

The Future is Now: Copyright Protection for Works Created by Artificial Intelligence

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Introduction

Currently, under US copyright law, copyright protection is granted to original works of authorship fixed in a tangible medium of expression. However, it is not clear whether AI-generated works qualify for copyright protection.

One argument in favor of granting copyright protection to AI-generated works is that such works involve creative input from the AI system, and the output is the result of complex algorithms and programming. Therefore, it could be argued that the AI system is the author of the work and should be entitled to copyright protection. On the other hand, some argue that copyright protection should only be granted to human authors who have made a significant contribution to the work. They believe that copyright law should not extend to machines, as this could create legal and ethical issues around ownership and accountability.

It is worth noting that some countries, such as the UK and Japan, have already started to recognize AI-generated works for copyright protection. In the US, there is no specific legislation on this issue yet, and the question of whether AI should be granted copyright protection is still up for debate.

Overall, the issue of granting copyright protection to AI-generated works is complex and raises important legal and ethical

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questions. As AI technology continues to evolve, it will be interesting to see how lawmakers and courts grapple with this issue.

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The four paragraphs above were not written by the author of this article; nor were they written by any human author. Instead, they were written by ChatGPT within less than five seconds in response to the following request: “should AI be given copyright protection under US law?”¹

Creativity was once considered a primarily, if not exclusively, human endeavor. People create art, literature, and music, while machines handle mechanical tasks, like a typewriter or camera. The world has changed, and in the current year those changes are disrupting conventional ideas about authorship and creativity. Developments in the power and robustness of artificial intelligence (or AI) have made it possible for a wide array of creative AI-generated works to be created. Early developments, such as IBM Deep Blue’s mastery of the game of chess, were still somewhat mechanical in nature, as they were based on the computer analyzing vast numbers of games and moves in order to find the optimal result. But the development of machine learning has progressed to the point that AI can succeed at creative games (such as Go) and can create works normally thought to be only the province of human creativity. The Turing test—whether it is not possible to distinguish AI works from human-made content—has long been satisfied. Recent developments such as ChatGPT have moved the state of AI almost to the brink of matching human creativity.

A discussion of AI requires an awareness of its current state of rapid development and its potential for future expansion and growth. As Max Tegmark noted in 2017, a conversation “about the future of AI needs to continue, because it’s the most

1. CHATGPT, <https://chat.openai.com/chat/61e43e29-03bf-438d-a8e5-82a8f1702619> [<https://perma.cc/Z6EY-EAWX>] (copy of screenshot on file with author). The program began its response with the following disclaimer: “As an AI language model, I cannot give legal advice, but I can provide some information and perspectives on the topic.” *Id.*

important conversation of our time.”² This might have surprised some at the time, but it is now clear that AI will affect every aspect of our future: the nature of work and the automation of most tasks now performed by humans, the emergence of lethal autonomous weapon systems, and the ability to use AI to affect every aspect of our environment.³

The advent of Artificial General Intelligence (AGI)—the point at which AI reaches and then exceeds the level of human intelligence—is a possibility that requires analysis from a legal, ethical, and security standpoint. As Tegmark puts it, AGI involves the “[a]bility to accomplish any cognitive task at least as well as humans.”⁴ Experts do not agree on either the implications or the time frame in which AGI will become a reality.⁵ It is now clear that this timeline is not a long one. Beyond AGI is Superintelligence, which is “[g]eneral intelligence far beyond the human level.”⁶

AI is already handling ever increasingly complex cognitive functions and creative tasks. From rote memorization and data processing, to speech recognition and translation, to investing, to playing chess, Jeopardy, and Go, to writing news articles, to driving, we have already seen this level of progress, but the future will bring advances in management and social interaction, in programming and AI design, and in science and artistic creation.⁷ The success of AI in playing Go is illustrative. As Max Tegmark pointed out, “[b]ecause of its intuitive and creative aspects, Go is viewed more as one of the four ‘essential arts’ in ancient China, together with painting, calligraphy and *qin* music.”⁸

2. MAX TEGMARK, LIFE 3.0: BEING HUMAN IN THE AGE OF ARTIFICIAL INTELLIGENCE 37 (2017).

3. *Id.* at 38.

4. *Id.* at 39.

5. *Id.* at 30.

6. *Id.* at 39.

7. *Id.* at 53.

8. *Id.* at 88.

Thus, the Go world was stunned when AI was able to prevail against humans in this ancient game of creativity.⁹

The Go example is, however, just the tip of the technology iceberg. Other examples of current developments include:

- an AI program to write local news articles is being developed by Google, while Google’s Deep Mind software can create new musical works;
- a 3-D portrait entitled *The Next Rembrandt*, a new work of art created by a computer based on analysis of the artist’s work, was unveiled in 2016;
- a Japanese computer program wrote a short novel attained the second round of a national literary prize in 2016.¹⁰

The introduction of ChatGPT has brought this issue to the fore, as illustrated by the opening paragraphs of this article. That introduction could easily have been written by this author, yet it was not.

This article addresses two fundamental issues related to works created by AI: (1) are these works eligible for copyright protection as a work of authorship and (2) if so, who should be the owner of the rights to such a work? The law in this area is still developing, as most major copyright doctrines and provisions were developed before the possibility of AI-generated creative works was reasonably foreseeable.

With regard to the first question—whether works created by artificial intelligence should be eligible for copyright protection—the law is currently unsettled and divergent. The central aspect of this question is that AI developments increasingly involve the ability to make independent creative choices that are similar if not identical to those made by human authors. Current

9. *Id.* at 88–89.

10. See Andres Guadamuz, *Artificial Intelligence and Copyright*, WIPO MAG., Oct. 2017, https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html [<https://perma.cc/6ACP-CMK9>].

precedents from most jurisdictions indicate that only works created by human authors are eligible for copyright protection. In United States law, relevant case law includes *Naruto v. Slater*,¹¹ which held that an animal does not have statutory standing to assert a copyright claim for a “selfie” portrait taken by the monkey. Similarly, in the definitive Supreme Court decision in *Feist Publications v. Rural Telephone Service Company, Inc.*,¹² the Court indicated that “[o]riginality is a constitutional requirement. The source of Congress’ power to enact copyright laws is Article I, § 8, cl. 8, of the Constitution, which authorizes Congress to ‘secur[e] for limited Times to Authors . . . the exclusive Right to their respective Writings.’”¹³ The Court further noted that copyright protection is limited to “original intellectual conceptions of the author” that “are founded in the creative powers of the mind,” and that “[t]he writings which are to be protected are the *fruits of intellectual labor*.”¹⁴

In addition to this case law and constitutional framework, the U.S. Copyright Office in 2014 stated: “To qualify as a work of ‘authorship’ a work must be created by a human being. Works that do not satisfy this requirement are not copyrightable. The U.S. Copyright Office will not register works produced by nature, animals, or plants.”¹⁵

Other jurisdictions that have addressed analogous issues in a similar way include Australia, in *Acohs Proprietary Ltd. v. Ucorp Proprietary Ltd.*,¹⁶ which found that a computer-generated work was not protected by copyright because it was not produced by a human author.

On the other hand, a number of jurisdictions have found that a computer-generated work is eligible for protection and that the

11. 888 F.3d 418, 420, 426 (9th Cir. 2018).

12. 499 U.S. 340 (1991).

13. *Id.* at 346.

14. *Id.* (first quoting *Burrow-Giles Lithographic Co. v. Sarony*, 111 U. S. 53, 58 (1884); and then quoting *The Trade-Mark Cases*, 100 U. S. 82, 94 (1879)).

15. U.S. COPYRIGHT OFF., COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 313.2 (3d ed. 2021) (internal citation omitted).

16. (2012) 201 FCR 173, 57–59 (Austl.).

rights of authorship belong to the programmer or initiator of the creative process. In the United Kingdom, the Copyright, Designs and Patents Act 1988 (the CDPA), established a category of computer-generated works, that is, those generated by a computer “in circumstances such that there is no human author of the work.”¹⁷ Section 9(3) of the CDPA states that the author of a computer-generated literary, dramatic, musical or artistic work, “shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.”¹⁸

This article will make several proposals relevant to the copyrightability of AI-created works. First, it suggests that, in the short run, the approach that grants copyright protection to the programmer or initiator of the program seems to make sense given copyright policy, so long as the work otherwise satisfies the requirements of copyright protections—copyrightable subject matter, fixation, sufficient originality, and material that is not copied from a third party.¹⁹ This approach allows for the proper incentives for developers of AI technology and for those who might purchase such technologies in order to develop creative works. The copyright ownership should vest in the programmer if she continues to have ownership of the program or software that developed the creative work. If the programmer has transferred ownership of the particular copy of the software or program to someone else, that person has effectively acquired the creative engine of the AI program and should be able to claim ownership on creative works that this person or entity (the owner of the AI program) then initiated.

The long-run solution to AI-created works presents greater challenges. If the technology reaches the point of AGI, or what might be called superintelligence, then the ownership question should track the general legal or constitutional treatment of AGI or superintelligent entities. If the law of a particular nation generally recognizes the “personhood” of the AGI or superintelligent entity, then that entity should be entitled to equal treatment

17. Copyright, Designs and Patents Act 1988, c. 48, §178 (UK).

18. *Id.* § 9(3).

19. *See* 17. U.S.C. § 102.

as an author for purposes of copyright law. In some jurisdictions, this might require revision of either statutory or decisional copyright provisions, but it would square with the reassessment that would take place in the event these technological developments come to fruition.

I. U.S. Copyright Law & AI Works

On February 14, 2022, the three-person Copyright Review Board of the U.S. Copyright Office denied a Second Request for Reconsideration for Refusal to Register “A Recent Entrance to Paradise” (hereinafter “the AI Artwork”).²⁰ The AI Artwork is a two-dimensional image, reproduced below:



20. *See generally* U.S. Copyright Off., Copyright Rev. Bd., Opinion Letter on Second Request for Reconsideration for Refusal to Register A Recent Entrance to Paradise (Correspondence ID 1-3ZPC6C3; SR # 1-7100387071) (Feb. 14, 2022) [hereinafter “Board Refusal of Second Request”], <https://www.copyright.gov/rulings-filings/review-board/docs/a-recent-entrance-to-paradise.pdf> [<https://perma.cc/CL2L-E9KX>].

Steven Thaler filed an application to register a copyright claim in the AI Artwork on November 3, 2018.²¹ He identified the author of the work as the “Creativity Machine,” with Thaler listed as the claimant in a transfer statement based on ownership of the machine.²² In his application, Thaler left a note for the Office stating that the AI Artwork “was autonomously created by a computer algorithm running on a machine” and he was “seeking to register this computer-generated work as a work-for-hire to the owner of the Creativity Machine.”²³ On August 12, 2019, a Copyright Office registration specialist refused to register the claim, finding that it “lacks the human authorship necessary to support a copyright claim.”²⁴

Thaler then requested that the Copyright Office reconsider the refusal to register the AI Artwork, arguing that “the human authorship requirement is unconstitutional and unsupported by either statute or case law.”²⁵ The Office reviewed the arguments and again concluded that the AI Artwork “lacked the required human authorship necessary to sustain a claim in copyright,” because Thaler had “provided no evidence on sufficient creative input or intervention by a human author in the Work.”²⁶ The Office further indicated that it would not “abandon its longstanding interpretation of the Copyright Act, Supreme Court, and lower court judicial precedent that a work meets the legal and

21. *Id.* at 2.

22. *Id.*

23. *Id.* (quoting Thaler’s application to register a copyright claim (on file with U.S. Copyright Office)).

24. *Id.* (quoting Letter from Copyright Rev. Bd., U.S. Copyright Off., to Ryan Abbott Refusing Registration of Copyright (Aug. 12, 2019) (on file with U.S. Copyright Office)).

25. *Id.* (quoting Letter from Ryan Abbott to Copyright Rev. Bd., U.S. Copyright Off. 1 (Sept. 23, 2019) (on file with U.S. Copyright Office)).

26. *Id.* (quoting U.S. Copyright Off., Copyright Rev. Bd., Opinion Letter on Refusal of First Request for Reconsideration for Refusal to Register a Recent Entrance to Paradise 1 (March 30, 2020) [hereinafter Refusal of First Request] (on file with U.S. Copyright Office)).

formal requirements of copyright protection only if it is created by a human author.”²⁷

In his second request for reconsideration,²⁸ Thaler reiterated his argument that the “human authorship requirement is unconstitutional and unsupported by case law.”²⁹ The Second Request further states that the Copyright Office should register copyrights in machine-generated works as a matter of policy in order to “further the underlying goals of copyright law, including the constitutional rationale for copyright protection.”³⁰ Thaler also argued that “there is no binding authority that prohibits” such a copyright; that “copyright law already allows non-human entities to be authors under the work made for hire doctrine; and ultimately that the Copyright Office is currently relying upon non-binding judicial opinions from the Gilded Age to answer the question of whether [computer-generated works] can be protected.”³¹

In its refusal of Thaler’s second request, the Copyright Board relied heavily on the Compendium of the U.S. Copyright Office Practices,³² which states that copyright law “only protects ‘the fruits of intellectual labor’ that ‘are founded in the creative powers of the mind.’”³³ Moreover, because the statute requires “a work [to be] created by a human,” the Compendium provides

27. *Id.* (quoting Refusal of First Request, *supra* note 26, at 1–2).

28. *See* 37 C.F.R. § 202.5(c) (2022).

29. Board Refusal of Second Request, *supra* note 20, at 2 (“Now, in a second request for reconsideration, pursuant to 37 C.F.R. § 202.5(c), Thaler renews his arguments that the Office’s human authorship requirement is unconstitutional and unsupported by case law.” (citing Letter from Ryan Abbott to Copyright Rev. Bd., U.S. Copyright Off. (May 27, 2020) (on file with U.S. Copyright Office))).

30. *Id.* (quoting Letter from Ryan Abbott to Copyright Rev. Bd., U.S. Copyright Off. 2 (May 27, 2020) (on file with U.S. Copyright Office)).

31. *Id.* (quoting Letter from Ryan Abbott to Copyright Rev. Bd., U.S. Copyright Off. (May 27, 2020) (on file with U.S. Copyright Office) (internal citations omitted)).

32. *Id.* at 3.

33. U.S. COPYRIGHT OFF., COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 306 (3d ed. 2021) (quoting *Trade-Mark Cases*, 100 U.S. 82, 94 (1879)).

that the Office “will not register works produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author.”³⁴ So, the Board argued, Thaler must “either provide evidence that the Work is the product of human authorship or convince the Office to depart from a century of copyright jurisprudence.”³⁵ It is noteworthy to consider the sources for the Board’s decision. The Board acknowledged that Congress “purposely left undefined” the phrase “original work of authorship” and that “[t]he term is ‘very broad,’ but its scope is not unlimited.”³⁶

Importantly, many of the major Supreme Court cases cited by the Board do in fact make reference to human authors. In refusing Thaler’s request, however, the Board did not acknowledge that the decisions did not involve anything remotely similar to AI, and thus, the language in those cases is dicta. Put another way, none of the Supreme Court cases *anticipated* creative works developed by smart AI.

The first case cited by the Board is *Burrow-Giles Lithographic Co. v. Sarony*,³⁷ the classic case that addressed the argument that a photograph is merely “a reproduction on paper of the exact features of some natural object or of some person.”³⁸ As the Board noted:

The Court rejected this argument, holding that an author is “he to whom anything owes its origin; originator; maker; one who completes a work of science or literature” and that photographs are “representatives of original intellectual conceptions of [an] author.” In the opinion, the Court referred to “authors” as human.³⁹

34. *Id.* § 313.2.

35. Board Refusal of Second Request, *supra* note 20, at 3.

36. *Id.* (quoting H.R. REP. NO. 94-1476, at 51-52 (1976)) (internal citations omitted).

37. 111 U.S. 53 (1884).

38. *Id.* at 56.

39. Board Refusal of Second Request, *supra* note 19, at 4 (quoting *Burrow-Giles*, 111 U.S. at 57-59) (internal citations omitted). The Supreme

The Board then cited general language in *Mazer v. Stein*,⁴⁰ stating that a work “must be original, that is, the author’s tangible expression of his ideas.”⁴¹ Next, the Board cited *Goldstein v. California*,⁴² which repeats the *Burrow-Giles* proposition that “[w]hile an ‘author’ may be viewed as an individual who writes an original composition, the term, in its constitutional sense, has been construed to mean an ‘originator,’ ‘he to whom anything owes its origin.’”⁴³ Thus, the Board observed that it “is compelled to follow Supreme Court precedent, which makes human authorship an essential element of copyright protection.”⁴⁴ None of these cases actually stand for this proposition. Indeed, *Goldstein*, for example, in the sentence just prior to the one quoted by the Board, expressed a broad view of authorship: “These terms have not been construed in their narrow literal sense but, rather, with the reach necessary to reflect the broad scope of constitutional principles.”⁴⁵

The Board then cited a series of lower court decisions that do in fact state that a human author is required in order for a work to be copyrightable under U.S. law. These cases include *Urantia Foundation v. Maaherra*,⁴⁶ which involved works allegedly created by divine beings.⁴⁷ The court there stated that “it is not creations of divine beings that the copyright laws were intended to

Court in *Burrow-Giles* also described a copyright as “the exclusive right of a man to the production of his own genius or intellect” and found “instructive” an English case that stated an “author” was the “person who is . . . the cause of the picture which is produced.” *Burrow-Giles*, 111 U.S. at 58, 60–61 (emphasis added) (quoting *Nottage v. Jackson* [1883] 11 QBD 627 (Brett, MR)).

40. 347 U.S. 201 (1954).

41. *Id.* at 214.

42. 412 U.S. 546 (1973); see Board Refusal of Second Request, *supra* note 20, at 4 (quoting *id.* at 561).

43. *Goldstein*, 412 U.S. at 561 (quoting *Burrow-Giles*, 111 U.S. at 57–58).

44. Board Refusal of Second Request, *supra* note 20, at 4.

45. *Goldstein*, 412 U.S. at 561.

46. 114 F.3d 955 (9th Cir. 1997).

47. *See id.* at 957.

protect.”⁴⁸ Although this statement supports the Board’s view, it is in fact dictum, as the court ultimately found copyrightability in the selection and arrangement within the work.⁴⁹

The Board then cited the famous “monkey selfie” case, *Naruto v. Slater*,⁵⁰ which held that photographs taken by a Macaque monkey are not copyrightable.⁵¹ As support for this, the court cited references in the Copyright Act to “children,” “widow,” “grandchildren,” and “widower,”—terms that “all imply humanity and necessarily exclude animals.”⁵² This language, relevant, of course, to the inheritability of copyright ownership, seemingly does not rule out AI ownership. Moreover, it is certainly possible to distinguish the reactive movements of a monkey from the creative process of a sophisticated AI program.

Next, the Board cited *Kelley v. Chicago Park District*,⁵³ where the court denied copyright protection for a “living garden” because “authorship is an entirely human endeavor” and “a garden owes most of its form and appearance to natural forces.”⁵⁴ Thus, the Board noted that no “United States court that has considered whether artificial intelligence can be the author for copyright purposes, the courts have been consistent in finding that non-human expression is ineligible for copyright protection.”⁵⁵

The Board then cited a series of its own decisions and statements requiring human authorship.⁵⁶ Even in this series of arguments, the Board acknowledged that AI has never been directly addressed: “[N]o *Compendium* section explicitly addresses artificial intelligence, the Board concludes that Office policy and

48. *Id.* at 958.

49. *See id.* at 959.

50. 888 F.3d 418 (9th Cir. 2018).

51. *Id.* at 426.

52. *Id.*

53. 635 F.3d 290 (7th Cir. 2011).

54. *Id.* at 304.

55. Board Refusal of Second Request, *supra* note 20, at 5.

56. *See id.* at 5–6.

practice makes human authorship a prerequisite for copyright protection.”⁵⁷

Finally, the Board addressed the argument that copyright ownership is often granted to non-human entities under the work-made-for-hire doctrine. The Board was not persuaded by this point because “the work is created as the result of a binding legal contract—an employment agreement or a work-for-hire agreement. The ‘Creativity Machine’ cannot enter into binding legal contracts and thus cannot meet this requirement.”⁵⁸ Interestingly, that statement is not entirely accurate: “A contract may be formed by the interaction of electronic agents of the parties, even if no individual was aware of or reviewed the electronic agents’ actions or the resulting terms and agreements.”⁵⁹ It also viewed the doctrine as only addressing copyright ownership (who owns the work) and not whether the work is eligible for copyright protection.⁶⁰

Thaler has now appealed the Board’s decision to a U.S. District Court, which has not yet ruled on the matter.⁶¹ Thaler has also unsuccessfully sought patent protection for an AI-developed concept.⁶²

Meanwhile, AI technology continues to improve and expand in its capabilities. Two examples are Midjourney and DALL-E 2. Both are capable of generating creative artworks that are

57. *Id.* at 6.

58. *Id.* at 6–7.

59. UNIF. ELEC. TRANSACTIONS ACT § 14(1) (UNIF. L. COMM’N 1999).

60. Board Refusal of Second Request, *supra* note 20, at 7.

61. See Min Chen, *A Scientist Has Filed Suit Against the U.S. Copyright Office, Arguing His A.I.-Generated Art Should Be Granted Protections*, ARTNET (Jan. 12, 2023), <https://news.artnet.com/art-world/ai-art-intellectual-property-lawsuit-stephen-thaler-224203> [<https://perma.cc/SMA3-BF5R>].

62. See *Thaler v. Hirshfeld*, 558 F. Supp. 3d 238, 247 (E.D. Va. 2021) (finding that the plain meaning of “individual” in the Patent Act refers only to a natural person, and not to an AI machine; AI cannot be the “inventor”; the “inventor” of work must be a natural person to obtain patent protection).

indistinguishable from works by human artists.⁶³ Once again illustrating the challenges posed by AI, the Copyright Office granted artist Kris Kashtanova copyright registration for her comic book, “Zarya of the Dawn.”⁶⁴ It concluded that Kashtanova was indeed the author of the comic book’s text and overall selection, coordination, and arrangement of the written and visual elements, but that copyright protection would not extend to the images used in the comic book because they were created using Midjourney’s AI-powered text-to-image generator and therefore are not the product of human authorship.⁶⁵

II. How Should U.S. Law Adapt to Cutting-Edge AI Creativity

Evaluating the polar opposite approaches—the one adopted by the Copyright Office and the position proposed by Thaler—to the AI copyright question raises a variety of constitutional, statutory, case law, and policy questions. The starting point is the Constitution. There is support for the Copyright Office’s view that the Copyright Clause of the Constitution contemplated only human authors. This is supported both by the plain language of the text and by the historical understandings of its meaning. In other words, the Copyright Clause makes reference to authors, and it is obvious that the Framers could never have contemplated that anyone other than a human author could make a creative work.

More fundamentally, perhaps, Thaler’s constitutional argument is unavailing because the Copyright Clause does not compel any particular grant of copyright protection to authors. Instead, the Clause *authorizes* Congress to enact copyright

63. See Kevin Roose, *An A.I.-Generated Picture Won an Art Prize. Artists Aren’t Happy*, N.Y. TIMES (Sept. 2, 2022), <https://www.nytimes.com/2022/09/02/technology/ai-artificial-intelligence-artists.html> [<https://perma.cc/MTR8-2ARR>].

64. U.S. Copyright Off., Opinion Letter on Zarya of the Dawn (Registration # VAu001480196), at 1 (Feb. 21, 2023), <https://www.copyright.gov/docs/zarya-of-the-dawn.pdf> [<https://perma.cc/3QWY-THL6>].

65. *Id.*

legislation that it sees fit to reward the efforts of authors and to “promote the Progress of Science.”⁶⁶ In other words, the Clause is a grant of power to Congress, not a guarantee of any particular right to obtain copyrights. Contrast, for example, the provisions of the Bill of Rights guaranteeing various rights to persons, such as the right to freedom of speech or to due process of law.⁶⁷ Congress, moreover, has the discretion to determine the nature, scope, and eligibility of particular works or authors to the protections of copyright law.

The argument for the copyrightability of AI works stands a better chance under the language of the current copyright law, the Copyright Act of 1976, as amended. The subject matter and scope of protection under the statute has grown over the years, with the addition of photography, sound recordings, motion pictures, and computer software serving as examples of works where a mechanical process is necessarily involved in their creation and fixation. Moreover, Thaler is correct to note that copyright law routinely grants protection to non-human authors under the work-made-for-hire doctrine, which was long recognized in common law cases, and which was first enacted in the Copyright Act of 1909.⁶⁸

The statute is written in broad and expansive terms, with no specific provision precluding protection for AI-generated works. Turning to case law, the view that AI-generated works are ineligible for copyright protection does indeed have significant indirect support, as discussed above in cases such as *Feist* and *Naruto*.⁶⁹ But none of these decisions involve creative subject matter developed by a complex AI system. *Feist* was about a plain

66. U.S. CONST. art. I, § 8, cl. 8.

67. See U.S. CONST. amends. I, V.

68. Anne Marie Hill, *The “Work for Hire” Definition in the Copyright Act of 1976: Conflict Over Specially Ordered or Commissioned Works*, 74 CORNELL L. REV. 559, 561–62 (1989).

69. See *Feist Publ’ns, Inc. v. Rural Tel. Servs. Co.*, 499 U.S. 340, 346 (1991); *Naruto v. Slater*, 888 F.3d 418, 426 (9th Cir. 2018).

white pages phone directory.⁷⁰ The monkey in *Naruto* learned to push a button.⁷¹ The wildflowers in *Kelley* grew on their own.⁷²

Finally, questions of policy are inherent in the question of whether AI-generated works should be eligible for copyright protection. The policies are in conflict. On the one hand, it could be argued that AI—as an inanimate system—does not need and does not respond to incentives to create works. Thus, it might be said that Thaler’s program, once powered up or activated, will produce artistic works whether or not they are eligible for copyright protection. But this simple view misconceives the target of incentives—it is the humans who develop and employ creative AI technologies who might respond to incentives that would then “promote the Progress of Science.”

Most scholarly analysis of the AI question has been squarely opposed to providing copyright protection for its creative output. Daniel J. Gervais, for example, while acknowledging that AI can create material otherwise eligible for copyright protection, states as follows:

This Article reviewed the doctrinal and normative arguments that might justify granting copyright protection to those “machine productions” and arguments against granting such protection. The Article rejected arguments in favor of protection of machine productions by copyright for several reasons, not the least of which is that machines need no legal or financial incentives to run their code.⁷³

Gervais proceeds to claim “that copyright is meant to promote human creativity and that creating incentives to have more

70. *Feist Publ’ns*, 449 U.S. at 342–43.

71. *Naruto*, 888 F.3d at 420.

72. *Kelley v. Chi. Park Dist.*, 635 F.3d 290, 304 (7th Cir. 2011).

73. Daniel J. Gervais, *The Machine as Author*, 105 IOWA L. REV. 2053, 2105–06 (2020); *see also id.* at 2105 (“Algorithms can create material that seems to qualify as copyrightable subject matter.”).

productions in the literary and artistic field made by machines could in fact pose a threat to (human) progress.”⁷⁴

Some major treatise writers share this skeptical view of AI-owned copyright. Paul Goldstein, for example, asserts that cases may come up “that squarely present the question whether copyright can attach to a computer-generated product for which the only human intervention is the hand that turned on the machine. Although the question is close, it would appear that, at least without an express direction from Congress, courts should withhold copyright from these automated products.”⁷⁵

William Patry states that “[c]opyright extends only to works of human authors.”⁷⁶ Melville and David Nimmer’s treatise was more nuanced: “the time may not be far off when that question demands answers.”⁷⁷ Other earlier works, with perhaps less benefit of recent developments, also rejected the concept of AI-generated copyrightable works.⁷⁸

A rare exception to the scholarly output denying the potential for AI-owned copyrighted works is a prescient 2016 article by Professor Robert Denicola.⁷⁹ After highlighting the developments in AI up to that point, he critiqued the historical and continuing emphasis of U.S. copyright law on the idealized human producing fruits of intellectual labor: “This romanticized vision of authorship may dominate modern copyright law, but it is a poor bridge to the future. Nevertheless, many treatise writers and scholars continue to opine that human creation is a

74. *Id.* at 2106.

75. 1 PAUL GOLDSTEIN, GOLDSTEIN ON COPYRIGHT § 2.2.2 (3d ed. 2023-2 Supp.), Westlaw.

76. 2 WILLIAM F. PATRY, PATRY ON COPYRIGHT § 3:45, Westlaw (last updated Sept. 2023).

77. 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 5.01[A] (Matthew Bender, rev. ed.) (2023), LexisNexis.

78. *See, e.g.*, Christopher Buccafusco, *A Theory of Copyright Authorship*, 102 VA. L. REV. 1229, 1260 (2016); Ralph D. Clifford, *Intellectual Property in the Era of the Creative Computer Program: Will the True Creator Please Stand Up?*, 71 TUL. L. REV. 1675, 1682 (1997).

79. Robert Denicola, *Ex Machina: Copyright Protection for Computer-Generated Works*, 69 RUTGERS U. L. REV. 251 (2016).

prerequisite to copyright protection.”⁸⁰ He identifies part of the problem—the resistance to copyright protection results from the once-accurate perception of “computers as inert tools.”⁸¹

Perhaps one of the earliest predictions that this might not always be true was by Professor Arthur Miller, who asserted: “[I]f the day arrives when a computer really is the sole author of an original artistic, musical, or literary work (whether a novel or a computer program), copyright law will be embracive and malleable enough to assimilate that development into the world of protected works.”⁸²

Denicola perceptively makes the key policy point: “As human beings recede from direct participation in the creation of many works, continued insistence on human authorship as a prerequisite to copyright threatens the protection—and, ultimately, the production—of works that are indistinguishable in merit and value from protected works created by human beings.”⁸³

He also addressed the obvious objection that computers do not need incentives to create: “[a]t least for now, the production of computer-generated works requires human beings to develop, improve, distribute, and use the computer technology and to disseminate the resulting output. The incentive of copyright protection may play a role, large or small, in all of these human activities.”⁸⁴ He then turns to another objection—the question of ownership: “[w]hile it may be fun to speculate about the personhood of machines, our current jurisprudence is simply not ready to declare that machines can own property.”⁸⁵

Denicola concludes that AI-generated content should be eligible for copyright protection:

80. *Id.* at 265–66 (2016) (footnotes omitted).

81. *Id.* at 267.

82. Arthur R. Miller, *Copyright Protection for Computer Programs, Databases, and Computer-Generated Works; Is Anything New Since CONTU?*, 106 HARV. L. REV. 977, 1073 (1993).

83. Denicola, *supra* note 80, at 269 (footnote omitted).

84. *Id.* at 273.

85. *Id.* at 274 (footnotes omitted).

The copyright statute does not define “author” and the constitutional interpretation of that concept is sufficiently broad to include a human being who originates the creation of a work. A computer user who initiates the creation of computer-generated expression should be recognized as the author and copyright owner of the resulting work.⁸⁶

Annemarie Bridy takes a middle-ground position, arguing that the AI-generated content should be deemed a work made for hire, and thus owned by the person or entity that engaged or employed the AI program to create the work.⁸⁷ She states: “With respect to works of AI authorship, treating the programmer like an employer—as the author-in-law of a work made by another—would avoid the problem of vesting rights in a machine and ascribing to a machine the ability to respond to copyright’s incentives.”⁸⁸

The fundamental issue with AI-generated content is that it is increasingly similar to content produced by human authors. Even as this article is in the process of being published, new developments and improvements in AI are taking place. These developments are no longer minor tweaks, but rather monumental leaps and discontinuous improvements in the capacity of AI. Thus, copyright law will have to grapple with this new world in the very near future. A line that bars AI-generated content will increasingly be an arbitrary one.

III. Comparative Law Approaches & Analysis

In analyzing this policy and legal question, there is value in taking a comparative law approach in order to assess how other nations have addressed this important question for the future and present state of copyright law. This article proposes that the United States rule should follow the UK approach. Under the

86. *Id.* at 286–87.

87. See Annemarie Bridy, *Coding Creativity: Copyright and the Artificially Intelligent Author*, 2012 STAN. TECH. L. REV. 5, 26–28 (2012).

88. *Id.* at 26.

United Kingdom’s Copyright, Designs and Patents Act 1988 (the “CDPA”), there is protection for a category of computer-generated works, that is, those generated by a computer “in circumstances such that there is no human author of the work.”⁸⁹ Section 9(3) of the CDPA provides that the author of a computer-generated literary, dramatic, musical or artistic work, “shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.”⁹⁰

Although some countries follow the current U.S. approach of declining to protect AI-generated content,⁹¹ a number of jurisdictions are finding ways to offer such works copyright protection, including Japan, Ireland, New Zealand, and South Africa.⁹² It is clear that many common law countries, with more flexible legal frameworks, have anticipated the coming tide of AI growth. It is unclear how the EU and China will eventually resolve this question.⁹³

89. Copyright, Designs and Patents Act 1988, c. 48, §178 (UK).

90. *Id.* § 9(3)

91. *See* IceTV Pty Ltd v. Nine Network Australia Pty Ltd. (2009) 239 CLR 458, 151–52 (Austl.) (holding that time and title information of scheduled TV shows are not protected by copyright); Telstra Corp. Limited v. Phone Directories Co. Pty Ltd. (2010) 194 FCR 142, 178–79 (Austl.) (computer-compiled phone directories are not copyright protected).

92. *See* INTELL. PROP. STRATEGY HEADQUARTERS, INTELLECTUAL PROPERTY STRATEGIC PROGRAM 2016, at 10–11 (2016); P. Bernt Hugenholtz & João P. Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?*, 5 INT’L REV. INDUS. PROP. & COPYRIGHT L. 1190, 1211 (2021) (“In some copyright laws of the British tradition—including in the UK, Ireland, New Zealand, and South Africa—the requirement of human authorship has been circumvented by establishing the authorship of ‘computer-generated works’ in cases where no human authorship can be established.”); *see also id.* (“Under these regimes, authorship—and by implication copyright ownership—is accorded to the person who undertook the arrangements necessary for its creation.”).

93. *See id.*; Zhou Bo, *Artificial Intelligence and Copyright Protection—Judicial Practice in Chinese Courts*, WIPO MAG., Nov. 24, 2019, at 3, <https://www.wipo.int/export/sites/www/about->

A rule similar to that in the UK should be adopted in the near future for AI-generated works. This law would provide incentives for the creation and development of AI technology and for the implementation and use of that technology to generate new creative works. This interpretation would make copyright protection for computer-generated works subject to the same requirements that other works must meet. Thus, the work must meet the minimum standard of originality recognized in *Feist*. It must be independently created by the AI technology (and thus not copied from another source). It must not consist of ineligible subject matter (such as ideas, facts, words, short phrases, scènes à faire, and the like). Copyright protection for AI-generated works would subsist for the same term currently given to works made for hire, which is 95 years from the date of publication or 120 years from the date of creation, whichever comes first.

The long-term question—what happens if and more likely when AI technology equals or exceeds human creativity—is no longer merely hypothetical, though it remains unpredictable and futuristic. But it is certainly not beyond the realm of possibility that this situation will arise, and that it will occur more quickly than knowledgeable observers anticipated even a few years ago. If and when it does, one legal solution would be to have the treatment of AI-generated works essentially track the treatment of AI entities themselves. In other words, if they are given legal recognition and status similar to that of human beings, then by right, they would be entitled to the protections of copyright law. In the United States, this result could be accomplished by legislation (likely part of the overall legal status law), by court decisions interpreting the copyright laws, or by an interpretation of the Equal Protection Clause of the Fifth and Fourteenth Amendments.

Conclusion

In conclusion, the treatment of AI-generated works will continue to vex the courts, the Copyright Office, and Congress. Meanwhile, developments in AI technology will continue to

ip/en/artificial_intelligence/conversation_ip_ai/pdf/ms_china_1_en.pdf [https://perma.cc/X77V-ER3X].

expand the nature and types of works that can be created using AI. Society has already reached the point at which the Turing test—whether AI works are indistinguishable from human creations—has been satisfied. AI-generated content is clearly already as good as—and sometimes better than—many human-produced works. It is, therefore, appropriate for either the courts to interpret the current Copyright Act to encompass AI-generated works or for Congress to enact legislation specifically recognizing their protectability. AI is developing and progressing at such a rapid rate that copyright law will need to adapt and catch up to the reality that creativity is no longer only a human sphere of activity.