceptional — in other words, that an AI cannot autonomously generate an original work. The basic argument continues to be made, the goal post having shifted, that while AI can make mediocre art, it cannot make great art. But regardless of its veracity, it is not relevant for copyright law, which does not concern itself with greatness.

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 way a person does so is fundamentally different from the way an AI does so.²² There are at least three problems with this argument. First, there is no scientific, or even philosophical, consensus on the nature of creativity. 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. 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 AIs operate. 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. That is 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.²³ 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.²⁴ 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.²⁵

2. 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. Once a creative AI like Dall-E 2 exists, the marginal cost of having it create additional works may be close to zero.

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 such as 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. 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) employment and (2) property distribution. The technological unemployment concern arises from the idea that if AI can produce certain types of work faster and cheaper than human creatives, the demand for human labor in those areas will decrease. It is essentially a more specific version of the automation scare — the concern that automation will result in wide-spread unemployment.

The distributional concern is that large corporations may be more likely than small and medium enterprises (SMEs) to have the resources necessary to develop and use generative AI effectively, resulting 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.

“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”

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

²² Alan M. Turing, *Computing Machinery and Intelligence*, 59 *MIND* 433, 443 (1950).

²³ Carys J. Craig & Ian R. Kerr, *The Death of the AI Author*, 52 *OTTAWA L. REV.* 31, 44 (2020).

²⁴ *Id.* at 43–44.

²⁵ See U.S. CONST. art. 1, § 1, cl. 8; KEVIN J. HICKEY, CONG. RSCH. SERV., *COPYRIGHT LAW: AN INTRODUCTION AND ISSUES FOR CONGRESS* (2023), <https://crsreports.congress.gov/product/pdf/IF/IF12339>.

(perhaps even at the expense of those with lower socioeconomic status), the solution is a more progressive tax system rather than the impediment of technological progress.²⁶

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.

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.²⁷ Perhaps most importantly, AI-generated works may profoundly change the infringement analysis, including in ways that may solve the troll problem.

B. 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 requires either non-traditional criteria for human authorship, no authorship requirement, or AI authorship. Some of these options could require an amendment to the Copyright Act.

“If AI-generated works are to be protected, this also raises the question of who, or what, should be designated as an author”

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 Works Made for Hire (“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.²⁸

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.²⁹ 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 the authorship and ownership of the copyright.

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

²⁶ See generally Abbott & Bogenschneider, *supra* note 128 (noting how businesses receive incentives to automate, and arguing in favor of decreasing taxes on human labor to level the playing field for automation).

²⁷ See e.g. *Google LLC v. Oracle America, Inc.*, 141 S. Ct. 1183, 1196 (2021) (applying the fair use doctrine when copyright would “stifle the very creativity which that law is designed to foster”).

²⁸ 17 U.S.C. § 201(b).

²⁹ 17 U.S.C. § 409(3).

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, 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.”³⁰ That is particularly important in the case of the Copyright Act, which was designed to accommodate technological advances.³¹

“*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*”

04

CONCLUDING THOUGHTS

Technological evolution is often an impetus for reevaluation of copyright law. 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. ■

³⁰ See *Goldstein v. California*, 412 U.S. 546, 561 (1973).

³¹ *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975) (“When technological change has rendered its literal terms ambiguous, the Copyright Act must be construed in light of its basic purpose.”).

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