

THE FUTURE WAS THEN: THE RECURRENT HISTORY OF AI AUTHORSHIP

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INTRODUCTION: THE SHAPE OF COPYRIGHT TO COME

What is the shape of copyright to come in the era of generative AI?¹ The question was big news in 2025. The Copyright Office published its report on the copyrightability of works created by or with the assistance of generative artificial intelligence in January,² and in October a petition for certiorari was filed with the Supreme Court on the subject.³ Although infringement lawsuits regarding the use of copyrighted works generated more litigation, there's a particular fascination with AI authorship. If copyright is closest to "the metaphysics of the law," issues of authorship are the point "where the distinctions are . . . very subtle and refined, and, sometimes, almost evanescent."⁴ The question of nonhuman authorship is then the razor-thin strand of a legal distinction where questions of law and metaphysics are bound together like almost nowhere else.

That said, although the pace has accelerated dramatically in recent years,⁵ computers and other systems of mediated authorship have been used far longer than one might think. Instead of being understood as something new, AI

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1. In the early 1950s, Donald F. Reines of the Examining Division of the Copyright Office penned a humorous short piece, "The Shape of Copyright to Come," looking at the challenges that might befall the Examining Division in the rocket age. Donald F. Reines, *The Shape of Copyright to Come*, in EXAMINING DIV., U.S. COPYRIGHT OFF., ANNUAL REPORT FOR THE FISCAL YEAR ENDING JUNE 30, 1952 app. A at 1 (1952). This was apparently written following the request to register "the sun, the moon, and the stars" for copyright. *Id.* at 9. The title refers to the H.G. Wells "The Shape of Things to Come." It was subsequently republished under the title "Intergalactic Copyright." *Interplanetary Copyright (1952)*, ORPHAN FILM SYMPOSIUM (Feb. 19, 2021), <https://wp.nyu.edu/orphanfilm/2021/02/19/interplanetary-copyright-1952/> [<https://perma.cc/4MPH-YLWN>].

2. U.S. COPYRIGHT OFF., COPYRIGHT AND ARTIFICIAL INTELLIGENCE PART 2: COPYRIGHTABILITY (2025), <https://www.copyright.gov/ai/Copyright-and-Artificial-Intelligence-Part-2-Copyrightability-Report.pdf> [<https://perma.cc/Y233-L4KR>].

3. Petition for Writ of Certiorari, *Thaler v. Perlmutter*, No. 25-449 (Oct. 9, 2025), 2025 WL 2954208. As discussed *infra*, the petition was denied in March of 2026, but this surely is not the end of the issue.

4. *Folsom v. Marsh*, 9 F. Cas. 342 (C.C.D. Mass. 1841) (No. 4,901) (spelled "subtile" in original).

5. Gary Myers, *The Future Is Now: Copyright Protection for Works Created by Artificial Intelligence*, 102 TEX. L. REV. ONLINE 8, 9 (2023).

authorship is best understood as the latest iteration of a long line of systems of mediated authorship, which have a long legal tradition to match. Mediated authorship exists when an intermediary is interposed between the author's expression and the work of authorship in a way where this mediator materially contributes authorial content.⁶ This insight yields substantial contributions by allowing us to mine that rich legal heritage of mediated authorship for solutions to contemporary legal problems.

Substantially speaking, the rule for mediated authorship was most famously stated by the Supreme Court, quoting a then-recent English case, that the author was the one "making, producing, as the inventive or master mind, the thing which is to be protected."⁷ And indeed, while there can be quibbles about the applications of this term, it has been the central inquiry of the United States Copyright Office in questions of mediated authorship for as far back as I can identify. The Copyright Office's approach to AI authorship, stated in its 1965 annual report and substantially unchanged since, essentially tracks this analysis with a continuity which is frankly rather surprising given what a revolutionary technology generative AI is proving to be.⁸

The very fact that that "[t]he same analysis" that the Copyright Office provided in 1965 equally "applies in the context of AI technology" in 2025 itself raises more questions.⁹ On the one hand, it seems vital to understand what exactly the Copyright Office was considering in 1965 to understand what led to a conclusion which the Copyright Office still stands by, and this piece attempts to answer that question. On the other hand, it seems a bit bizarre that a technology seen as revolutionary in current times was conclusively handled as a policy framework sixty years ago.¹⁰

The interface of the law and technology isn't a one-time thing but rather happens repeatedly, and often much earlier than one might expect, but each time certain hard legal questions not yet forced by the state of the art are pushed down the road to a potentially distant future where the issues are unavoidable. One learns from a review of the history of mediated authorship that AI authorship was being done far earlier than we tend to assume. In the 1950s computers

6. Daniel Plate & James Hutson, *The Pastor as Romantic Author: AI, Preaching, and the Unacknowledged Inheritance of Authenticity*, 1 IDEAS SPREAD 14, 17 (2025), <https://j.ideasspread.org/mct/article/view/1773/1796> [<https://perma.cc/6SFK-GU3G>].

7. *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 61 (1884) (quoting *Nottage v. Jackson*, 11 Q. B. Div. 627 (1883) (U.K.)). Put another way, authorship involves both the act of writing down the work "as well as a type of mental effort or creative activity to originate the expression that is fixed." Dan L. Burk, *Thirty-Six Views of Copyright Authorship*, by Jackson Pollock, 58 HOUS. L. REV. 263, 268 (2020).

8. U.S. COPYRIGHT OFF., *supra* note 2, at 2.

9. *Id.*

10. See, e.g., Catherine Clifford, *Google CEO: A.I. is more important than fire or electricity*, CNBC (Feb. 1, 2018, at 13:56 ET), <https://www.cnbc.com/2018/02/01/google-ceo-sundar-pichai-ai-is-more-important-than-fire-electricity.html> [<https://perma.cc/DLV3-QWG7>].

generating expressive works was not just the stuff of science fiction,¹¹ it would be reality. As this was happening, encounters with the copyright registration system likewise happened far earlier than we tend to assume and discussions of the issue in legal discourse also came up. And the expectation was that one day in the future the harder legal questions would be reached where computer authorship went from being a curio to commonplace.

The Constitution empowers Congress to “secur[e]” to “Authors” their “Writings.”¹² There are some situations that may go beyond this, either federally under the commerce clause¹³ or potentially under state law for unfixed works.¹⁴ The latter is strongly limited by the preemption provisions of federal copyright law, while the limits of the former are vague but presumably exist.¹⁵ Generally speaking, to be protected by some form of copyright law, a copyrightable work must be by an “author.” But who or what is an author?

The question of computer authorship has been raised repeatedly over the span of the past seven decades. The names have changed, from stochastic authorship to algorithmic authorship to computational authorship to AI authorship, and the question has repeatedly been asked as technology evolves. And yet the answers, at least from the Copyright Office, have not changed all that much. Nonhuman authorship is not copyrightable, but selection and arrangement by a person is, and the test is generally whether the mental conception of the fixed expression belonged to the author or not.¹⁶ There are some well-known parallels—works by animals are an immediate one, as are works mediated by a machine like a camera. One of the contributions of this piece is to bring other examples to the fore, most notably the case of aleatory music and other indeterminate works, where a substantial record of Copyright Office activity offers additional insight into how to approach the question of disintermediated authorship.

Copyright registration is a particularly useful area to study, in that the Copyright Office handles a more diverse and extensive docket of copyrightability questions than the courts. Although registrations are far less studied than court decisions, their greater variety provides a richer history of copyright law in America, and they do not suffer from as much of the anecdote

11. See generally ARTHUR C. CLARKE, *The Nine Billion Names of God*, in THE NINE BILLION NAMES OF GOD: THE BEST SHORT STORIES OF ARTHUR C. CLARKE 3 (1967) (short story from 1953 about computers enumerating and printing all possible names with no more than three repeating characters). Whether such a work would be copyrightable in 1953 is plausible. See once again very generally *infra* Part III.G.

12. U.S. CONST. art. 1, § 8, cl. 8.

13. 17 U.S.C. § 1101; *United States v. Moghadam*, 175 F.3d 1269, 1282 (11th Cir. 1999).

14. Paul S. Bilker, *The Showdown Continues at the Circle C Ranch: Non-Preemption of State Copyright Protection for Unfixed Improvisational Works*, 18 SW. U. L. REV. 415 (1989).

15. 17 U.S.C. § 301. There are some limits, for instance the Supreme Court’s holding that an expired copyright cannot be revived by creative use of trademark law. *Dastar Corp. v. Twentieth Century Fox Film Corp.*, 539 U.S. 23, 38 (2003). This decision, though, does not frame itself in constitutional terms.

16. Lucas S. Osborn, *Copyright, Creativity, and Skill: Authorship and AI-Assisted Works*, 12 BELMONT L. REV. 594, 598 (2025).

problem which plagues studying the fairly small number of reported cases.¹⁷ Given how frequently the same position on AI authorship has been repeated, looking back to understand this repetition gives insight as we attempt to move copyright forward in the age of AI.

As this issue has been come up repeatedly in the past three-quarters of a century, many of the episodes and ideas here are not new to the literature, although I've tried to provide a more complete picture where I'm not the first to document them.¹⁸ However, a substantial portion here is new and provides a more complete picture of the long history of copyright in computer and indeterminate authorship.

Beyond that though, understanding the past of copyright protection mediated authorship affords a perspective to consider why we protect expressive works for a term measured by the life of the author, a metric which is inextricably intertwined to the humanity of the author. To use a bit of an analogy, to the naked eye a pair of binary stars locked in orbit with each other will seem as one unless something happens to disturb the orbit. In almost all situations the act of authorship and the production of the work of authorship are similarly locked into an orbit with each other so tight that no separation is visible. Works of mediated authorship—especially those using a computer—allow us to see a work bereft of authorship and the question of why it should be protected by copyright, which more sharply indicates just how vital human authorship is.

One measure of this vitality is simply financial. Reddit's massively successful IPO in 2024 was a reminder that even as AI-generated content proliferates, human-generated content is more valuable than ever.¹⁹ It is more than that, though. In the judgment of the Constitution—and the world—copyright is worth its costs to preserve something beautifully human.

I. COPYRIGHT REGISTRATION AT A CROSSROADS

Today the United States Copyright Office, a division of the Library of

17. David A. Hoffman, Alan J. Izenman & Jeffrey R. Lidicker, *Docketology, District Courts, and Doctrine*, 85 WASH. U. L. REV. 681, 683 (2007) (making the same point about dockets).

18. Pamela Samuelson's article from 1986 is surely among the most important ones. Pamela Samuelson, *Allocating Ownership Rights in Computer-Generated Works*, 47 U. PITT. L. REV. 1185 (1986). Other important work on the subject has been done bringing some of the episodes mentioned below to light. See, e.g., Annemarie Bridy, *Coding Creativity: Copyright and the Artificially Intelligent Author*, 2012 STAN. TECH. L. REV. 5 (2012).

19. "Reddit's vast and unmatched archive of real, timely, and relevant human conversation on literally any topic is an invaluable dataset for a variety of purposes, including search, AI training, and research. Reddit is one of the internet's largest corpuses of authentic and constantly updated human-generated experience." Reddit, Inc., Registration Statement (Form S-1) at i (Feb. 22, 2024), <https://www.sec.gov/Archives/edgar/data/1713445/000162828024006294/reddits-1q423.htm> [<https://perma.cc/A83A-DKXD>] (letter from co-founder Steve Huffman); Ryan Deffenbaugh, *How Reddit Surprised Wall Street With 185% Post-IPO Surge*, INV.'S BUS. DAILY (Nov. 15, 2024, at 8:00 ET), <https://www.investors.com/news/technology/reddit-stock-ipo-digital-advertising-ai/> [<https://perma.cc/29KS-2YEU>].

Congress and headed by the Register of Copyrights, has responsibility for copyright registration.²⁰ Registration is not required for copyright protection but is required to commence an infringement lawsuit, among other benefits. To register, the copyright owner will file an application containing the relevant information about the work, including a statement of the nature of authorship of each contributor to the work. Under the 1976 Copyright Act, the Register of Copyrights shall deny registration if the work is not copyrightable, or is otherwise invalid.²¹ The Office of Registration Policy and Procedure has a staff of Registration specialists who examine the application, including the claims of authorship and whether the work meets the low bar for originality set by *Feist*, who may either allow or deny the application.²² If denied, a series of appeals are allowed, culminating in the copyright review board (established in 1995).²³ Further appeal is possible to the federal courts under the Administrative Procedure Act (APA).

A. Current Controversies at the Copyright Office

On January 29, 2025, the Copyright Office released their report, *Copyright and Artificial Intelligence Part 2: Copyrightability*.²⁴ Largely restating the Office's stated positions since 1965 and applying them to the new complexities of generative of AI, the report represents a culmination of a process preceded by several controversial registration denials, while other works with AI content are being registered without controversy. Generally speaking, the Copyright Office will accept an application to register a copyright for a work containing AI content if that AI content is disclaimed.²⁵

1. Stephen Thaler and the Creativity Machine.—Stephen Thaler, a Missouri inventor and artificial intelligence researcher, developed an AI system capable of autonomously producing original works of visual art, which according to Thaler resembles that of art created by a human.²⁶ The program, named the “Creativity Machine,” generated a visual piece of art titled *A Recent Entrance*

20. Zvi S. Rosen, *Examining Copyright*, 69 J. COPYRIGHT SOC'Y U.S.A. 481 (2023).

21. 17 U.S.C. § 410(b).

22. U.S. COPYRIGHT OFF., COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES (3d ed. 2021), <https://www.copyright.gov/comp3/docs/compendium.pdf> [<https://perma.cc/4YPM-UNJE>].

23. *Review Board Opinions*, U.S. COPYRIGHT OFF., <https://www.copyright.gov/rulings-filings/review-board/> [<https://perma.cc/QH8G-KHLY>] (last visited Feb. 21, 2026).

24. U.S. COPYRIGHT OFF., *supra* note 2.

25. *See* Defendant's Response to Motion for Summary Judgment and Memorandum in support thereof and Cross-Motion for Summary Judgment at 13–16, 37–40, *Allen v. Perlmutter*, No. 24-cv-2665 (D. Colo. Jan. 16, 2026), Dkt. No. 57.

26. Will Bedingfield, *The Inventor Behind a Rush of AI Copyright Suits Is Trying to Show His Bot Is Sentient*, WIRED (Aug. 31, 2023, at 7:00 ET), <https://www.wired.com/story/the-inventor-behind-a-rush-of-ai-copyright-suits-is-trying-to-show-his-bot-is-sentient/> [<https://perma.cc/CY2X-RYKJ>]; *Thaler v. Perlmutter*, 687 F. Supp. 3d 140, 142 (D.D.C. 2023), *aff'd*, 130 F.4th 1039 (D.C. Cir. 2025). Thaler has also claimed patents based on the work of the Creativity Machine, which has also been denied. *Thaler v. Vidal*, 43 F.4th 1207 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023).

to Paradise.²⁷ Thaler's attempt to register the work with the Copyright Office took him all the way to the U.S. Supreme Court.

The initial denial of copyright protection for the Creativity Machine's art resulted from Thaler identifying the computer program as the author of the art rather than himself.²⁸ Thaler listed the program as the author because the work had been "autonomously created by a computer algorithm running on a machine."²⁹ Thaler, therefore, attempted to claim the copyright of the art as "a work-for-hire to the owner" of the program.³⁰ Following an initial denial and requests for reconsideration, the Copyright Office affirmed their denial of his application and reiterated the established precedent that works lacking human authorship will be refused by the Copyright Office for copyright registration as these works are not reflective of copyrightable subject matter.³¹

Thaler then proceeded to challenge the Copyright Office's decision in the United States District Court for the District of Columbia.³² Before a decision was made by the District Court, however, Thaler attempted to change direction and began to insist instead that the Creative Machine's artwork was generated based on his inputted instructions.³³ The Copyright Office argued that this conflicted with Thaler's prior representations and that the administrative record had already been made.³⁴ The Court agreed and declined to consider this alternate theory of authorship.³⁵

The District Court, hearing cross-motions for summary judgment in 2023, reasoned that "authorship" in relation to copyright law is "synonymous" with "human creation."³⁶ The Court further explained that this is an understanding that has accompanied copyright law from its creation and has been recognized by the United States Supreme Court on numerous occasions.³⁷ The Court,

27. *Thaler*, 687 F. Supp. 3d at 142.

28. *Id.* at 143.

29. *Id.* (citations omitted).

30. *Id.* This raises unsettling questions which Judge Wilkins would give voice to at oral argument at the D.C. Circuit. At a minimum, how the factors for determining whether a computer program is an employee under the factors the Supreme Court has identified in the work-for-hire context may be challenging. *See Cmty. for Creative Non-Violence v. Reid*, 490 U.S. 730, 751–52 (1989).

31. Letter from Shira Perlmutter, Reg. of Copyrights, Suzanne Wilson, Gen. Couns. & Assoc. Reg. of Copyrights, & Kimberley Isbell, Deputy Dir. of Pol'y & Int'l Affs., U.S. Copyright Off. Review Bd., to Ryan Abbott, Brown, Neri, Smith & Khan, LLP (Feb. 14, 2022), <https://www.copyright.gov/rulings-filings/review-board/docs/a-recent-entrance-to-paradise.pdf> [<https://perma.cc/TWA2-BZGV>].

32. *Thaler*, 687 F. Supp. 3d at 142.

33. Matt Goldberg, *Using the Machine: Evolving Notions of Originality in Copyright Law and AI-assisted Art*, HARRIS SLIWOSKI (Aug. 27, 2024), <https://harris-sliwoski.com/blog/using-the-machine-evolving-notions-of-originality-in-copyright-law-and-ai-assisted-art/> [<https://perma.cc/3YS7-UG7X>].

34. *Id.* Technically speaking the Department of Justice is typically doing the actual litigation on behalf of the Copyright Office, but I refer to the Copyright Office here and going forward for purposes of simplicity.

35. *Id.*

36. *Thaler*, 687 F. Supp. 3d at 147.

37. *Id.* at 148.

therefore, found that that the Register did not err in denying Thaler's copyright application for *A Recent Entrance to Paradise* lacking the requisite amount of human authorship.³⁸

Thaler appealed the District Court's decision to the United States Court of Appeals for the D.C. Circuit in October of 2023.³⁹ The appeal, in asking the Court of Appeals to compel the Copyright Office to register the Creative Machine's work, effectively suggests that the Court should abandon the strict requirement of human authorship for copyrightable materials.⁴⁰ The author attended the oral argument in September of 2024, and Thaler's counsel had a rough go of it—the Court was clearly disinterested in the attempt to shift the question to whether Thaler was actually the author and instead pressed the difficult questions of authorship.⁴¹ Judge Robert Wilkins asked the question of how the writings of slaves were treated under copyright law, a question counsel seemed unprepared for.⁴²

The Court's decision in March of 2025 affirmed the District Court's

38. *Id.* at 150.

39. John Hugo & Michael Robertson, *Can AI Create Copyright? DC Circuit Weighs Human Authorship in Thaler v. Perlmutter*, JD SUPRA (Oct. 1, 2024), <https://www.jdsupra.com/legalnews/can-ai-create-copyright-dc-circuit-3037711/> [<https://perma.cc/RB44-JQAF>].

40. Ron N. Dreben, *Dueling Briefs Filed Over Human Authorship Requirement for US Copyright Registration*, MORGAN LEWIS (May 2, 2024), <https://www.morganlewis.com/pubs/2024/05/dueling-briefs-filed-over-human-authorship-requirement-for-us-copyright-registration> [<https://perma.cc/J9A7-C6XW>].

41. *See generally* Oral Argument, *Thaler v. Perlmutter*, 130 F.4th 1039 (D.C. Cir. 2025) (No. 23-5233), <https://www.courtlistener.com/audio/94557/stephen-thaler-v-shira-perlmutter/> [<https://perma.cc/9K8B-QLKW>] (of course impressions from being there are my own).

42. Tragically, it is difficult to know if the works of enslaved people were registered for copyright by the person in a position of dominion over them. Of the some 140,000 works registered for copyright in the United States prior to 1870, I count under 1,500 known registrations from states which joined the Confederacy, although I suspect a small but nonzero number of registrations have not been identified—likely under 200. Of course, that figure goes to 1870 and the Thirteenth Amendment was ratified in 1865—over 45,000 works were registered for copyright 1866–1870, suggesting under 100,000 registrations were made prior to the ratification of the Thirteenth Amendment. Zvi S. Rosen & Richard Schwinn, *An Empirical Study of 225 Years of Copyright Registrations*, 94 TUL. L. REV. 1003 (2020). Works could have also been registered by publishers in northern states as proprietors on assignment from the person holding themselves out as the author, which would be even more difficult to trace. There are further questions of authorship where someone might transcribe a story told to them. Timothy J. McFarlin, *A Copyright Ignored: Mark Twain, Mary Ann Cord, and the Meaning of Authorship*, 69 J. COPYRIGHT SOC'Y U.S.A. 421 (2022).

I have been able to identify that Frederick Douglass was able to register a copyright when he was still legally a fugitive slave. Zvi S. Rosen, *Were Works by Slaves Eligible for Copyright? A Case Study of Frederick Douglass*, (MOSTLY) IP HISTORY (Dec. 30, 2024), <https://mostlyiphistory.com/2024/12/30/were-works-by-slaves-eligible-for-copyright-a-case-study-of-frederick-douglass/> [<https://perma.cc/3ZWW-4UJA>]. David Newhoff has criticized the question, saying “the comparison is as ugly as it is unfounded” and arguing that The Creativity Machine “is neither slave nor employee any more than Dr. Thaler's coffee maker.” David Newhoff, *The Human Condition is Inherent to Copyright Law*, THE ILLUSION OF MORE (Sep. 23, 2024), <https://illusionofmore.com/the-human-condition-is-inherent-to-copyright-law/> [<https://perma.cc/A5LE-2ABM>].

decision.⁴³ The Court's decision avoided a discussion of the constitutional requirement of authorship and instead focused on various statutory provisions of the copyright law which specifically contemplate human authorship to conclude that federal copyright law requires human authorship.⁴⁴ Thaler's request for en banc review was denied.⁴⁵ In October of 2025, Thaler filed a petition for Writ of Certiorari with the U.S. Supreme Court asking "[w]hether works outputted by an AI system without a direct, traditional authorial contribution by a natural person can be copyrighted."⁴⁶ However, in March of 2026 the Court denied the petition.⁴⁷

2. *Kashtanova's Zarya and Rose Enigma*.—The graphic novel *Zarya of the Dawn* was written by computer scientist and software developer Kris Kashtanova, with the use of AI tools.⁴⁸ With the help of Midjourney, an AI image generator, Kashtanova created an eighteen-page graphic novel that follows the story of a girl who wanders through a futuristic and abandoned Manhattan.⁴⁹

Although they wrote the text, Kashtanova provided the AI program with instructions to generate certain images to depict the story of Zara and complete the graphic novel.⁵⁰ Kashtanova applied for and was granted copyright registration number VAu001480196 on September 15, 2022, by the Copyright Office, not mentioning at the time the use generative AI.⁵¹

Shortly after the graphic novel became copyrighted, Kashtanova took to social media and shared that the Copyright Office's decision suggests that artists using artificial intelligence in their work can be protected through copyright laws.⁵² The Copyright Office was made aware of these statements online and asked Kashtanova to provide the Office with arguments as to why the registration should not be rescinded.⁵³

In November of 2022, Kashtanova asserted their claim of authorship over *Zarya of the Dawn* and argued that they had authored every aspect of the graphic

43. *Thaler*, 130 F.4th at 1052.

44. *Id.* at 1050.

45. *Thaler v. Perlmutter*, No. 23-5233, 2025 WL 1373093 (D.C. Cir. May 12, 2025).

46. Petition for Writ of Certiorari, *supra* note 3, at i.

47. *Thaler v. Perlmutter*, No. 25-449, 2026 WL 568327 (U.S. Mar. 2, 2026).

48. Kris Kashtanova, *Zarya of the Dawn*, KRIS KASHTANOVA ART, <https://www.kris.art/portfolio-2/project-one-ephnc-jamy8> [<https://perma.cc/2FMA-SJRA>] (last visited Jan. 26, 2025).

49. See Codecademy Team, *How to Use Midjourney*, CODECADEMY, <https://www.codecademy.com/article/getting-started-with-midjourney> [<https://perma.cc/7QJ8-EWZ7>] (last visited Jan. 26, 2025); Tom Hals & Blake Brittain, *Insight: Humans vs. machines: the fight to copyright AI art*, REUTERS (Apr. 1, 2023, at 9:21 ET), <https://www.reuters.com/default/humans-vs-machines-fight-copyright-ai-art-2023-04-01/> [<https://perma.cc/H2AR-T38F>].

50. Hals & Brittain, *supra* note 49; *US Copyright Office Grants Limited Registration for AI-Generated Graphic Novel*, COOLEY (Feb. 28, 2023), <https://www.cooley.com/news/insight/2023/02-28-us-copyright-office-grants-limited-registration-for-ai-generated-graphic-novel> [<https://perma.cc/SR4H-7AUY>] (Kashtanova uses they/them pronouns).

51. ZARYA OF THE DAWN, Registration No. VAu001480196 (cancelled registration); COOLEY, *supra* note 50.

52. Hals & Brittain, *supra* note 49.

53. *Id.*

novel “with Midjourney serving merely as an assistive tool.”⁵⁴ In the alternative, Kashtanova also argued that portions of the graphic novel are registerable because the text of the novel was authored by Kashtanova and that the work “is a copyrightable compilation due to her creative selection, coordination, and arrangement of the text and images.”⁵⁵ The Copyright Office was not persuaded, and rescinded its grant of copyright to the images that were created by Kashtanova with the assistance of the Midjourney program.⁵⁶ The Copyright Office reasoned that “Midjourney users are not the ‘authors’ for copyright purposes of the images the technology generates” because Midjourney generates images in a manner that is not fully controlled by human authors.⁵⁷ Accordingly, the Copyright Office *sua sponte* cancelled the registration of *Zarya* as a work of visual art and issued a new registration as a textual work.⁵⁸

Although the images of the graphic novel cannot be copyrighted, the text of *Zarya of the Dawn*, on the other hand, can be.⁵⁹ This is because the text of the novel constitutes “expressive material” that was wholly created by Kashtanova in contrast to the images used in the novel.⁶⁰ Therefore, since they did not appeal the Copyright Office’s final decision, Kashtanova maintains copyright protection for the original text in *Zarya of the Dawn* and in the graphic novel as a whole due to it being a compilation, but not in the individual images that were generated using the Midjourney program.⁶¹

Learning from the mistakes that they made with attempting to copyright *Zarya of the Dawn*, Kashtanova, created *Rose Enigma*, adding “more human input” than they had done with the graphic novel.⁶² The program Kashtanova used this time was Stable Diffusion rather than Midjourney.⁶³ According to Kashtanova, they used their own drawing and showed control over the input while using parameters and a predefined seed.⁶⁴ Therefore, as Kashtanova has explained, the work may be copyrightable subject matter because they had met the “traditional elements of authorship” without the assistance of artificial intelligence.⁶⁵

54. Letter from Robert J. Kasunic, Assoc. Reg. of Copyrights & Dir. of the Off. of Reg. Pol’y & Prac., U.S. Copyright Off., to Van Lindberg, Taylor English Duma LLP 3 (Feb. 21, 2023), <https://www.copyright.gov/docs/zarya-of-the-dawn.pdf> [<https://perma.cc/YST5-FK45>].

55. *Id.*

56. *Id.* at 12; Goldberg, *supra* note 33.

57. Letter from Robert J. Kasunic to Van Lindberg, *supra* note 54, at 9; Goldberg, *supra* note 33.

58. The new registration number is TXu002356581. ZARYA OF THE DAWN, Registration No. TXu002356581.

59. Letter from Robert J. Kasunic to Van Lindberg, *supra* note 54, at 1.

60. *Id.*

61. *Id.* at 12; Goldberg, *supra* note 33.

62. See Kris Kashtanova, *Rose Enigma*, KRIS KASHTANOVA ART, <https://www.kris.art/portfolio-2/rose-enigma> [<https://perma.cc/H6FM-Q68M>] (last visited Jan. 26, 2025).

63. Tiffany Hu, *Artist Seeks Copyright of AI Artwork That Uses Own Drawing*, MORRISON FOERSTER (Mar. 24, 2023), <https://www.mofo.com/resources/news/230324-artist-seeks-copyright-of-ai> [<https://perma.cc/ZA3V-A3FF>].

64. *Id.*

65. *Id.*

As explained in the cover letter of their application to the Copyright Office, *Rose Enigma* was created using generative artificial intelligence as a tool, similar to the way that a photographer uses a camera as a tool to capture an image.⁶⁶ Kashtanova chose a cyborg to be the subject of the artwork and guided Stable Diffusion in the generation of the art with specific text prompts to achieve the image of a human woman, resembling that of a cyborg, with flowers growing from her head.⁶⁷ Thus, Kashtanova chose the subject matter of *Rose Enigma*, not the artificial intelligence program; they also chose how to render that subject in addition to maintaining control over the Stable Diffusion program to ensure that the executed work realized their mental conception.⁶⁸

The “goal” of creating *Rose Enigma*, according to Kashtanova, was to “educate the Copyright Office in the US about different ways A.I. can be used.”⁶⁹ Because intentional decisions regarding the work were made by Kashtanova, they argue that *Rose Enigma* is not a “random creation,” which makes Kashtanova the author of the work and thus satisfies the Copyright Office’s human authorship requirement.⁷⁰ The Copyright Office registered *Rose Enigma*, but the registration has a significant caveat: it is “limited to unaltered human pictorial authorship that is clearly perceptible in the deposit and separable from the non-human expression that is excluded from the claim.”⁷¹

3. *Allen’s Théâtre D’opéra Spatial*.—In 2022, Colorado artist Jason M. Allen created the image *Théâtre D’opéra Spatial* using the artificial intelligence program Midjourney.⁷² Allen entered “at least 624” inputs until he achieved the image that he wanted: an ethereal operatic scene.⁷³ Allen entered *Théâtre D’opéra Spatial* into the 2022 Colorado State Fair fine arts competition in the digital arts category, where it won first place.⁷⁴ The other artists in the competition, as well as those on social media and the Internet, quickly expressed concern that Allen and *Théâtre D’opéra Spatial* had won the contest despite not using traditional elements of human authorship.⁷⁵ It is unclear whether the

66. Letter from Heather M. Whitney, Assoc., & Joseph C. Gratz, Partner, Morrison & Foerster LLP, to Robert J. Kasunic, Copyright Off. (Mar. 21, 2023), <https://drive.google.com/file/d/1cnbU-6jdZwzr6Q1gbsLVVuUuyZwTw-oJ/view> [<https://perma.cc/YL4V-HRUP>].

67. Atreya Mathur, *A Rose Enigma: Pending (Right) Protection*, CTR. FOR ART L. (Dec. 8, 2023), <https://itsartlaw.org/2023/12/08/rose-enigma/> [<https://perma.cc/28Z5-SZ4A>].

68. *Id.*

69. Kashtanova, *supra* note 62.

70. Mathur, *supra* note 67.

71. ROSE ENIGMA, Registration No. VAu001528922.

72. Matt Growcoot, *AI-Generated Artwork Wins First Place at State Fair, Enraging Artists*, PETAPIXEL (Sep. 1, 2022), <https://petapixel.com/2022/09/01/ai-generated-artwork-wins-first-place-at-state-fair-enraging-artists/> [<https://perma.cc/MT7K-GCFW>]; Andrew Kenney, *Jason Allen’s AI art won the Colorado fair—but now the feds say it can’t get a copyright*, CPR NEWS (Sep. 6, 2023, at 8:02 ET), <https://www.cpr.org/2023/09/06/jason-allens-ai-art-won-colorado-fair-feds-deny-copyright-protection/> [<https://perma.cc/DQL3-RFF5>].

73. Growcoot, *supra* note 72; Kenney, *supra* note 72.

74. Growcoot, *supra* note 72; Kenney, *supra* note 72.

75. Drew Harwell, *He used AI to win a fine-arts competition. Was it cheating?*, WASH. POST (Sep. 2, 2022), <https://www.washingtonpost.com/technology/2022/09/02/midjourney-artificial-intelligence-state-fair-colorado/> [<https://perma.cc/87ZP-LQU7>].

judges of the contest understood that the image was generated by AI.⁷⁶

Shortly after winning the competition, Allen applied for copyright registration for the work with the Copyright Office.⁷⁷ Allen did not initially disclose in his application that *Théâtre D'opéra Spatial* was generated using Midjourney, but the Copyright Office became aware that AI had been used in developing Allen's image, and the examiner assigned to Allen's application requested additional information about how the image was created.⁷⁸ Allen explained that he had prompted Midjourney to create an image and then "used Adobe Photoshop to remove flaws and create new visual content," in addition to using Gigapixel AI to enlarge it.⁷⁹ Despite Allen's further explanation, the Copyright Office was not convinced, and the examiner asked Allen if the components of the image created using Midjourney could be excluded from the application.⁸⁰ Allen declined to alter the application.⁸¹

As a result, the Copyright Office refused to register *Théâtre D'opéra Spatial* for not satisfying the human authorship requirement for copyrightable subject matter because the work "included inextricably merged, inseparable contributions from both Mr. Allen and Midjourney."⁸² Subsequently, Allen requested that the Copyright Office reconsider its decision twice, arguing that the human authorship requirement was "misapplied" and that "public policy favored" the registration of *Théâtre D'opéra Spatial*.⁸³ After considering both requests, the Copyright Office reaffirmed their decision.⁸⁴

Allen then brought an action against the Copyright Office in September of 2024 for refusing to register *Théâtre D'opéra Spatial*.⁸⁵ Allen asked the Colorado federal court for a reversal of the Copyright Office's refusal to register his image and asserted that the work is "an expression of his creativity."⁸⁶ At the time of this writing, Allen's summary judgment motion and the Copyright Office's cross-motion for summary judgment are before the court.⁸⁷

76. *Id.*

77. Letter from Suzanne V. Wilson, Gen. Couns. & Assoc. Reg. of Copyrights, Maria Strong, Assoc. Reg. of Copyrights & Dir. of Pol'y & Int'l Affs. & Jordana Rubel, Assistant Gen. Couns., U.S. Copyright Off. Rev. Bd., to Tamara Pester, Tamara S. Pester, LLC 2 (Sep. 5, 2023), <https://www.copyright.gov/rulings-filings/review-board/docs/Theatre-Dopera-Spatial.pdf> [<https://perma.cc/BE76-DTUT>].

78. *Id.*

79. *Id.*

80. *Id.*

81. *Id.*

82. *Id.* (internal quotation marks omitted).

83. *Id.*

84. *Id.*

85. Complaint, Allen v. Perlmutter, No. 1:24-cv-2665 (D. Colo. Sep. 26, 2024), Dkt. No. 1.

86. Blake Brittain, *Artist sues after US rejects copyright for AI-generated image*, REUTERS (Sep. 26, 2024, at 13:41 ET), <https://www.reuters.com/legal/litigation/artist-sues-after-us-rejects-copyright-ai-generated-image-2024-09-26/> [<https://perma.cc/3NGP-SKEV>]; Complaint, *supra* note 84, at 24.

87. Plaintiff's Motion for Summary Judgment, Allen v. Perlmutter, No. 24-cv-2665 (D. Colo. Aug. 25, 2025), Dkt. No. 41; Defendant's Response to Plaintiff's Motion for Summary Judgment

4. *Other Examples, Not Litigated.*—The above examples have been in the news, but it’s worth noting that these are not the only AI registrations considered at the Copyright Office in recent years. For example, Aerospace IT integrator SITA registered five works for copyright in 2021, where “[s]ome non-human authorship” was disclaimed.⁸⁸ Likewise, in 2019, Human Mode Robotics put out an anthology of poems written by “Robot Newman,” accurately entitled *The Art of Artificial Poetry: I Wrote This in Three Hours*.⁸⁹ Only the foreword and acknowledgements were edited at all by humans.⁹⁰ Registration was nonetheless granted as a collective work, with the caveat that “[r]egistration does not extend to non-human authorship.”⁹¹

From 2022 to 2024 Noah Lukeman and his Lukeman Literary Agency received by far the majority of registrations which acknowledge and exclude from the claim “text generated by artificial intelligence.”⁹² As of December 31, 2024, Lukeman Literary, Ltd. received 319 copyright registrations.⁹³ Taking one work, *Absolute Damage (A Jake Mercer Political Thriller—Book 2)*, as an example, it received registration TX0009387546 in April of 2024,⁹⁴ apparently without any correspondence from the Copyright Office. The Amazon reviews are oddly normal, and there is no indication it is partially AI-generated anywhere but in the copyright registration.⁹⁵

In a supplemental registration, Lukeman stated that a

computer was also used in a finite capacity as merely an assisting instrument in contributing portions of generative-AI material. The

and Cross-Motion for Summary Judgment, *supra* note 25; Plaintiff’s Reply to Defendant’s Response to Motion for Summary Judgment, *Allen*, No. 24-cv-2665 (D. Colo. Feb. 27, 2026), Dkt. No. 60.

88. FLEX CORE, Registration No. TXu002297823; MOBILIZE CLIENT, Registration No. TXu002294583; AMS DATA WAREHOUSE CLIENT, Registration No. TXu002294599; AMS SEASONAL CLIENT, Registration No. TXu002294594; AMS CORE—AMS OPERATIONAL CLIENT, Registration No. TXu002272414.

89. Human Mode (@HumanModeTech), X (July 15, 2019, at 10:19 ET), <https://x.com/HumanModeTech/status/1150771897740775424> [<https://perma.cc/ME8R-Q2J8>].

90. *See* ROBOT NEWMAN, *THE ART OF ARTIFICIAL POETRY: I WROTE THIS IN THREE HOURS* (2019).

91. *THE ART OF ARTIFICIAL POETRY: I WROTE THIS IN THREE HOURS*, Registration No. TX0008768878 (preceded by a registration as an unpublished work); ROBOT NEWMAN—*THE ART OF ARTIFICIAL POETRY*, Registration No. TXu002156337.

92. U.S. COPYRIGHT OFF. PUB. RECS. SYS., <https://publicrecords.copyright.gov/> (search in search bar for “text AND generated AND by AND artificial AND intelligence AND Lukeman”; then filter the search results for between “01/01/2022” and “12/31/2024”) (last visited Feb. 22, 2026).

93. *Id.* (search in search bar for “text AND generated AND by AND artificial AND intelligence AND Lukeman”; then filter the search results for before “12/31/2024”).

94. *ABSOLUTE DAMAGE (A JAKE MERCER POLITICAL THRILLER—BOOK 2)*, Registration No. TX0009387546.

95. *Absolute Damage (A Jake Mercer Political Thriller—Book 2)*, AMAZON, <https://www.amazon.com/Absolute-Damage-Mercer-Political-Thriller-Book-ebook/dp/B0CSVTZBYH> [<https://perma.cc/F8KK-NZCJ>] (last visited Jan. 26, 2025); *ABSOLUTE DAMAGE (A JAKE MERCER POLITICAL THRILLER—BOOK 2)*, Registration No. TX9387546.

entire creative conceptualization of the plot, including how to execute it step by step, was done by a human. Approximately 60 to 80% of the writing is original and human-written The final product contains very little content that is untouched AI-generated content.⁹⁶

The contrast between this situation and *Théâtre D'opéra Spatial* seems interesting and suggests a more uniform approach is needed. One wonders if the text and visual arts sections of the Registration Policy and Practice Division of the Copyright Office are approaching this issue differently.⁹⁷ Either way, the numbers are increasing—the Copyright Office granted one registration claiming “text generated by artificial intelligence” as preexisting matter in 2022, 145 in 2023, and 318 in 2024.⁹⁸ 2025 has had more than 600,⁹⁹ with Lukeman having a substantial but non-majority percentage in 2025.¹⁰⁰

On January 30, 2025, the Copyright Office approved registration of *A Single Piece of American Cheese* by InvokeAI, with the initial rejection being overcome by additional information about human input in the work’s creation.¹⁰¹ This illustrates what seems to be something of a trend, both in the past and present—an insistence on human input, coupled with general persistence and a disclaimer of computer authorship, is generally sufficient to receive a registration from the Copyright Office.¹⁰²

During the first nine months of 2025, there were 4,375 registrations that list “AI” or “artificial intelligence” in the material excluded.¹⁰³ Almost 3,400 of these were text registrations, with 291 music registrations, 171 computer-file registrations, and double digits of most other categories.¹⁰⁴ In fact, although the

96. BEYOND REASON (A REESE LINK MYSTERY—BOOK ONE), Registration No. TX0009315600 (supplement to BEYOND REASON (A REESE LINK MYSTERY—BOOK ONE), Registration No. TX0009235931).

97. See Defendant’s Response to Plaintiff’s Motion for Summary Judgment and Cross-Motion for Summary Judgment, *supra* note 25.

98. U.S. COPYRIGHT OFF. PUB. RECS. SYS., *supra* note 92 (search in advanced search bar for “text generated by artificial intelligence”; then filter the search results for between “01/01/2022” and “12/31/2022”; filter the search results for between “01/01/2023” and “12/31/2023”; filter the search results for between “01/01/2024” and “12/31/2024”).

99. *Id.* (search in advanced search bar for “text generated by artificial intelligence”; then filter the search results for between “01/01/2025” and “12/31/2025”) (684 results).

100. *Id.* (search in advanced search bar for “text generated by artificial intelligence”; then add a row with “Operator” “AND”; input “Lukeman Literary Management”; filter the search results for between “01/01/2025” and “12/31/2025”) (161 results).

101. Katelyn Chedraoui, *This Company Got a Copyright for an Image Made Entirely With AI. Here’s How*, CNET (Feb. 10, 2025, at 6:00 PT), <https://www.cnet.com/tech/services-and-software/this-company-got-a-copyright-for-an-image-made-entirely-with-ai-heres-how/> [<https://perma.cc/LP6N-YDLN>]; A SINGLE PIECE OF AMERICAN CHEESE, Registration No. VAu001543942.

102. Chedraoui, *supra* note 101.

103. U.S. COPYRIGHT OFF. PUB. RECS. SYS., *supra* note 92 (search in advanced search bar for “AI” with a “Field Heading” of “Material Excluded”; add a row and search for “artificial intelligence” with the “Operator” of “OR” and “Field Heading” of “Material Excluded”; filter the search results for between “01/01/2025” and “09/30/2025”).

104. *Id.*

A Single Piece of American Cheese registration, with its disclaimer of “AI-generated image components” got a fair bit of attention,¹⁰⁵ it was neither particularly exceptional nor precedential. There were over 2,600 registrations with effective dates prior to that registration’s approval date that disclaim AI content.¹⁰⁶ What records are being kept of these registrations, and the status of the presumption of the validity when it is unclear what exactly was registered, is a question for a future project.¹⁰⁷

5. *Going Beyond the USA*.—Although the framing varies a bit, most other countries have adopted a fairly similar approach to the United States for copyright protection, requiring at least some element of human authorship. For instance, in India the Copyright Act of 1957 defines an “author” as the person who “causes the work to be created,” even if a computer is involved.¹⁰⁸ After Ankit Sahni registered a work listing his AI tool “Raghav” as a co-author, the Indian Copyright Office issued a withdrawal notice.¹⁰⁹ The Court of Justice of the European Union has required that a work reflecting “the expression of the intellectual creation of their author” be protected by copyright, but the details of what that means are left to member states.¹¹⁰ Under Japanese law, a copyrightable work must express “human thoughts and emotions.”¹¹¹ It may be possible for a work created using AI to be protected under this standard if it reflects substantial human input.¹¹²

One outlier may be China, where the Beijing Internet Court found that detailed prompting could create a copyrightable work, noting that there had been “a certain amount of intellectual input, such as designing the presentation of the character, selecting the prompts, arranging the order of the prompts, setting the

105. Chedraoui, *supra* note 101.

106. U.S. COPYRIGHT OFF. PUB. RECS. SYS., *supra* note 92 (search in advanced search bar for “AI” with a “Field Heading” of “Material Excluded”; add a row and search for “artificial intelligence” with the “Operator” of “OR” and “Field Heading” of “Material Excluded”; filter the search results for an “End Date” of “01/30/2025”).

107. 17 USC § 410(c).

108. The Copyright Act, 1957, § 2(d)(vi) (India).

109. Sukanya Sarkar, *Exclusive: Indian Copyright Office issues withdrawal notice to AI co-author*, MANAGING IP (Dec. 13, 2021), <https://www.managingip.com/article/2a5bqtj8ume32iwlaoy5y/exclusive-indian-copyright-office-issues-withdrawal-notice-to-ai-co-author> [https://perma.cc/5G4F-DTKP]. See also Letter from Suzanne V. Wilson, Gen. Couns. & Assoc. Reg. of Copyrights, Maria Strong, Assoc. Reg. of Copyrights & Dir. of Pol’y & Int’l Affs. & Mark T. Gray, Assistant Gen. Couns., U.S. Copyright Off. Rev. Bd., to Alex P. Garens, Day Pitney, LLP (Dec. 11, 2023), <https://www.copyright.gov/rulings-filings/review-board/docs/SURYAST.pdf> [https://perma.cc/ZAW6-DRAT] (U.S. Copyright Office also refused to register the work.).

110. Case C-5/08, *Infopaq Int’l A/S v. Danske Dagblades Forening* 2009 E.C.R. I-6569, ¶ 51.

111. Scott Warren, *Japan’s New Draft Guidelines on AI and Copyright: Is It Really Ok to Train AI Using Pirated Materials?*, SQUIRE PATTON BOGGS (Mar. 12, 2024), <https://www.privacyworld.blog/2024/03/japans-new-draft-guidelines-on-ai-and-copyright-is-it-really-ok-to-train-ai-using-pirated-materials/> [https://perma.cc/2QCW-3H4Q].

112. *Id.*

relevant parameters, selecting which picture meets their expectations.”¹¹³ Although this approach is somewhat discordant with the United States, it is more in rule than doctrine—declining a per se rule against registration while still requiring some human authorship for AI creations. Interestingly, in another case, the Court found that the company behind the AI product, Tencent, owned the copyright in a textual work output by its AI product.¹¹⁴

Another interesting outlier is the United Kingdom, which established protections for computer-generated works in the 1988 Copyright, Designs and Patents Act.¹¹⁵ Under these provisions, “the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.”¹¹⁶ New Zealand, Hong Kong, and Ireland have similar provisions.¹¹⁷

B. The 1965 Copyright Office Annual Report

The issue of AI authorship and copyright is significant and is becoming more so. As such, it is not surprising that the initially obscure 1965 Annual Report of the Copyright Office keeps coming up as the original authority on the subject.¹¹⁸ In the section on administrative developments at the Copyright Office, alongside issues such as searching Mexican copyrights and the percentage of registrations renewed by subject matter, is a section in the Report with the heading “Problems Arising From Computer Technology.”¹¹⁹ After discussing copyright registration for computer programs, the Report turns to

113. Li Mou Su Liu Mou Qin Hai Zuopin Xinxiwangluo Chuanbo Quan Jiufen An (李某某诉刘某某侵害作品署名权、信息网络传播权纠纷案) [Li v. Liu, The Dispute over Copyright Infringement on the Right of Authorship and Right of Communication through Information Network], Jing 0491 Min Chu No. 11279, at 13 (Beijing Internet Ct. Nov. 27, 2023) (China), translated at <https://patentlyo.com/media/2023/12/Li-v-Liu-Beijing-Internet-Court-20231127-with-English-Translation.pdf> [<https://perma.cc/E56G-5HHK>]; Danny Friedmann, *Creation and Generation Copyright Standards*, 14 N.Y.U. J. INTELL. PROP. & ENT. L. 51, 84 (2025).

114. *Copyright Ownership of Generative AI Outputs Varies Around the World*, COOLEY (Jan. 29, 2024), <https://www.cooley.com/news/insight/2024/2024-01-29-copyright-ownership-of-generative-ai-outputs-varies-around-the-world> [<https://perma.cc/J2NE-CX6T>].

115. Copyright, Designs and Patents Act 1988, c. 48 (UK), <https://www.legislation.gov.uk/ukpga/1988/48/data.pdf>.

116. *Id.* § 9(3).

117. Hafiz Gaffar & Saleh Albarashdi, *Copyright Protection for AI-Generated Works: Exploring Originality and Ownership in a Digital Landscape*, 15 ASIAN J. INT’L L. 23, 36 (2024).

118. Westlaw indicates that the 1965 Annual Report has been cited twenty-seven times by law reviews and journals articles, almost one third of the total of ninety-two citations to all annual reports of the Register of Copyrights. WESTLAW, “Annual Report” /s “Register of Copyrights” /s 1965, 27 results (Feb. 26, 2026) (on file with the Indiana Law Review) (filtered by “Secondary Sources”, “Law Reviews & Journals”); WESTLAW, “Annual Report of the Register of Copyrights”, 92 results (Feb. 26, 2026) (on file with the Indiana Law Review) (filtered by “Secondary Sources”, “Law Reviews & Journals”).

119. U.S. COPYRIGHT OFF., SIXTY-EIGHTH ANNUAL REPORT OF THE REGISTER OF COPYRIGHTS FOR THE FISCAL YEAR ENDING JUNE 30, 1965, at 4 (1966), <https://www.copyright.gov/reports/annual/archive/ar-1965.pdf> [<https://perma.cc/L75A-XU94>].

copyrightability of what was then called computer-generated works and what we'd now call AI authored works.¹²⁰

As computer technology develops and becomes more sophisticated, difficult questions of authorship are emerging. The Copyright Office had previously received an application for registration of a musical composition created by computer. This year, copyright was claimed for an abstract drawing, and for compilations of various kinds, which were at least partly the “work” of computers. It is certain that both the number of works proximately produced or “written” by computers and the problems of the Copyright Office in this area will increase. The crucial question appears to be whether the “work” is basically one of human authorship, with the computer merely being an assisting instrument, or whether the traditional elements of authorship in the work (literary, artistic, or musical expression or elements of selection, arrangement, etc.) were actually conceived and executed not by man but by a machine.¹²¹

This section is the subject of some fascination because it was so far ahead of its time.¹²² However, in addition to the reports to Congress, the various divisions of the U.S. Copyright Office have, since 1947, produced reports to the Register of Copyrights and Librarian of Congress.¹²³ The annual report of the Examining Division goes into greater detail than the public report on the issue and makes additional observations which are not included in the Office's Report, noting that:

In many cases the application may not reflect the true nature of the authorship, and registrations will be made that would not be if the actual facts had been known by the Examining Division. The problem is complicated by the fact that we cannot take the categorical position that registration will be denied merely because a computer may have been used in some manner in creating the work. After all, a typewriter is a machine that is used in the creation of a manuscript but this does not result in the manuscript being uncopyrightable.¹²⁴

120. *Id.* at 4–5.

121. *Id.* at 5.

122. See, e.g., Robert C. Denicola, *Ex Machina: Copyright Protection for Computer-Generated Works*, 69 RUTGERS L. REV. 251, 264 (2016).

123. Rosen & Schwinn, *supra* note 42, at 1022–23. I've shared all the Examining Division reports I could find here: U.S. Copyright Off., *U.S. Copyright Office Examining Division Annual Reports*, INTERNET ARCHIVE (Aug. 9, 2021), https://archive.org/details/USCO_Examining_Reports/1948/ [<https://perma.cc/B2YV-8TPB>].

124. U.S. COPYRIGHT OFF., ANNUAL REPORT OF THE EXAMINING DIVISION, COPYRIGHT OFFICE FOR THE FISCAL YEAR 1965, at 4 (1966), <https://copyright.gov/reports/annual/archive/examining1965.pdf> [<https://perma.cc/9W7Y-BE25>]. When I shared this on Twitter in March of 2022, the Copyright Office asked me where it was from and subsequently scanned the report for

Barbara Ringer was the head of the Examining Division at the time and would have written this language, and former Examining Division employee Art Levine, subsequently of Finnegan, informs me that she worked on the question of AI authorship herself rather than delegating it.¹²⁵ She clearly did good work, because the Copyright Office's 2021 Compendium essentially restates this:

[T]he Office will not register works produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author. The crucial question is “whether the ‘work’ is basically one of human authorship, with the computer [or other device] merely being an assisting instrument, or whether the traditional elements of authorship in the work (literary, artistic, or musical expression or elements of selection, arrangement, etc.) were actually conceived and executed not by man but by a machine.”¹²⁶

Shortly after the Library's annual report came out, Richard Glasgow of the Copyright Office spoke to *The Washington Post* and offered additional insight, noting:

If it can be shown that the work was programmed under human direction or the output edited by human hand, then copyrights will be granted, Glasgow said. But when computers get to the stage where they are fed raw material and “out comes a musical composition,” then nothing doing. The touchy problem will be to determine at what point human direction lets off and computers take over. Guidelines for this have yet to be worked out.¹²⁷

All of this sounds remarkably similar to current policy. If we are still using the analysis from 1965, we should know what works were actually at issue when this analysis was developed, both for context and to understand the degree to which it is equally applicable to modern works of large language models and other generative AI creations. Accordingly, we need to go further back in time and consider other situations where authorship was tenuous.

placement on their site. Image posted by Zvi S. Rosen (@zvisrosen), X, (Mar. 29, 2022, at 13:38 ET), <https://x.com/zvisrosen/status/1508861171616653316> [<https://perma.cc/LD84-UM8P>].

125. It is worth noting that in 1965 Barbara Ringer would have been near the end of the nearly decade-long process where she served as the primary drafter of what would become the 1976 Copyright Act, even though it would not become law for more than another decade.

126. U.S. COPYRIGHT OFF., *supra* note 22, § 313.2 (quoting U.S. COPYRIGHT OFF., *supra* note 119, at 5).

127. Leroy F. Aarons, *Poser: Is Computer a Citizen?*, WASH. POST, Apr. 20, 1966, at C7 (paragraph breaks omitted) (stating that citizenship was required for registration, but this would have been an error).

II. MEDIATED AUTHORSHIP

Before dealing with computer-generated works, it is necessary to consider the long history of controversies involving copyright protection and mediated authorship. Mediated authorship goes back thousands of years with, for instance, the use of scribes in ancient times.¹²⁸ This includes works of a religious nature, works in new media with a different quantum of authorship, and works involving randomness and chance.¹²⁹ Properly conceiving of AI works as a type of mediated authorship allows us to better understand how AI authorship fits into existing precedents and practices.¹³⁰

A. Early Authorship Problems

Prior to the 1976 Act, the practicalities of registration were slightly different, and controversies over authorship long predate the current law. The origins of the system of copyright registration in the United States lie in England, where the Stationers' Company maintained a system of registration of works for printing.¹³¹ Individual states had registration systems in the 1780s, typically with their secretary of state. In 1790, Congress passed a copyright law providing for federal copyright protection for books, maps, and navigational charts, with registration to be made with the clerk of the local federal district court in the registrant's district. Until 1909, copyright registration was made before publication by depositing a printed title page and paying a fee, although, as noted above, the registration venue moved to the Library of Congress in 1870.¹³²

Among the first works that claimed at least partially non-human authorship to be registered for copyright was the Book of Mormon, registered for copyright

128. James Hutson & Travis McMaken, *Dictating the Divine: Revisiting Authorship, Intention, and Authority from Sacred Texts to Generative AI*, 3 ISAR J. ARTS, HUMANITIES & SOC. SCIS. 21, 21 (2025). The work made for hire doctrine is a descendant of this, although only some cases—more analogous to this historical analogue—are clearly mediated authorship, while in other cases, authorship isn't being mediated so much as shifted to the employer when the employee was in fact the author. See David Nimmer, *Copyright in the Dead Sea Scrolls: Authorship and Originality*, 38 HOUS. L. REV. 1, 14–15 (2001) (discussing how adaptations of ancient texts also raise some of the same issues).

129. There is also an interesting discourse of how student work is mediated by their professors and their peers. This is a somewhat different usage but nonetheless interesting. PAUL A. PRIOR, *WRITING/DISCIPLINARITY: A SOCIOHISTORIC ACCOUNT OF LITERATE ACTIVITY IN THE ACADEMY* 140–43 (1998).

130. Although I've attempted to survey some of the major instances of mediated authorship, this section is not meant to be fully exhaustive. Another example would be video games, where the courts ultimately resolved that the elements of the game were sufficiently fixed even if their final expression was dependent on the gamer. See *Williams Elecs., Inc. v. Artic Int'l, Inc.*, 685 F.2d 870 (3d Cir. 1982). Likewise, the work made for hire doctrine could be a paper in and of itself in its relation to mediated authorship.

131. In 1710, this was made much closer to modern copyright, but registration remained with the Stationers.

132. Additional formalities such as notice and deposit also existed, although those are mostly tangential to us here.

with the clerk for the Northern District of New York in June of 1829 by Joseph Smith, Jr.¹³³ Smith described that he had found tablets in an unknown language of divine inspiration, which he translated himself and which were, in turn, transcribed by others.¹³⁴ On the title page, Smith listed himself as the author and proprietor, and the registration was made listing Smith as the author.¹³⁵ The Book of Mormon is forthright about its authorship but, as a translation, it may have been validly registered anyway—and it is unlikely the clerk would have put up a fuss because the fees went directly into his pocket.¹³⁶ In 1835, the Church's *Doctrine and Covenants* was published, which is described as “carefully selected from the revelations of God, and compiled by” the presiding elders.¹³⁷ This work was also registered for copyright in Ohio in 1835.¹³⁸ The question of authorship in works that claim a higher authorship continues to be a difficult one to this day.¹³⁹ Speaking at the end of the nineteenth century, Librarian of Congress Ainsworth Spofford mentioned that he had registered the Bible for copyright several times, although he knew it was likely invalid.¹⁴⁰

The same considerations of clerks being willing to accept almost anything that was given to them for registration, so long as the fee was paid, also applied to photographs. There is good evidence of registrations for photographs being made well before photographs were officially added to the copyright law in 1865,¹⁴¹ but they raise somewhat unique legal issues as to who the “author” is. Was the author the person posing, the person operating the camera, the person giving them directions for posing, the owner of the photography studio, or no

133. *Title page for The Book of Mormon: an account written by then hand or Mormon upon plates taken from the plates of Nephi . . . by Joseph Smith, Junior, author and proprietor*, LIBR. OF CONG., <https://www.loc.gov/item/2016660778/> [<https://perma.cc/CWG9-R8WQ>] (last visited Jan. 27, 2025).

134. *Book of Mormon Translation*, THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS, <https://www.churchofjesuschrist.org/study/manual/gospel-topics-essays/book-of-mormon-translation?lang=eng> [<https://perma.cc/VK6S-DYJQ>] (last visited Jan. 27, 2025).

135. Nathaniel Hinckley Wadsworth, *Copyright Laws and the 1830 Book of Mormon*, 45 BYU STUD. 77, 83 (2006).

136. Translations of works by others were registered for copyright as early as 1794. *See* GEORG FRIEDRICH VON MARTENS, SUMMARY OF THE LAW OF NATIONS, FOUNDED ON THE TREATIES AND CUSTOMS OF THE MODERN NATIONS OF EUROPE; WITH A LIST OF THE PRINCIPAL TREATIES, CONCLUDED SINCE THE YEAR 1748 DOWN TO THE PRESENT TIME, INDICATING THE WORKS IN WHICH THEY ARE TO BE FOUND (William Cobbett trans., 1795).

137. JOSEPH SMITH, JR. ET AL., DOCTRINE AND COVENANTS OF THE CHURCH OF THE LATTER-DAY SAINTS (1835), https://archive.org/details/GR_711/page/n5/mode/2up [<https://perma.cc/XX6L-ZJQR>].

138. *Copyright Records Ohio*, LIBR. OF CONG. (1831–1848), <https://www.loc.gov/resource/rbccopyledger.copy0560/?sp=27&r=-0.911,-0.112,2.823,1.749,0> [<https://perma.cc/24X2-GSD2>] (last visited Mar. 16, 2026).

139. *See* *Urantia Found. v. Maaherra*, 114 F.3d 955, 958–59 (9th Cir. 1997); ANDREW VENTIMIGLIA, COPYRIGHTING GOD: OWNERSHIP OF THE SACRED IN AMERICAN RELIGION 24–27 (2019).

140. *SPOFFORD IS ON THE RACK; Accounts of the Librarian of Congress are Questioned. UNBUSINESSLIKE METHODS CHARGED Copyrights Obtained Without a Full Compliance with the Law—Fees Retained for an Undue Length of Time*, N.Y. TIMES, July 10, 1895, at 4.

141. Wendi A. Maloney, *Lincoln Authorized 1865 Copyright Legislation*, COPYRIGHT NOTICES, Feb. 2009, at 16.

one at all?¹⁴² Because a camera simply captures whatever is put in front of it, and the Constitution only empowers Congress to protect “Writings” of an “Author,” does copyright law extend to works that use mechanical mediation to produce the work?¹⁴³

The issue was finally raised when famed photographer Napoleon Sarony’s depiction of Oscar Wilde, taken while Wilde was on a tour of America, was widely used without Sarony’s permission, including in advertisements for department stores in New York and Chicago.¹⁴⁴ The resulting suit against the Burrow-Giles Lithographic Company would arrive at the Supreme Court, which finally addressed what “author” means under the Constitution.¹⁴⁵

Recognizing that “[t]he constitutional question is not free from difficulty,” the Court held that Sarony’s copyright was valid.¹⁴⁶ The Court noted that the 1790 statute had included maps and navigational charts, where the only authorship is in representational choices of natural objects.¹⁴⁷ Further, the Court reasoned that “[t]he construction placed upon the constitution by the first act of 1790 . . . by the men who were contemporary with its formation, many of whom were members of the convention which framed it, is of itself entitled to very great weight.”¹⁴⁸ Holding that the words “author” and “writing” are “susceptible of a more enlarged definition than” simply someone writing a book, the Court held that “the constitution is broad enough to cover an act authorizing copyright of photographs, so far as they are representatives of original intellectual conceptions of the author.”¹⁴⁹ The Court further found that there was sufficient original authorship from Sarony’s “posing the said Oscar Wilde in front of the camera, selecting and arranging the costume, draperies, and other various accessories in said photograph, arranging the subject so as to present graceful outlines, arranging and disposing the light and shade, suggesting and evoking the desired expression,” even though he did not actually operate the camera.¹⁵⁰

The Court’s decision in *Burrow-Giles v. Sarony* continues to be a touchstone of what authorship means under the Constitution—a nineteenth-century connection between the framing of the Constitution a century earlier and today. When the Copyright Office denied Stephen Thaler’s attempt to register a work authored by his “Creativity Machine,” they discussed *Burrow-Giles* extensively.¹⁵¹ The district court, in affirming that decision, also discussed *Burrow-Giles*, noting that “[h]uman involvement in, and ultimate creative control over, the work at issue was key to the conclusion that the new type of

142. See generally DAVID NEWHOFF, WHO INVENTED OSCAR WILDE? (2020).

143. U.S. CONST. art. 1, § 8, cl. 8.

144. Megan Richardson, *Oscar Wilde Portrait*, in A HISTORY OF INTELLECTUAL PROPERTY IN 50 OBJECTS 113, 117 (Claudy Op den Kamp & Dan Hunter eds. 2019).

145. *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53 (1884).

146. *Id.* at 56, 61.

147. *Id.* at 57–58.

148. *Id.* at 57.

149. *Id.* at 57–58.

150. *Id.* at 55.

151. Letter from Shira Perlmutter to Ryan Abbott, *supra* note 31.

work fell within the bounds of copyright.”¹⁵²

The other major case from this period to explore the nature of authorship involved the question of whether the name used by a business was a writing of an author. In a series of consolidated cases regarding counterfeit labels for alcoholic beverages, the Supreme Court held that an unadorned trademark was not the writing of an author.¹⁵³ The Court explained that in addition to the requirement of originality for authorship,

while the word *writings* may be liberally construed, as it has been, to include original designs for engravings, prints, &c., it is only such as are *original*, and are founded in the creative powers of the mind. The writings which are to be protected are *the fruits of intellectual labor*, embodied in the form of books, prints, engravings, and the like.¹⁵⁴

The Court then proceeds to explain that a simple trademark is none of these things, as it is founded on priority of use and need not be the writing of an author.¹⁵⁵ As these doctrines have rarely been addressed by the Supreme Court since, these two decisions exist in something of a counterpoint to each other as the fundamentals of what authorship of a writing means under the Constitution.¹⁵⁶

Copyright registration had been moved to the Library of Congress in 1870 with the goal of increasing the Library’s collection through deposit. It quickly became clear that Librarian of Congress Ainsworth Spofford had in some ways bitten off more than he could chew, and the Library (still within the Capitol building at this point) was flooded with many questionable registrations, particularly product labels.¹⁵⁷ Spofford was still administering copyright registration when, in the final decades of the nineteenth century, technologies for capturing more and more of the world were developed, with both audio and video recording arriving before the turn of the century. These would follow very different legal paths, as motion pictures would be registered for copyright almost immediately, while sound recordings would not be registrable for copyright under federal law until ninety-five years after Thomas Edison

152. *Thaler v. Perlmutter*, 687 F. Supp. 3d 140, 146 (D.D.C. 2023), *aff’d*, 130 F.4th 1039 (D.C. Cir. 2025).

153. *Trade-Mark Cases*, 100 U.S. 82 (1879); Zvi S. Rosen, *In Search of the Trade-Mark Cases: The Nascent Treaty Power and the Turbulent Origins of Federal Trademark Law*, 83 ST. JOHN’S L. REV. 827, 869 (2010).

154. *Trade-Mark Cases*, 100 U.S. at 94.

155. *Id.*

156. The Supreme Court would later qualify that courts should not engage in aesthetic discrimination, and that original works of authorship are copyrightable “outside of the narrowest and most obvious limits.” *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 251 (1903).

157. Zvi S. Rosen, *Reimagining Bleistein: Copyright for Advertisements in Historical Perspective*, 59 J. COPYRIGHT SOC’Y U.S.A. 347, 350–52 (2012).

invented the phonogram in 1877.¹⁵⁸

The first motion pictures were registered for copyright within a few years of when Thomas Edison and W.K.L. Dickson invented the Kinetoscope.¹⁵⁹ The first registration was generally thought to be *The Sneeze*, registered in January of 1894, but research by Claudy Op den Kamp has shown it was actually a scene of blacksmiths working, which was registered in October of 1893.¹⁶⁰ There was initially some confusion about how these were to be registered, but the Librarian of Congress allowed registration if the film was deposited as a series of still images printed on paper.¹⁶¹ This gave rise to the “paper prints,” which were the entire motion picture or the beginning of the motion picture printed to a reel of paper and then sent to the Library of Congress.¹⁶² In 1911, the Supreme Court cast doubt on what exactly was protected through deposit of the motion picture as a photograph, and, in 1912, Congress formally added motion pictures to copyright law.¹⁶³ Republic Pictures would register “Black Sheep’s Wool” for copyright only a few weeks after the bill passed.¹⁶⁴

The ability to capture music and sound and reproduce via mechanical means, both as perforated rolls and recordings, came in the last quarter of the nineteenth century.¹⁶⁵ Most early legal activity in the late nineteenth century was regarding the question of whether a piano roll or recorded cylinder infringed the copyright on the musical composition being recorded.¹⁶⁶ In the early years of the twentieth century, RCA Victor attempted to register a phonographic record

158. *Copyright Theory and History*, U. OF OR. LIBRS., <https://opentext.uoregon.edu/payforplay/chapter/chapter-23-copyright-theory-and-history> [<https://perma.cc/296P-CWFB>] (last visited Jan. 27, 2026).

159. Claudy Op den Kamp, *Paper Print*, in *A HISTORY OF INTELLECTUAL PROPERTY IN 50 OBJECTS*, *supra* note 144, at 145, 147–49.

160. *Scholar at the Library of Congress Identifies the First Motion Picture Ever Copyrighted*, LIBR. OF CONG. (Oct. 13, 2022), <https://newsroom.loc.gov/news/scholar-at-the-library-of-congress-identifies-the-first-motion-picture--ever-copyrighted/s/6b6eace5-b504-4776-82f7-f6c2fc114c18>.

161. *Edison Receives Patent for Kinetographic Camera*, LIBR. OF CONG., <https://www.loc.gov/item/today-in-history/august-31> [<https://perma.cc/CLU4-7EH5>] (last visited Jan. 27, 2026).

162. *Id.* Interestingly, this practice saved many of the earliest silent films from oblivion, as paper is much (much) more stable than the cellulose nitrate film stock in use at the time. *Film-Based Negatives and Positives*, NAT’L ARCHIVES, <https://www.archives.gov/preservation/holdings-maintenance/film-based> [<https://perma.cc/RF6B-BVU4>] (last visited Jan. 27, 2026) (discussing the instability of cellulose nitrate film).

163. *Kalem Co. v. Harper Bros.*, 222 U.S. 55, 61–62 (1911) (discussing the infringement of a copyrighted book by a “moving picture” film); *Townshend Act*, Pub. L. No. 62-303, 37 Stat. 488 (1912); *Metro-Goldwyn-Mayer Distrib. Corp. v. Bijou Theatre Co. of Holyoke*, 3 F. Supp. 66, 72 (D. Mass. 1933) (considering a constitutional challenge to the Townshend Act on the grounds that a motion picture was not the writing of an author and rejecting it).

164. *Black Sheep’s Wool. Motion picture copyright descriptions collection. Class L, 1912-1977*, LIBR. OF CONG., <https://www.loc.gov/item/s1229100001> [<https://perma.cc/6R7G-4MMV>] (last visited Jan. 27, 2026).

165. Zvi S. Rosen, *Common-Law Copyright*, 85 U. CIN. L. REV. 1055, 1077 (2018).

166. *Kennedy v. McTammany*, 33 F. 584, 584 (C.C.D. Mass. 1888) (rolls); *Stern v. Rosey*, 17 App. D.C. 562, 564 (App. D.C. 1901) (No. 1005) (cylinders).

for copyright, and it was rejected as not being copyrightable subject matter.¹⁶⁷ By contrast, the Aeolian company had registered over 2,000 perforated rolls for copyright by early 1908.¹⁶⁸ The key difference seems to have been that the rolls were (in some awkward sense) readable by a person and, thus, could be considered arrangements.¹⁶⁹ A draft bill was proposed to include sound recordings in what would become the 1909 Copyright Act, but a decision of the Supreme Court put those plans on ice.¹⁷⁰

In early 1908, a test case about whether a piano roll infringed the copyright in the underlying musical composition led to a Supreme Court decision in the negative, holding that something is only a copy if it is “in intelligible notation.”¹⁷¹ That decision did not mention the Constitution (and indeed specifically indicated that Congress could change this situation), but it nonetheless cast a pall over attempts to protect phonorecords through copyright. At a hearing a month later, a representative of RCA Victor indicated that the decision “very strongly indicates that the Court does not consider the subjection of [sound recordings] to a copyright act to be constitutional.”¹⁷²

By this point, copyright registration was no longer directly administered by the Librarian of Congress. In 1897, the office of the Register of Copyrights was created within the Library, and what is now the Jefferson Building of the Library of Congress was completed, giving the new Register of Copyrights, Thorvald Solberg, space to administer copyright.¹⁷³ Solberg developed extensive regulations and procedures for the Copyright Office, which would set the tone

167. *Hearings Before the S. Comm. on Patents and the H. Comm. on Patents*, 16th Cong. (1908) (statement of Horace Pettit, Victor Talking Mach. Co.) [hereinafter *Hearings on Patents*], in S. COMM. ON PATENTS & H. COMM. ON PATENTS, REVISION OF COPYRIGHT LAWS: HEARINGS BEFORE THE COMMITTEES ON PATENTS OF THE SENATE AND HOUSE OF REPRESENTATIVES ON PENDING BILLS TO AMEND AND CONSOLIDATE THE ACTS RESPECTING COPYRIGHT 265 (1908). There was some litigation during this period, most notably where the Circuit Court in New York held that copying a record label was actionable but avoided the question of copying the record’s contents. *Victor Talking Mach. Co. v. Armstrong*, 132 F. 711, 712 (C.C.S.D.N.Y. 1904). It also seems likely that the lengthy litigation regarding the various patents in sound reproduction made moot questions of reproducing records. See Christopher Beauchamp, *The First Patent Litigation Explosion*, 125 YALE L.J. 848, 848 (2016).

168. *Hearings on Patents*, in S. COMM. ON PATENTS & H. COMM. ON PATENTS, *supra* note 167, at 345–46 (statement of George W. Pound, General Counsel, DeKleist Musical Instrument Mfg. Co.).

169. Barbara A. Ringer, *Study No. 26: The Unauthorized Duplication of Sound Recordings*, in STUDIES PREPARED FOR THE SUBCOMMITTEE ON PATENTS, TRADEMARKS, AND COPYRIGHTS OF THE COMMITTEE ON THE JUDICIARY UNITED STATES SENATE EIGHTY-SIXTH CONGRESS, SECOND SESSION PURSUANT TO S. RES. 240, at 3 (1961).

170. *Id.* at 3–4.

171. *White-Smith Music Pub. Co. v. Apollo Co.*, 209 U.S. 1, 17 (1908); Gerardo Con Díaz, *Encoding Music: Perforated Paper, Copyright Law, and the Legibility of Code, 1880–1908*, 71 CASE W. RES. L. REV. 627, 653 (2020).

172. *Hearings on Patents*, in S. COMM. ON PATENTS & H. COMM. ON PATENTS, *supra* note 167, at 265 (statement of Horace Pettit, Victor Talking Mach. Co.).

173. Wendi A. Maloney, “Copyright Department” Headed by Register Opens Doors in 1897, COPYRIGHT NOTICES, Mar.–Apr. 2013, at 24.

for the twentieth century.¹⁷⁴

During the early years of the twentieth century, the Copyright Office did not register sound recordings for copyright, although it was at various times unclear if the issue was constitutional or statutory.¹⁷⁵ During the 1930s, a number of major bandleaders attempted to change this, and after the Copyright Office was unpersuaded, they (sometimes successfully) turned to the argument that there was a common-law right in the recording as reflecting the artist's performance, unbound from the requirement of authorship of a writing.¹⁷⁶ In 1945, Zechariah Chaffee argued that there was no constitutional impediment to construing "writings" broadly, just as "commerce" was to be construed broadly, and that argument was generally accepted.¹⁷⁷ Chaffee also acknowledged that determining who exactly was the "author" of the sound recording might be difficult and urged a resolution at the coming comprehensive revision of the copyright law—not realizing it would take another thirty-one years to become law.¹⁷⁸ After all, who is the "author" of the recording—the person operating the tape machine, the producer in the control room, the conductor of the orchestra, the person singing, the members of the orchestra, or all of the above? Does someone singing into a microphone constitute authorship? Although a solution was eventually devised, it is anything but simple.¹⁷⁹

Over the course of the early twentieth century, copyright issues came and went, but constitutional issues were usually not on the forefront, with Congress focused on questions mostly of international copyright, and the Copyright Office going through a period of modernization under Register of Copyrights Clement Bouvé in the latter 1930s. World War II of course delayed modernization, but with the end of the war and the return of staff, the Copyright Office reorganized into divisions and was prepared to handle the new era with America as a cultural superpower. With that came unlikely questions about music and art, which presaged the question of computer-generated works.

B. Randomness in Art

The idea of art reflecting randomness was particularly in vogue in the mid-

174. *Id.*

175. *See, e.g.,* *Waring v. WDAS Broad. Station, Inc.*, 194 A. 631, 634 n.2 (Pa. 1937) (quoting the Register of Copyrights stating that "There is not and never has been any provision in the Act for the protection of an artist's personal interpretation or rendition of a musical work not expressible by musical notation in the form of 'legible' copies although the subject has been extensively discussed both here and abroad."). Strangely, the Copyright Office had registrations of piano rolls as arrangements of music, and courts would also find them protectible under copyright law. *Aeolian Co. v. Royal Music Roll Co.*, 196 F. 926, 927 (W.D.N.Y. 1912).

176. *Aeolian Co.*, 196 F. at 927; Rosen, *supra* note 165, at 1086–92.

177. Zechariah Chaffee, Jr., *Reflections on the Law of Copyright: II*, 45 COLUM. L. REV. 719, 735–36 (1945).

178. *Id.* at 736–37.

179. *Author(s) of the Sound Recordings*, U.S. COPYRIGHT OFF., <https://www.copyright.gov/eco/gram-sr/author.html> [<https://perma.cc/9RD8-PTL2>] (last visited Jan 27, 2025).

twentieth century.¹⁸⁰ One example was the experiments in art and randomness being done by Jean Arp and Marcel Duchamp in the Dada movement.¹⁸¹ Robert Rauschenberg's *Erased de Kooning Drawing* was influential in further exploring how an absence of expression was itself expression.¹⁸²

A much more prosaic example would find its way to litigation when the Copyright Office declined to register the *Montina* flooring design of the Armstrong Cork Co., where each tile was different and the result of randomly dropping vinyl chips into a solution that would harden.¹⁸³ The Copyright Office denied registration because "no two segments of the flooring can be identical since there is no fixed design."¹⁸⁴ A suit was brought to challenge this denial, but it was dropped when it became clear that Armstrong Cork would need to reveal secrets of the process of making the tiles in litigation.¹⁸⁵

C. Aleatory Music

The work being done by Rauschenberg and others would find expression musically in the development of indeterminate and aleatory music. This music led naturally to the introduction of computers and what we would now call AI composition.

Randomness in music is nothing new—musical dice games go back centuries, with Mozart's being among the most famous.¹⁸⁶ But while Mozart is clearly the author of the game system, is he the composer of all possible outcomes of the game? Typically speaking, copyright law protects the text and visual elements of a game, but "copyright does not protect the idea for a game,

180. See Alan R. Durham, *The Random Muse: Authorship and Indeterminacy*, 44 WM. & MARY L. REV. 569 (2002) (giving a more theoretical discussion of these issues).

181. *Id.* at 597–99.

182. Sarah Roberts, *Rauschenberg Research Project*, SFMOMA (July 2013), <https://www.sfmoma.org/artwork/98.298/essay/erased-de-kooning-drawing/> [<https://perma.cc/76SG-9TSR>].

183. U.S. COPYRIGHT OFF., SIXTY-SEVENTH ANNUAL REPORT OF THE REGISTER OF COPYRIGHTS FOR THE FISCAL YEAR ENDING JUNE 30, 1964, at 7 (1965), <https://www.copyright.gov/reports/annual/archive/ar-1964.pdf> [<https://perma.cc/B5QT-3766>]. Armstrong Cork already had a patent for making such material, and questions of overlap may have been an issue. *Patents Assigned to Armstrong Cork Company*, JUSTIA PATENTS, <https://patents.justia.com/assignee/armstrong-cork-company> (last visited Jan. 30, 2026).

184. U.S. COPYRIGHT OFF., *supra* note 183, at 7. This is something of a reminder that for some works, problems of fixation are inevitably tied to problems of authorship. This is in some ways along the lines of the decision of the Copyright Office not to accept registration for prompts to cover the AI output in its January 2025 Report. U.S. COPYRIGHT OFF., *supra* note 2.

185. Complaint, *Armstrong Cork Co. v. Kaminstein*, No. 119-64 (D.D.C. Jan. 16, 1964); U.S. COPYRIGHT OFF., *supra* note 119, at 8.

186. DAVID COPE, *VIRTUAL MUSIC 4* (2001). An interactive version of this game can be played online. *Mozart Dice Game Online*, PLAY ONLINE DICE GAMES <https://www.playonlinedicegames.com/mozart> (last visited Jan. 30, 2026). The credit of the game to Mozart is questionable, but that is not per se relevant here. Paul Griffiths, *Aleatory*, GROVE MUSIC ONLINE (2001), <https://www.oxfordmusiconline.com/grovemusic/display/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-0000000509#omo-9781561592630-e-0000000509> [<https://doi.org/10.1093/gmo/9781561592630.article.00509>]. Other examples go back even farther. See Joel Lester, *Composition Made Easy: Bontempi's Nova methodus of 1660*, 7 THEORIA 87 (1993).

the name or title of a game, or the procedure, process, or method of operation for playing a game.”¹⁸⁷ Accordingly, while the game’s textual rules are copyrightable, the system for playing the game is not.

Following antecedents in the 1930s, John Cage’s *Music of Changes* from 1951 was a milestone in the development of aleatory music, “which allows the players to assemble the music from fragments provided . . . [using] ‘elastic’ . . . notations to introduce chance or choice into the performance.”¹⁸⁸ Cage’s central “idea was to remove from music any reference to tradition or any trace of subjectivity, and chance, not choice, was the obvious means.”¹⁸⁹ This reached “an extreme point” with *4’33”* the following year, where the performer is instructed to remain silent for the duration of the piece, thereby allowing ambient sounds to become the focus of the musical experience.¹⁹⁰ European composers would be more cautious in adopting aleatory methods, where, for instance, Karlheinz Stockhausen’s *Klavierstück XI* introduced elements of indeterminacy, providing limited freedom but only in the ordering of composed sections.¹⁹¹ Following an “explosion of interest in the late 1960s . . . aleatory music became a dead or at least dormant issue” in the serious music world.¹⁹²

Cage did not immediately register the copyright in these early aleatory works, waiting almost a decade for Henmar Press to publish a facsimile of his score for *Music of Changes* and register the copyright in 1961, which the Copyright Office accepted and registered as a published musical work.¹⁹³ However, the Copyright Office also refused to accept some of Cage’s works for registration, at least as music. Two works—*4’33”* and *Forever and Sunsmell*—were published on April 25, 1960, and applications were received by the Copyright Office in November of 1965.¹⁹⁴ *Forever and Sunsmell* was registered as a published musical work shortly thereafter and appears in the Catalog of Copyright Entries for Music registered July–December 1965.¹⁹⁵ However, *4’33”* was not. Instead, it was registered as a textual work much later.¹⁹⁶ The same was done for some of Cage’s other works, such as his *Music for amplified toy pianos* and *0’00”*.¹⁹⁷ The fact that *0’00”* was given a registration number consecutive with the one given to *4’33”* even though *0’00”* was applied for over two years later is a clue that these registrations were not processed immediately. These registrations appear on pages 181 to 182 of the Catalog of Copyright

187. U.S. COPYRIGHT OFF., *supra* note 22, § 714.

188. Griffiths, *supra* note 186.

189. *Id.*

190. *Id.*

191. *Id.*

192. *Id.*

193. MUSIC OF CHANGES, Registration No. EP177020.

194. *Forever and Sunsmell* is described as a song with a percussion duet, with words from a poem by E.E. Cummings.

195. FOREVER AND SUNSMELL, Registration No. EP210210; U.S. COPYRIGHT OFF., CATALOG OF COPYRIGHT ENTRIES: THIRD SERIES: MUSIC: JULY–DECEMBER 1965, at 1598 (1967).

196. *4’33”*, Registration No. A1074.

197. MUSIC FOR AMPLIFIED TOY PIANOS, Registration No. A1065; *0’00”*, Registration No. A1073.

Entries for the first half of 1968, indicating that they were not approved for registration until then.¹⁹⁸ Looking at the applications for registration, which have recently been digitized, shows that these applications were filed June 10, 1968, but the fee and deposit of two copies was made three years earlier—on November 24, 1965.¹⁹⁹ This is a bit of a mystery: the applications received almost three years after the deposit, and an application to register 4'33" would have been required in 1965 with the deposit.

In a stroke of luck, the longtime head of the Music Section of the Copyright Office Examining Division, Dorothy Pennington Keziah, gave us a full account of the decision to register such music that did not have full human authorship, noting that

since it is the sound and not the notations themselves that constitute the subject matter of a musical copyright, and since indeterminate works such as these do not contain fixed sounds that are the result of original creative thought, it does not appear that such works would qualify for registration in Class E as musical compositions, either in unpublished or published form. Granted, compositional techniques merge and overlap, even in a single composition; and, with the scores as complex and technical as some are, an examination to distinguish textual scores that sufficiently fix the musical sounds from those that do not would involve some difficulties. Certainly, any borderline cases should be resolved in favor of registration in Class E. However, it seems clear that where the textual description does not sufficiently fix at least a minimal amount of the original sounds in the work, registration would more appropriately be made, if the work were published with notice, in Class A as a "book."²⁰⁰

Keziah explains this is no different from the longstanding practice of refusing to register nondramatic choreographic works as dramatic works.²⁰¹ As Keziah notes, the registration of these works as textual, rather than musical, works

198. U.S. COPYRIGHT OFF., CATALOG OF COPYRIGHT ENTRIES: THIRD SERIES: BOOKS AND PAMPHLETS INCLUDING SERIALS AND CONTRIBUTIONS TO PERIODICALS CURRENT AND RENEWAL REGISTRATIONS JANUARY–JUNE 1968, at 181 (1971). The oldest other work on these pages is from the summer of 1967, while the vast majority are from December of 1967 or from early 1968.

199. *Image 135 of Copyright Record Book Class A Vol 1999; Registration Numbers 1000-1499; 1968*, LIBR. OF CONG. <https://www.loc.gov/resource/coprecbooks.00501282248/?sp=135&st=image> [<https://perma.cc/84CH-B6R3>] (last visited Jan. 27, 2025). Pages 135 to 160 are the John Cage applications for registration as textual works; the dates are on the second page of each application.

200. Dorothy Pennington Keziah, *Copyright Registration for Aleatory and Indeterminate Musical Compositions*, 17 BULL. COPYRIGHT SOC'Y U.S.A. 311, 354 (1970).

201. *Id.* at 354 n.129; Zvi S. Rosen, *Fuller v. Bemis and the Failed Prehistory of Choreographic Copyright*, MOSTLY IP HIST. (Mar. 30, 2023), <https://mostlyiphistory.com/2023/03/30/fuller-v-bemis-and-the-failed-prehistory-of-choreographic-copyright/> [<https://perma.cc/968F-F6FK>].

impacts the ability to recover for public performances of the work.²⁰² Keziah's article came out in 1970 but was presumably written earlier, and as she was the one who made the decision not to register these works as musical compositions, it represents the best account we are likely to have of this debate—although it is a shame that more insight into the Copyright Office's internal discussions and history is not given.²⁰³ Similarly, Ralph Oman, the Register of Copyrights, asserted that Samuel Beckett's play *Breath*, written in 1970, was not copyrightable:

It is only 30 seconds long, and has no words and no actors. Normally Beckett wrote in [F]rench, but whether he did so in *Breath* is unclear. As that renowned copyright lawyer, Fulton Brylawski Senior, said many years ago, "I didn't say it wasn't art; I just said it wasn't copyrightable."²⁰⁴

From all this, it seems clear that the Copyright Office had denied the registration of 4'33" as music but had allowed them to reapply to register it as a textual work, which was then accepted. However, if 4'33" had been unpublished, copyright registration would not have been available.

In addition to experiments with using computers, Cage continued to produce aleatory works in his more traditional vein, and, in 1977, the Copyright Office contacted his publisher regarding the application to register the work *Renga*.²⁰⁵ *Renga* was composed by Cage for a combination of seventy-eight instruments or voices and premiered in Boston in September of 1976.²⁰⁶ Although a score typically involves musical notations, *Renga*'s score is comprised of 361 images

202. Keziah, *supra* note 200, at 354–56. It is interesting that the Cage Trust has threatened litigation over 4'33"; it would have been interesting if it would have gone through. Jeremy Phillips, *The price of silence and the myth of the Batt Cage*, THE IPKAT (Apr. 19, 2012), <https://ipkitten.blogspot.com/2012/04/price-of-silence-and-myth-of-batt-cage.html> [https://perma.cc/A4Q7-F4AT]. An ongoing lawsuit regarding the work of stand-up comedians on Spotify might actually raise similar legal issues since it involves performance of textual works via a music streaming system. Johnathon Bailey, *Why Spotify Removed So Many Comedy Albums*, PLAGIARISM TODAY (Dec. 8, 2021), <https://www.plagiarismtoday.com/2021/12/08/why-spotify-removed-so-many-comedy-albums/> [https://perma.cc/C6DN-LCQA].

203. Interestingly, Keziah's article has barely been cited up to this point, and the copyrightability of aleatory music has largely not been considered in this context. There has been some scholarship on the copyrightability of 4'33" under the copyright laws of the United Kingdom. Cheng Lim Saw, *Protecting the Sound of Silence in 4'33"—A Timely Revisit of Basic Principles in Copyright Law*, 27 EUR. INTEL. PROP. REV. 467 (2005); David M. Seymour, *This is the Piece that Everyone Here Has Come to Experience: The Challenges to Copyright of John Cage's 4'33"*, 33 LEGAL STUD. 532 (2013).

204. Ralph Oman, *The Copyright Clause: "A Character for Living People"*, 17 U. BAL. L. REV. 99, 106–07 (1987).

205. Letter from Mildred Henninger, Acting Head, Music Section, Examining Div., U.S. Copyright Off., to Gertrud Mathys, C.F. Peters Corp. (Aug. 3, 1977) (on file with the John Cage Collection at Northwestern University and on file with author).

206. *Renga*, JOHN CAGE, https://www.data-johncage.org/pp/John-Cage-Work-Detail.cfm?work_ID=162 [https://perma.cc/E9Y7-FCZX] (last visited Jan. 27, 2025).

drawn by Henry David Thoreau.²⁰⁷ These images were “distributed in systems using the 5-7-5-7-7 structure of Japanese Renga poetry,” and when performing *Renga*, the images are to be “interpreted by the performers.”²⁰⁸ Cage created *Renga*’s score while using the *I Ching* chance operation process to determine the placement of the images in a space.²⁰⁹

From his early conception of *Renga*, Cage intended the piece to be performed at the same time as *Apartment House 1776*, which is another composition of his.²¹⁰ With the two pieces being performed simultaneously, Cage was encouraged to produce a score for *Renga* that used “graphic notation rather than conventional musical notion” as a means to avoid traditional elements of music in contrast to *Apartment House 1776*.²¹¹

The Copyright Office noted that on subsequent review, it “still [found] it hard to determine the extent of Cage’s authorship.”²¹² They asked for an explanation of the score and noted that they had heard a performance of the work on the radio, but although “[t]here certainly was musical authorship, . . . how much was Cage’s and how much the orchestra’s was hard to tell.”²¹³

The letter from the Copyright Office was referred to Cage, and he responded directly, noting that

Should the orchestra play without the materials that I have made, they would not produce the sounds they produce when they have these materials. Furthermore, when these materials go to another orchestra, the work remains, though changed with respect to details, clearly itself, recognizable, and not sounding like music by some other composer.²¹⁴

This apparently satisfied the copyright office, and the work was registered with an effective date of December 19, 1977.²¹⁵

Another work that Keziah spends a substantial amount of time discussing is *Opera Sextronique* by Nam June Paik. The work, which involved Paik and a variously clothed Charlotte Moorman playing, inter alia, the cello, was well known for Moorman’s arrest during a performance in 1967.²¹⁶ Paik’s aleatory piano work at the “happening” was never registered for copyright, and I was unable to find any evidence of a registration application, but seeing as all rejected applications have been discarded from this period, that proves little.

207. *Id.*

208. *Id.*

209. Letter from John Cage to Mildred Henninger (Nov. 14, 1977) (on file with the John Cage Collection at Northwestern University).

210. *Id.*

211. *Id.*

212. Letter from Mildred Henninger to Gertrud Mathys, *supra* note 205.

213. *Id.*

214. Letter from John Cage to Mildred Henniger, *supra* note 209, at 2.

215. This would be the application date of the copyright application, so it is possible Cage’s publisher was asked to file a revised application.

216. JOAN ROTHFUSS, *TOPLESS CELLIST: THE IMPROBABLE LIFE OF CHARLOTTE MOORMAN* 177 (2014).

The fact that Keziah dwells on Paik's work at length whets curiosity that this was one of the unpublished works for which registration as text was denied, and that will have to suffice.²¹⁷ For himself, Paik simply commented, "Is it music? Well, it is not not music."²¹⁸

For purposes of copyright law, the protectability of the work would be inversely proportional to the amount of choice given to the performer, and a work with no music but simply general instructions for improvisation would not be registrable. The stage was set for the next phase of questions of authorship.²¹⁹

D. Animal Authors

Unlike the above, the issue of animal authors has been written about many times before, but it still should be mentioned. The case people generally talk about is the famous "Monkey Selfie" case, although the actual decision had more to do with federal civil procedure than copyright.

In 2011, wildlife photographer David Slater visited a reserve located on the island of Sulawesi, Indonesia, to photograph wildlife on the island.²²⁰ While following a troop of crested macaque monkeys, Slater attempted to capture close-up shots of the monkeys' faces.²²¹ The monkeys, however, refused to allow him to get close enough.²²²

Despite their shyness, the monkeys expressed an interest in Slater's camera and equipment.²²³ Recognizing this, Slater placed his camera on a tripod and left it unattended.²²⁴ Naruto, one of the crested macaque monkeys in the troop that Slater was trying to photograph, then went up to Slater's camera and took numerous "selfies" of himself.²²⁵

217. Paik's papers at the Smithsonian and Moorman's papers at Northwestern both were equally unavailing, and the Smithsonian noted that "Nam June Paik did not keep organized or detailed project files." E-mail from Hannah Pacious, Paik Archive Collection Coordinator, Rsch. and Scholars Ctr., Smithsonian Am. Art Museum, to author (May 21, 2025) (on file with author).

218. David Sodi, *It's Not Not Art: An Interview with the Curators of Nam June Paik*, SFMOMA (Mar. 2021), <https://www.sfmoma.org/read/its-not-not-art/> [https://perma.cc/MJ3R-NPJQ]

219. Also involved may be questions of conceptual artists like Sol Lewitt, which have typically more involved contract law but raise similar questions of authorship. Richard Chused, "Temporary" *Conceptual Art: Property and Copyright, Hopes and Prayers*, 45 RUTGERS COMPUT. & TECH. L.J. 1 (2019); Peter J. Karol, *Permissive Certificates: Collectors of Art as Collectors of Permissions*, 94 WASH. L. REV. 1175 (2019).

220. Andres Guadamuz, *Can the monkey selfie case teach us anything about copyright law?*, WIPO (Feb. 21, 2018), https://www.wipo.int/wipo_magazine/en/2018/01/article_0007.html [https://perma.cc/F5AP-64CJ].

221. *Id.*

222. *Id.*

223. *Id.*

224. *Id.*; *Naruto v. Slater*, 888 F.3d 418, 420 (9th Cir. 2018).

225. *Naruto*, 888 F.3d at 420. ("Naruto allegedly took several photographs of himself . . . with Slater's camera.")

Slater licensed the photos to Caters News Agency Ltd. for licensing.²²⁶ He also self-published Naruto's selfies in the book *Wildlife Personalities* in December 2014.²²⁷ The book lists Slater and his company Wildlife Personalities, Ltd. as the copyright holders of Naruto's selfies.²²⁸ Throughout the book, however, Slater explains that Naruto took the photographs himself while smiling and pressing the camera's shutter button.²²⁹

In 2011, the image was shared on Wikimedia Commons, and Slater requested that the website take down the image.²³⁰ It was further shared on the website Techdirt, along with some commentary on the copyrightability of the image because it was putatively taken by a monkey.²³¹ Caters asked Techdirt to take down the photos shortly thereafter, bringing attention to the copyright issue.²³² In 2014, the Copyright Office's draft revision to the Compendium made clear that a photo taken by a monkey was not copyrightable, choosing this situation as a specific example.²³³

Following this, People for the Ethical Treatment of Animals (PETA) and Dr. Antje Engelhardt filed a complaint for copyright infringement against Slater, Wildlife Personalities, Ltd., and Blurb, Inc., as next of friends—which allows a suit to be brought for someone who does not maintain the capacity to sue—on behalf of Naruto.²³⁴ Further, the complaint also alleges that Slater's infringements on Naruto's copyrights caused him to suffer “concrete and particularized economic harms,” which can be redressed by “declaring Naruto

226. Mike Masnick, *Monkey Business: Can A Monkey License Its Copyrights to A News Agency?*, TECHDIRT (July 7, 2011, at 7:32 ET), <https://www.techdirt.com/2011/07/07/monkey-business-can-monkey-license-its-copyrights-to-news-agency/> [https://perma.cc/BGR2-G2AE].

227. Zachary Toliver, *Settlement Reached: 'Monkey Selfie' Case Broke New Ground for Animal Rights*, PETA (Sep. 15, 2017), <https://www.peta.org/blog/settlement-reached-monkey-selfie-case-broke-new-ground-animal-rights/> [https://perma.cc/8UG6-TGZ7]; see Guadamuz, *supra* note 220.

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

229. Paulia Julia Perkal, *Monkey business finally settled: the 'monkey selfie' disputes*, KLUWER COPYRIGHT BLOG (Feb. 5, 2018), <https://legalblogs.wolterskluwer.com/copyright-blog/monkey-business-finally-settled-the-monkey-selfie-disputes/> [https://perma.cc/YKW5-9DV6].

230. *Photographer 'lost £10,000' in Wikipedia monkey 'selfie' row*, BBC (Aug. 7, 2014), <https://www.bbc.com/news/uk-england-gloucestershire-28674167> [https://perma.cc/AE3T-UCZZ].

231. *Id.*

232. Mike Masnick, *Monkeys Don't Do Fair Use; News Agency Tells Techdirt To Remove Photos*, TECHDIRT (July 12, 2011, at 11:08 ET), <https://www.techdirt.com/2011/07/12/monkeys-dont-do-fair-use-news-agency-tells-techdirt-to-remove-photos/> [https://perma.cc/F3D9-4DFH].

233. Maria A. Pallante, *From Monkey Selfies to Open Source: The Essential Interplay of Creative Culture, Technology, Copyright Office Practice, and the Law*, 12 WASH. J. L. TECH. & ARTS 123, 127 (2017).

234. See *Naruto*, 888 F.3d at 420–22; Ashley Cullins, *'Monkey Selfie' Heads to Appeals Court Amid Legal Circus Between PETA and Primate Expert*, THE HOLLYWOOD REP. (July 12, 2017, at 8:00 ET), <https://www.hollywoodreporter.com/business/business-news/monkey-selfie-heads-appeals-court-legal-circus-between-peta-primate-expert-1020220/> [https://perma.cc/QU56-8EKY] (explaining that Antje Engelhardt is a U.K.-based primatologist who was “familiar” with Naruto and has studied macaques since the 1990s. She joined the suit after being approached by PETA).

as the author and owner of” the photographs.²³⁵ The district court, however, found that Naruto did not adequately establish standing under the Copyright Act.²³⁶

On appeal, the Ninth Circuit was tasked with determining “whether a monkey may sue humans, corporations, and companies for damages and injunctive relief” for copyright infringement; the Ninth Circuit Court of Appeals declined to find in favor of Naruto.²³⁷ The Court adhered to the precedent established in *Cetacean Community v. Bush*, where the Court held that if an Act of Congress does not “plainly state” that animals have statutory standing, “then animals do not have statutory standing.”²³⁸ The Court reasoned that, while some congressional acts may give rights to animals, Congress used language in the Copyright Act that implies that there is a human aspect to copyright ownership.²³⁹ Thus, animals are excluded from the Copyright Act.²⁴⁰

Applying this logic and the text of the Copyright Act, the Ninth Circuit affirmed that animals do not have standing to sue under the Copyright Act nor the ability to maintain ownership over a work of authorship.²⁴¹

III. COPYRIGHT AND THE EARLIEST COMPUTER WORKS

As can be imagined, the techniques of aleatory music could be coupled with a computer to generate creative works without human involvement. All that was needed was a programmable computer capable of handling the complexity of the requisite algorithms and someone to program it. As computer output technology developed, abstract visual art proved fertile ground for the first generation of artists to experiment with programming computers to make art.

A. *The Origins of Modern Computing*

The birth of modern computing can be traced back to the Electronic Numerical Integrator and Computer (ENIAC), developed during World War II. ENIAC, completed in 1945, was the world’s “first electronic, general purpose, large scale” digital computer.²⁴² Commissioned by the United States Army for artillery calculations, ENIAC was a massive machine comprised of thousands of vacuum tubes and occupied an entire room. Despite its size and complexity, ENIAC demonstrated the potential of electronic computing and set the stage for further advancements in the field.

235. *Naruto*, 888 F.3d at 424.

236. *Id.* at 421.

237. *Id.* at 420, 426.

238. *Id.* at 425–26 (citing *Cetacean Cmty. v. Bush*, 386 F.3d 1169, 1179 (9th Cir. 2004)) (finding that animals do not have standing to sue if Congress did not explicitly grant it to them).

239. *See id.* at 426.

240. *Id.*

241. *Id.* (“Naruto lacks statutory standing to sue under the Copyright Act.”).

242. THOMAS HAIGH, MARK PRIESTLEY & CRISPIN ROPE, *ENIAC IN ACTION: MAKING AND REMAKING THE MODERN COMPUTER* 7 (2016).

Following the success of ENIAC, researchers began to explore new avenues for improving computational efficiency and versatility. This led to the development of stored program computers, which allowed instructions and data to be stored in the computer's memory. The 1950s saw the emergence of transistors as a viable alternative to vacuum tubes in computing technology. Transistors, which were smaller, more reliable, and consumed less power than vacuum tubes, revolutionized the design of electronic computers.

Completed in 1952 and using 2,800 vacuum tubes, ILLIAC was primarily used for numerical calculations, including weather prediction, nuclear physics research, and fluid dynamics simulations at the University of Illinois.²⁴³ As demonstrated below, the first ILLIAC Computer was also used to create what is almost certainly the first computer-generated work registered for copyright.

The development of transistors paved the way for the development of smaller, faster, and more efficient computers.²⁴⁴ Companies like IBM dominated the mainframe market during this period, and the IBM 7090—launched in 1959—was one of IBM's flagship mainframe computers and its first with transistorized logic. Although it is remembered more for its role in the space program, the 7090 was also among the most important early computers to AI copyright.

The 7090 featured transistorized components and core memory, making it faster and more reliable than its vacuum tube-based predecessors. Its architecture also supported a wide range of scientific and engineering applications, positioning it as a versatile solution for computational tasks. The IBM 7090 quickly gained traction in the marketplace, attracting customers from academia, government, and industry sectors. Its high performance, reliability, and compatibility with existing software systems made it a popular choice for organizations seeking to leverage computing technology for various applications. The 7090's success helped solidify IBM's position as a leading provider of mainframe computers and paved the way for subsequent advancements in the company's product lineup.²⁴⁵

As this was ongoing, technological developments also occurred in printing, allowing for more complex expression of computer outputs beyond punch cards or teletype. For instance, the Stromberg-Carlson SC4020 was a microfilm printer and plotter that was integral to the development of computer art, which allowed for much greater expression of what was visualized by the machine than would otherwise be possible.²⁴⁶

The 1960s witnessed the widespread adoption of mainframe computers by businesses, higher education, and government agencies. These powerful machines—capable of processing large volumes of data and running complex

243. *Illiac I*, UNIV. OF ILL. URBANA-CHAMPAIGN, <https://physics.illinois.edu/people/history/ILLIAC-I> [<https://perma.cc/AZ9E-S5UD>] (last accessed Feb. 24, 2026).

244. *See generally* MARTIN CAMPBELL-KELLY & WILLIAM ASPRAY, *COMPUTER: A HISTORY OF THE INFORMATION MACHINE* (3d ed. 2013).

245. CHARLES J. BASHE ET AL., *IBM'S EARLY COMPUTERS* 448–49 (1986).

246. *See generally* ZABET PATTERSON, *PERIPHERAL VISION: BELL LABS, THE S-C 4020, AND THE ORIGINS OF COMPUTER ART* (2015).

applications—revolutionized the way organizations conducted their operations. As this was happening, the bar began to realize that these computers could be trained to produce new copyrighted works; in 1964, copyright lawyer George Schiffer noted that “the utilization of portions of material fed into a computer for the creation of other works must be anticipated on a very large scale.”²⁴⁷

B. Computer Software

As these innovations continued, questions arose as to whether the programs being written for these machines were copyrightable.²⁴⁸ The first known attempt to register a computer program for copyright was in 1961, when North American Aviation filed a registration for a program written for the Autonetics Recomp II on magnetic tape.²⁴⁹ That work was not registered immediately, and the Copyright Office began an investigation of whether software was copyrightable in response.²⁵⁰ While the issue was being considered, other attempts to register came in, and in April of 1964, John Banzhaf, then a law student at Columbia, filed two short programs with the Copyright Office, one of which had been published in the Columbia Law School News.²⁵¹ This was recognizable as an existing form of copyrightable work (a textual contribution to a periodical), and it provided some clarity to the Copyright Office.²⁵² In May of 1964, the Copyright Office put out the first version of what is now Circular 61 for copyright registration of computer programs.²⁵³

In these guidelines, the Copyright Office noted that the question of “[w]hether a program as such is the ‘writing of an author’ and thus copyrightable” was a “doubtful question[.]”²⁵⁴ Nonetheless, “in accordance with its policy of resolving doubtful issues in favor of registration wherever possible,” the Copyright Office agreed to consider registrations where there was “sufficient original authorship.”²⁵⁵ Although there were misgivings about the quantum of authorship in a computer program, the Copyright Office was “keeping with its policy of giving the applicant the benefit of the doubt wherever possible.”²⁵⁶

247. George Schiffer, *Computers and Copyright Law Revision*, 11 BULL. COPYRIGHT SOC’Y U.S.A. 404, 407 (1964).

248. U.S. COPYRIGHT OFF., *Copyright Registration for Computer Programs – Announcement from the Copyright Office*, 11 BULL. COPYRIGHT SOC’Y U.S.A. 361, 361 (1964). This section is partially adapted from my blog post. Zvi S. Rosen, *Fifty-Five Years of Software Copyright*, MOSTLY IP HIST. (May. 19, 2019), <https://mostlyiphistory.com/2019/05/19/fifty-five-years-of-software-copyright/> [<https://perma.cc/5PHQ-DYRM>].

249. George D. Cary, *Copyright Registration and Computer Programs*, 11 BULL. COPYRIGHT SOC’Y U.S.A. 362, 363 (1964).

250. *Id.* at 363–64.

251. *Id.* at 363.

252. *Computer Program Copyrighted for First Time; Columbia Law Student Gets Approval for Plans—Sees Wide Industry Impact*, N.Y. TIMES, May 8, 1964, at 51.

253. Rosen, *supra* note 248.

254. *Id.*

255. *Id.*

256. Cary, *supra* note 249, at 365.

Copyright registration for computer programs has continued since then, although not without controversy. In 1970 then-Professor Stephen Breyer published *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*,²⁵⁷ and one can see echoes of it in one his final opinions as a Supreme Court Justice, *Google v. Oracle*, holding that it was fair use to copy significant parts of a computer programming language.²⁵⁸ In 1978, the Commission on New Technological Uses of Copyrighted Works (CONTU) issued its final report recommending that computer programs receive copyright protection; this report was implemented into law in 1980, establishing previous copyright office practices into law.²⁵⁹ Computer software registrations continue to this day, although that grant may be subject to the “rule of doubt” if the Copyright Office is unable to properly examine the work in full.²⁶⁰

One area where questions of authorship persisted is computer games. Since the user controls the experience, the perceived experience of the user is not fully within the control of the game’s creators. Before 1978, Atari had the practice of registering the circuit boards for its games as technical drawings or registering the manuals as text.²⁶¹ Years later, Atari attempted to register the game Breakout for copyright as an audiovisual work, but registration was denied on the grounds that the “images . . . created by playing the video game . . . are also not registrable since they are created randomly by the player and not by the author of the video game.”²⁶² Although the district court upheld the denial of registration, the circuit court reversed, finding there was sufficient authorship even if the player can “choose one of the limited number of sequences the game allows him to choose.”²⁶³

It is significant that many of the discussions about registration of computer programs were happening at the same time as conversations about registration of computer-generated works. While the issues are not quite co-extensive, they are certainly overlapping.

257. Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281 (1970).

258. *Google LLC v. Oracle Am. Inc.*, 593 U.S. 1, 40 (2021).

259. NAT’L COMM’N NEW TECH. USES OF COPYRIGHTED WORKS, FINAL REPORT (1978), <https://bpb-us-e2.wpmucdn.com/websites.umass.edu/dist/f/25833/files/2018/05/CONTU-compiled.pdf> [<https://perma.cc/QM9Q-RQJH>]; Computer Software Copyright Act of 1980, Pub. L. No. 96-517, 94 Stat. 3015, 3028; GERARDO CON DÍAZ, SOFTWARE RIGHTS: HOW PATENT LAW TRANSFORMED SOFTWARE DEVELOPMENT IN AMERICA 122 (2019).

260. U.S. COPYRIGHT OFF., *supra* note 22, § 607.

261. Atari Corporation, *Atari Copyright Registrations 1975–1977*, INTERNET ARCHIVE (May 12, 2020, at 17:30 ET), <https://archive.org/details/atari-copyright-registrations> [<https://perma.cc/S977-N78Q>].

262. *Atari Games Corp. v. Oman*, 888 F.2d 878, 879–80 (D.C. Cir. 1989) (discussing the letter dated February 13, 1987, from Copyright Examiner Carmen Martorana to Atari). The Copyright Office noted that the game could be registered as a textual work, but presumably Atari wanted protection on a visual basis.

263. *Id.* at 884 (quoting *Williams Elecs., Inc. v. Artic Int’l, Inc.*, 685 F.2d 870, 874 (3d Cir. 1982)).

C. Computer Music

Among the first music played by computer was in 1951, when Alan Turing's student Christopher Strachey programmed a computer to play the British National Anthem.²⁶⁴ In the early 1950s, two researchers at RCA developed "The Music Composing Machine," which was trained on eleven of Stephen Foster's compositions and could generate "Fosterlike tunes."²⁶⁵ In 1957, songwriter Jack Owens wrote the words to a song *Pushbutton Bertha*, which was set to the tune of a melody written by the Datatron Computer.²⁶⁶ One article at the time mentions that the "Library of Congress refuse[d] to issue a copyright" for the song because the music was written by computer, although records of rejected registrations from this period are sadly lost.²⁶⁷ However, the innovator who most prominently combined the methods of aleatory music with the power of programmable computers was Lejaren Hiller.²⁶⁸ By translating musical patterns into mathematics, Hiller sought to determine whether digital computers possess the ability to create music when following the "rules" of musical composition.²⁶⁹

Born in 1924 in New York City, Hiller showed an affinity towards music and studied piano and composition from an early age.²⁷⁰ Despite his apparent aptitude for music, Hiller also maintained an interest in chemistry and pursued an education at Princeton University, where he earned his bachelor's, master's, and doctorate degree in chemistry, while also continuing to study composition under Milton Babbitt and Roger Sessions.²⁷¹ Upon completion of his Ph.D. in 1947, Hiller then conducted research as a chemist for DuPont in Waynesboro, Virginia, before joining the University of Illinois's faculty in the chemistry department.²⁷² Simultaneously, Hiller pursued a master's degree in music from the University of Illinois.²⁷³

Hiller's experiments with electronic music began during his time in the chemistry department at the University of Illinois which led to his 1957

264. B. JACK COPELAND & JASON LONG, *Turing and the History of Computer Music*, in PHILOSOPHICAL EXPLORATIONS OF THE LEGACY OF ALAN TURING: TURING 100, at 189, 189–218 (Juliet Floyd & Alisa Bokulich eds., 2017).

265. J.R. Pierce, *Portrait of the Machine as a Young Artist*, PLAYBOY, June 1965, at 182; Eric Drott, *Copyright, Compensation, and Commons in the Music AI Industry*, CREATIVE INDUSTS. J., Oct. 29, 2020, at 6.

266. Pierce, *supra* note 265, at 150.

267. Martin L. Klein, *Syncopation by Automation*, RADIO-ELECS., June 1957, at 36.

268. Ananya Sen, *Lejaren Hiller*, ILL. DISTRIBUTED MUSEUM, <https://distributedmuseum.illinois.edu/exhibit/lejaren-hiller/> [<https://perma.cc/4B9P-6UT8>] (last visited Jan. 28, 2025).

269. See LEJAREN A. HILLER, JR. & LEONARD M. ISAACSON, EXPERIMENTAL MUSIC: COMPOSITION WITH AN ELECTRONIC COMPUTER 3–4 (1959); DOUGLAS DAVIS, ART AND THE FUTURE: A HISTORY/PROPHCY OF THE COLLABORATION BETWEEN SCIENCE, TECHNOLOGY AND ART 97 (1973).

270. Sen, *supra* note 268.

271. *Id.*; See generally JAMES M. BOHN, AN OVERVIEW OF THE MUSIC OF LEJAREN HILLER AND AN EXAMINATION OF HIS EARLY WORKS INVOLVING TECHNOLOGY (1997).

272. Sen, *supra* note 268.

273. *Id.*

collaboration with chemist and composer Leonard Isaacson.²⁷⁴ Together, Hiller and Isaacson's research cumulated in the ILLIAC I computer composing its own musical score. Conducting four experiments utilizing the ILLIAC I—the University of Illinois's super-computer that weighed five tons and consisted of 2,800 vacuum tubes—Hiller and Isaacson produced a four-movement string quartet titled the *Illiac Suite for String Quartet*.²⁷⁵

Employing the Monte Carlo method they both encountered when coding in previous research, Hiller and Isaacson accomplished the demonstration of the ILLIAC I's compositional abilities through programming that, as explained in Hiller and Isaacson's *Experimental Music*, simply allowed for "the control of the musical output [to] be limited solely by the input instructions," which reflected "various specified 'rules' of composition," while "leaving factors not specifically accounted for in the input instructions entirely to chance."²⁷⁶ The computer organized "[t]he characteristics of sound," such as "pitch, timbre, dynamics, [and] rhythm," into a numerical computer code.²⁷⁷ Resulting from this organization was the creation of relationships between sound characteristics and mathematical operations.²⁷⁸ This organization allowed the ILLIAC I computer to respond to the Hiller's musical instructions.²⁷⁹ According to Hiller, the ILLIAC I's operational abilities were comparable to the functions of an ordinary desk calculator but without the calculator having a "computing program" nor a "conditional transfer process," which is the "yes-or-no" choice operation that allows for a computer to make its own decisions.²⁸⁰

When conducting their four experiments with the ILLIAC I, Hiller and Isaacson first sought a product that contained different voices resembling that of a musical composition.²⁸¹ To achieve this, they developed "a technique for the composition of a simple but recognizable type of melody," which was used to generate a polyphonic writing.²⁸² Then, with the intent of proving that "standard musical techniques could be handled by computer programming,"²⁸³ Hiller and Isaacson used the ILLIAC I computer to produce "*cantus firmi*," whole melodies that do not exceed twelve notes, which followed the basic rules of music composition while exploring the computer's ability to interact with various chords, harmonies and dissonances, octaves, and even parallels.²⁸⁴

After achieving these melodies, Hiller and Isaacson's third experiment explored the ILLIAC I computer's interactions with a contemporary style of

274. *Id.*

275. HILLER & ISAACSON, *supra* note 269, at 5; UNIV. OF ILL. URBANA-CHAMPAIGN, *supra* note 243.

276. HILLER & ISAACSON, *supra* note 269, at 2.

277. Peter Westergaard, *Book Reviews*, 3 J. OF MUSIC THEORY 302, 302 (1959) (reviewing HILLER & ISAACSON, *supra* note 269).

278. *Id.*

279. *Id.*

280. HILLER & ISAACSON, *supra* note 269, at 2–3.

281. *Id.* at 79.

282. *Id.*

283. *Id.* at 4.

284. *Id.* at 83.

music as a means to develop a composition comprised of more elaborate and complex characteristics of musical expression with dynamics and rhythms.²⁸⁵ In their last experiment with the ILLIAC I, Hiller and Issacson programmed the computer to venture away from the traditional practices of composition in order to demonstrate a computer's ability to compose a musical composition embodying a "radically different species of music" based on newer and developing "techniques of musical analysis."²⁸⁶ The August 9, 1956, public performance of the first three movements of the *Illiac Suite for String Quartet* marked a groundbreaking advancement in the possibilities of music composition.²⁸⁷

Although the threat of Russia remained the greatest fear of the American public in the 1950s, Hiller notes in *Experimental Music* that the "fear of automation" was comparable.²⁸⁸ Despite the *Illiac Suite*'s success, Hiller became notorious overnight and, in his own words, went from a "total obscurity as a composer to really being on the front page of newspapers all over the country."²⁸⁹

The first public performance of the *Illiac Suite* was met with hostility from the audience and from those in the music profession.²⁹⁰ Hiller said that after the performance, it was difficult to lose the perception that he was an "ex-chemist who had meddled in something in which he was a bumbling amateur."²⁹¹ The negative reaction to the *Illiac Suite* was not because of the performance of the piece itself but rather is attributed to it solely having been composed by a computer and proving the possibility of electric composition.²⁹²

285. *Id.* at 4.

286. *Id.* at 4–5.

287. *Id.* at 5–6.

288. *Id.* at 8 (citing L. L. GOODMAN, MAN AND AUTOMATION 169 (1957)).

289. John Bewley, *Lejaren A. Hiller: Computer Music Pioneer*, Music Library Exhibit: May 24–Sept. 7, 2004, UNIV. OF BUFFALO (2004), <https://library.buffalo.edu/content/dam/library/pdf/music/ubmu-pdf-hiller2004.pdf> [<https://perma.cc/2TVK-QBEX>].

290. *Id.*

291. *Id.*

292. *Id.*

ILLIAC SUITE FOR STRING QUARTET

I. EXPERIMENT NO. I

L.A. HILLER, JR. AND L.M. ISAACSON

PRESTO

(A)

(B)

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ALL RIGHTS RESERVED.

The *Illiad Suite* was published in the 1957 issue of *New Music: A Quarterly of Modern Compositions*.²⁹³ *New Music* was a periodical founded by Henry Cowell in 1927 with the purpose of providing a platform for contemporary composers to publish their works and ideas. The periodical featured scores, articles, and reviews of new compositions, offering readers insight into the latest developments in contemporary music. The compositions featured in *New Music* were registered for copyright by New Music Edition, the publisher of the magazine, and the *Illiad Suite* was no exception—it received registration EP110997 effective August 1957 and was published in the July-December 1957 volume of the Catalog of Copyright Entries.²⁹⁴

It is impossible to know for sure if the examiner understood what they were looking at. Hiller and Isaacson's foreword makes very clear that these were generated by computer, and they had purposely attempted *not* to select those outputs most aesthetically appealing but had rather attempted to be as

293. HILLER & ISAACSON, *supra* note 269, at 5.

294. U.S. COPYRIGHT OFF., CATALOG OF COPYRIGHT ENTRIES: THIRD SERIES: MUSIC JULY–DECEMBER 1957, at 1236 (1958).

representative as possible. Indeed, the movements are labelled “Experiments” one through four.²⁹⁵ Hiller and Isaacson made clear that the only “arranging” they did was selecting the formal structures for the four movements, selecting the tempi, and transposing the cello down an octave and the violins up an octave.²⁹⁶ However, it is entirely possible that the examiner saw music from a music publisher they would recognize and did not look too closely.

Interestingly, the Copyright Card Catalog indicates that the registration was revised September 16, 1965.²⁹⁷ The Catalog of Copyright Entries scanned at the Copyright Office indicates that this was to add New Music Edition as the claimant.²⁹⁸ In theory this could be unrelated to broader questions, but the timing is unusual. The Copyright Office Annual Report discussing registration of computer-generated works was published November 29, 1965, and it stands to reason the Copyright Office took another look at the *Illiac Suite* once they were faced with the questions raised by the following work from Hiller: the *Computer Cantata*.

D. The “Computer Cantata”

Following the *Illiac Suite*, Hiller began work on his next experiment in his Experimental Music Studio at the University of Illinois: the *Computer Cantata*.²⁹⁹ The *Computer Cantata* was made possible through MUSICOMP, a software that Hiller developed in 1963 to aid in electronic composition upon retirement of the ILLIAC I computer and was the first product of the program.³⁰⁰

A distinct difference between this experiment and the *Illiac Suite*, however, is that the *Computer Cantata* was not created by a computer but rather was composed by Hiller with the help of the computer’s compositional software, MUSICOMP.³⁰¹ MUSICOMP revealed a composer’s ability to write with the aid of a computer as the software allowed composers to input musical parameters into the computer following instructions for the generation of a composition.³⁰² According to Hiller, MUSICOMP became “advantageous” because it ran on a “standard computer that is widely used.”³⁰³ This meant that the MUSICOMP software became “immediately available to many potential users” which would not have been possible with the ILLIAC I computer.³⁰⁴

Assisted by physicist Robert M. Baker, Hiller’s *Computer Cantata* departed

295. HILLER & ISAACSON, *supra* note 269, at 83.

296. *Id.* at 152–54.

297. U.S. COPYRIGHT OFF. VIRTUAL CARD CATALOG, <https://vcc.copyright.gov/browse> (select “1955-1970” index; search for “illiac suite”) (last visited Feb. 26, 2026).

298. *Id.*

299. Sen, *supra* note 268.

300. Lejaren A. Hiller & Robert A. Baker, *Computer Cantata: A Study in Compositional Method*, 3 PERSP. OF NEW MUSIC 62, 62 (1965).

301. *Id.* (“MUSICOMP . . . [is] a completely generalized programming scheme for musical composition[.]”).

302. *Id.* at 63.

303. *Id.*

304. *Id.*

from the *Illiatic Suite* in its more complex exploration of a computer's compositional abilities.³⁰⁵ The experiment's "primary purpose" was to "to demonstrate the flexibility and generality of MUSICOMP."³⁰⁶ The *Computer Cantata* therefore "present[ed] a rather wide variety of compositional procedures" in addition to a more "concrete demonstration of the broadening of the research area of experimental composition techniques" when compared to the *Illiatic Suite*.³⁰⁷

The composition "employed direct computer synthesis using an IBM 7094 mainframe computer"³⁰⁸ and is comprised of eleven distinct sections in a five movement piece.³⁰⁹ Each individual movement contained a strophe, which is a "mathematical representation of a system which evolves probabilistically," that is "preceded by a prolog or followed by an epilog."³¹⁰ In *Computer Cantata: A Study in Compositional Method*, Hiller explains that "the complete structure is at once symmetrically organized in terms of prologs and epilogs and yet encompasses a progressively unfolding plan of composition in the strophes themselves" and that the piece represents "the widest selection of instrumental types, timbres, and performance techniques possible."³¹¹

The *Computer Cantata* was submitted for registration as an unpublished work, and the registration was received by the Copyright Office on December 30, 1963.³¹² The work was ultimately registered and is almost certainly the musical work referred to in the 1965 annual report.³¹³

D. Hiller and Cage Collaborate: HPSCHD

With Hiller's assistance, experimental composer John Cage joined Hiller in his Experimental Music Studio at the University of Illinois.³¹⁴ During his time in Urbana, Illinois, as an Associate of the Center for Advanced Studies and Visiting Professor of Music, Cage significantly contributed to Hiller's advancements in electronic music generation and computer composition.³¹⁵

Beginning in the fall of 1967, Hiller and Cage commenced work on a "large

305. *Id.* at 62–63.

306. *Id.* at 62.

307. *Id.*

308. Thom Holmes, *When Computer Music was Experimental, 1951-1971*, NOISE AND NOTATIONS (Dec. 4, 2020), <https://www.thomholmes.com/post/when-computer-music-was-experimental-1951-1971> [<https://perma.cc/LY3G-JYPP>].

309. Hiller & Baker, *supra* note 300, at 63–64.

310. Maria F. Carfora, *Stochastic Processes*, in *ENCYCLOPEDIA OF BIOINFORMATICS AND COMPUTATIONAL BIOLOGY* 747, 747 (2019); Hiller & Baker, *supra* note 298, at 64.

311. Hiller & Baker, *supra* note 300, at 65.

312. U.S. COPYRIGHT OFF., CATALOG OF COPYRIGHT ENTRIES: THIRD SERIES: MUSIC JULY–DECEMBER 1963, at 1275 (1963); *COMPUTER CANTATA*, Registration No. EU0000804754 (renewed in 1991 as Registration No. RE0000565048).

313. U.S. COPYRIGHT OFF., *supra* note 119, at 5.

314. Letter from Lejaren A. Hiller, Univ. of Ill. Urbana-Champaign, to John Cage, Univ. of Ill. Urbana-Champaign (Mar. 7, 1966) (on file with the University of Illinois School of Music).

315. Megan Galbreath, *HPSCHD*, ILL. DISTRIBUTED MUSEUM, <https://distributedmuseum.illinois.edu/exhibit/hpschd/> [<https://perma.cc/WPR7-F7JT>] (last visited Jan. 28, 2025).

compositional project” commissioned by Swiss harpsichordist Antoinette Vischer, *HPSCHD*, which embodied the “totality of existence.”³¹⁶ In drastic contrast to Cage’s *4’33”*, *HPSCHD* is a “major multimedia performance” accomplished with “1 to 7 harpsicords and 1 to 51 tapes of computer produced sound” in addition to thousands of projected and physical images.³¹⁷

Hiller, in continuing his experimentations with a computer’s aid in the generation of compositions, employed a “subroutine called ICHING” to recreate *I Ching* or *The Book of Changes* and Mozart’s Musical Dice Game.³¹⁸ Employed by Cage in his compositions, *The Book of Changes* is an ancient Chinese philosophical text and oracle book, which is a “system of ideas and precepts from which a person needing information could, upon putting a precisely worded question, obtain the desired answer and guidance.”³¹⁹ Cage used the *I Ching*’s process in his compositions by allowing a coin toss to “select musical parameters according to various limitations imposed by him.”³²⁰

In the abstract to his *Programming the I-Ching Oracle*, Hiller explains that this oracle “is activated by means of tossing coins” which is precisely the “process [that] was programmed in SCATRE assembly language for an IBM-7094 computer in order to apply the results to certain specialized techniques of music composition.”³²¹ Hiller further details in *Composing with Computers: A Progress Report* that “[t]he results . . . were based on a polynomial distribution” and “much of the programming was concerned with melodic constructions that Cage hoped would express his admiration for the melodic writing of Mozart.”³²² Correspondingly, *HPSCHD*’s compositional computer programming simply resembled a dice throw.³²³

The auditory components of the project were accompanied by the theatrics of Cage’s performances.³²⁴ Cage’s vision for *HPSCHD* was to place the audience in between the microscopic and macroscopic realms.³²⁵ This was accomplished through experiencing the past with “microtonal investigations of the tape music” generated by Hiller and the future through macroscopic visuals of outer space while simultaneously existing in the present.³²⁶ Thousands of “telescopic” image slides and dozens of motion picture films such as George Méliès’s *A Trip to the Moon*, footage from NASA, and images from

316. Lejaren Hiller, *Programming the I-Ching Oracle*, in 3 *COMPUTER STUDIES IN THE HUMANITIES & VERBAL BEHAVIOR* 130, 130; Galbreath, *supra* note 315; Branden W. Joseph, *HPSCHD—Ghost or Monster?*, in *MAINFRAME EXPERIMENTALISM: EARLY COMPUTING AND THE FOUNDATIONS OF THE DIGITAL ARTS* 147, 152 (Hanna B. Higgins & Douglas Kahn eds., 2012).

317. Galbreath, *supra* note 315; Hiller, *supra* note 316, at 130.

318. Lejaren Hiller, *Composing with Computers: A Progress Report*, 5 *COMPUT. MUSIC J.* 7, 11 (1981); Joseph, *supra* note 316, at 148.

319. HELLMUT WILHELM, *CHANGE: EIGHT LECTURES ON THE I CHING* 92 (1960).

320. Hiller, *supra* note 316, at 142.

321. *Id.* at 130.

322. Hiller, *supra* note 318, at 11.

323. Galbreath, *supra* note 315.

324. Joseph, *supra* note 316, at 151–52.

325. *Id.* at 152.

326. *Id.* at 151.

observatories and planetariums were shown through eighty-four projectors and “submitted to the same order of chance procedures as the music.”³²⁷

After Hiller and Cage’s dedication of two years spent on the project, *HPSCHD* premiered at the Assembly Hall (now the State Farm Center) at the University of Illinois on May 16, 1969, to an audience of 7,000 who wandered about the hall in awe while experiencing the chaos of Hiller and Cage’s creation.³²⁸ What resulted from Hiller and Cage’s collaboration was an “unexpected conflation of old and new” with the uniting of the harpsichord, an advanced computer, and a chilling experience of New Age philosophy fittingly right as man prepared to take the next big step and visit the moon.³²⁹ The work was premiered in 1969 and registered for copyright the next year.³³⁰ In one anecdote refreshingly far from current practices, Cage wrote to Hiller to indicate that he had found a public domain dice game and public domain editions of Mozart to ensure that the material used fed into the computer raised no copyright concerns.³³¹

E. Making Art

During the summer of 1962, a junior engineer at Bell Labs named A. Michael Noll was given an internship in their research department.³³² He was studying the fundamental frequency of speech—an important question for a telephone provider, obviously.³³³ But this would unexpectedly lead to developments in computer art, and the first AI art registration.³³⁴

Working with an IBM 7090 and a SC-4020 plotter, Noll and his colleagues noticed that they were inadvertently creating abstract art.³³⁵ Emboldened, Noll began to use this equipment to create computer art deliberately, experimenting with programs to generate angles for lines randomly using different random distributions and other variations.³³⁶ At the end of the summer these were published in a Bell Labs technical Memorandum entitled “Patterns of 7090,” after the name of the computer.³³⁷ One of these patterns was named *Gaussian-*

327. *Id.* at 151, 159.

328. Galbreath, *supra* note 315; *HPSCHD Event Poster*, UNIV. OF ILL. ARCHIVES, <https://archon.library.illinois.edu/archives/index.php?p=digitallibrary/digitalcontent&id=4415> [<https://perma.cc/55B7-8LJ8>] (last visited Jan. 28, 2025); *Composers: Of Dice and Din*, TIME (May 30, 1969), <https://time.com/archive/6634245/composers-of-dice-and-din/>.

329. Galbreath, *supra* note 315; Joseph, *supra* note 316, at 159–60.

330. *HPSCHD*, Registration No. EU200764. Class EU is for unpublished music since it was performed but not published.

331. Letter from John Cage, Univ. of Ill. Urbana-Champaign, to Lejaren Hiller, Univ. of Ill. Urbana-Champaign (Sep. 29, 1968) (on file with the John Cage Collection at Northwestern University).

332. A. Michael Noll, *The Beginnings of Computer Art in the United States: A Memoir*, 27 LEONARDO 39, 39 (1994).

333. *Id.*

334. *Id.*

335. *Id.*

336. *Id.*

337. *Id.*

Quadratic, which Noll found particularly pleasing and would later realize was redolent of Picasso's *Ma Jolie*.³³⁸

In 1964, Noll was contacted by the Howard Wise Gallery in New York, which was interested in showing computer-generated art.³³⁹ The resulting show in April of 1965, "Computer-Generated Pictures," would show the *Gaussian-Quadratic*, alongside sixteen other works by Noll and eleven by Noll's Bell Labs colleague Bela Julesz.³⁴⁰ The review by Stuart Preston in the *New York Times* was positive but equivocal, noting that "[s]o far the means are of greater interest than the end."³⁴¹ Preston's brief review ends in a way which now seems something of a warning, observing that

[n]o matter what the future holds—and scientists predict a time when almost any kind of painting can be computer-generated—the actual touch of the artist will no longer play any part in the making of a work of art. When that day comes the artist's role will consist of mathematically formulating, by arranging an array of points in groups, a desired pattern. From then on, all will be entrusted to the deus ex machina. Freed from the tedium of technique and the mechanics of picture-making, the artist will simply "create."³⁴²

Bell Labs wanted to distance themselves from the show, concerned it would look insufficiently serious, and accordingly gave Noll permission to register his artwork made at Bell Labs under his own name.³⁴³ As such, Noll decided to register the *Gaussian-Quadratic* for copyright.³⁴⁴ Interestingly, although many of his other works from the period bear copyright notices they were not registered at the time—at least according to the copyright card catalog.³⁴⁵ As Noll tells it, the Copyright Office

[a]t first . . . refused [to register *Gaussian-Quadratic*] since a machine had generated the work. I explained that a human being had written the program that incorporated randomness and order. They again refused to register the work, stating that randomness was not acceptable. I finally explained that although the numbers generated by the program appeared "random" to humans, the algorithm generating them was perfectly

338. *Id.*

339. *Id.* at 40.

340. *Id.* at 41; *Howard Wise Gallery records, 1943-1989*, SMITHSONIAN, <https://www.aaa.si.edu/collections/howard-wise-gallery-records-9357/series-3> [<https://perma.cc/ECG9-8K8X>] (last visited Jan. 28, 2025); A. Michael Noll, *The Howard Wise Gallery Show Computer-Generated Pictures (1965) A 50th-Anniversary Memoir*, 49 *LEONARDO* 232 (2016).

341. Stuart Preston, *Reputations Made and in Making*, N.Y. TIMES, Apr. 18, 1965, at 366.

342. *Id.*

343. Noll, *supra* note 332, at 41.

344. *Id.*

345. See, e.g., A. Michael Noll, *Computer composition with lines* (photograph 1964), <https://collections.vam.ac.uk/item/O1193787/computer-composition-with-lines-photograph-a-michael-noll> [<https://perma.cc/8QG4-U972>].

mathematical and not random at all. The copyright was finally accepted, thereby giving Gaussian-Quadratic the distinction of being perhaps the first registered piece of copyrighted art produced with a digital computer.³⁴⁶

Gaussian-Quadratic received registration number GP 51165 in 1965, after it had been “published” by being shown as part of “Computer-Generated Pictures” earlier that year. It is fairly clearly the abstract artwork described in the 1965 Copyright Office Annual Report.³⁴⁷

F. Compilations

In addition to musical works and visual art, the 1965 report mentions computer-generated compilations.³⁴⁸ It does not expand on this and in lieu of finding additional archival material, I cannot say for certain what it is referring to. However, looking at what was being registered for copyright in 1965 and subsequent years, a few works emerge of note.

The earliest registration which on its face suggests being a computer compilation was from 1965, so it could be one of the compilations mentioned, but it is difficult to confirm. National Auto Parts Computer Services Inc. registered its *Parts Identification Catalog* with the Copyright Office, receiving registration number A775752.³⁴⁹ In registering this work, they noted that “[t]he new matter is basically formed by a compilation of a variety of data gleaned from many sources and uniquely arranged to be useful to vehicle parts dealers.”³⁵⁰ Admittedly all we really have to go on there is the name, and the only trace of this entity’s existence in Google is for this copyright registration. Given that litigation over parts catalogs and cases doubting their protectability has been a recurrent theme in copyright law, it is interesting to see just how early computers were to the genre.³⁵¹

In subsequent years until 1970, a number of other compilations made by computer were registered for copyright. All of them feature an introduction, followed by fairly obviously computer-generated and arranged content. Carl Beck and J. Thomas McKechnie produced *Political Elites: A Select Computerized Bibliography*, for which MIT Press received registration number A4275 in 1968, and the claim was for the compilation and introduction.³⁵² That

346. Noll, *supra* note 332, at 41.

347. U.S. COPYRIGHT OFF., *supra* note 119, at 5.

348. *Id.*

349. Application for Registration of a Claim to Copyright, PARTS IDENTIFICATION CATALOG, Registration No. A775752, Reg. of Copyrights, Libr. of Cong. (filed July 8, 1965) (on file with author).

350. *Id.*

351. *See, e.g.,* Southco, Inc. v. Kanebridge Corp., 258 F.3d 148 (3d Cir. 2001); ATC Distrib. Group, Inc. v. Whatever It Takes Transmissions & Parts, Inc., 402 F.3d 700 (6th Cir. 2005).

352. Application for Registration of a Claim to Copyright, POLITICAL ELITES: A SELECT COMPUTERIZED BIBLIOGRAPHY, Registration No. A4275, Reg. of Copyrights, Libr. Of Cong. (filed June 20, 1968) (on file with author).

work was assembled by converting "mounds of cards" into a keyword bibliography by use of a computer, with content beyond the introduction merely being alphabetical.³⁵³ Pergamon Press received registration number AF29319 in 1969 for *Computer Compilation of Molecular Weights and Percentage Compositions for Organic Compounds*.³⁵⁴ Aside from the one-page introduction, the volume simply consists of the "computer output from a program" which has been "stored on tape and printed."³⁵⁵ In 1970, registration number A141191 was given for a *Russian-English Plastics Dictionary* edited by Harry H. Josselson, which was "[a] new compilation using computer reversal method."³⁵⁶ This process involved editing of English-Russian technical dictionaries from the Soviet Union, punching them into the computer, and "a listing of the dictionary is produced by computer in a format suitable for its publication."³⁵⁷

One tantalizing possibility given subsequent caselaw is that these compilations may have been telephone directories. After all, phone books were a massive amount of work, including the cumbersome task of hand-checking the accuracy of every name and number.³⁵⁸ Using a computer would obviate this concern, and the first such trial, under the name "Computer-PHOTAC," began in 1962.³⁵⁹ This trial

demonstrated that computers and PHOTAC equipment could accurately maintain and update records of customers listings; abbreviate, alphabetize, position indents, justify lines, and compose columns and pages according to specifications; and activate a phototypesetter and composer to produce films and plates of pages from which directories and information records could be printed.³⁶⁰

The first published directory from the Computer-PHOTAC trial was

353. CARL BECK & J. THOMAS MCKECHNIE, *POLITICAL ELITES: A SELECT COMPUTERIZED BIBLIOGRAPHY*, at v-vi (1968). This came out of a project of the Special Operations Research Office to identify whether "patterns vary according to different types of political systems," with the problems "presently being faced in" Vietnam constituting "a dramatic demonstration of" the need to better understand them. CARL BECK ET AL., *A SURVEY OF ELITE STUDIES*, at ii-iii (1965).

354. Application for Registration of a Claim to Copyright, *COMPUTER COMPILATION OF MOLECULAR WEIGHTS AND PERCENTAGE COMPOSITIONS FOR ORGANIC COMPOUNDS*, Registration No. AF29319, Reg. of Copyrights, Libr. of Cong. (filed Aug. 7, 1969) (on file with author). This is AF rather than just A because it was a work first published in Great Britain.

355. MICHAEL J. S. DEWAR & RICHARD JONES, *COMPUTER COMPILATION OF MOLECULAR WEIGHTS AND PERCENTAGE COMPOSITIONS FOR ORGANIC COMPOUNDS*, at xi (1969).

356. Application for Registration of a Claim to Copyright, *RUSSIAN-ENGLISH PLASTICS DICTIONARY*, Registration No. A141191, Reg. of Copyrights, Libr. of Cong. (filed Feb. 27, 1970) (on file with author).

357. *RUSSIAN-ENGLISH PLASTICS DICTIONARY* Preface (Harry H. Josselson, ed., 1970). This was originally meant to be only the first in a series of AUTOLEX dictionaries produced by this method, but it does not seem any others in the series were published.

358. Henry F. Pringle & Katharine Pringle, *Sixty Million Headaches Every Year*, *SATURDAY EVENING POST*, Apr. 3, 1954, at 27.

359. *In the News* . . . , 45 *BELL TEL. MAG.*, Spring 1966, at 52-53.

360. *Id.* at 52.

produced for Staten Island, and Staten Island phone directories were consistently registered for copyright through the 1960s.³⁶¹ This led to a more widespread DIR/ECT project telephone directory production system produced by Bell Labs in 1969.³⁶² In 1970, Illinois Bell began putting the DIR/ECT system into action to produce their directories and directory assistance service.³⁶³ As Illinois Bell explained,

The introduction of DIR/ECT at Illinois Bell will mark the first permanent BISPA (Business Information Systems Programs Area) use in the Bell System. Trials of computer-set directory type will be held at New York Telephone and Pacific Northwest Bell. Following the IBT introduction, Southwestern Bell, Bell of Pa., New England Bell and Michigan Bell also are scheduled for early adoption of DIR/ECT.

As these Bell operating companies switch to DIR/ECT, the Directory people's dream of universality in telephone books will be feasible. Computer-set directories can maintain the same high quality and appearance throughout the country. They'll better serve the customer because of standardized printing specifications, alphabetizing, abbreviation, indentation and bold type rules.³⁶⁴

As early as 1973, questions as to whether computer-produced telephone directories were properly the subject of copyright law were being asked.³⁶⁵ At the time, the "landmark case on copyright infringement of a telephone directory" was *Leon v. Pacific Telephone & Telegraph Co.*³⁶⁶ *Leon* applied the holding from *Jeweler's Circular Publishing Co. v. Keystone Publishing Co.* to telephone directories, which stated that

The right to copyright a book upon which one has expended labor in its preparation does not depend upon whether the materials which he has collected consist or not of matters which are *publici juris*, or whether such materials show literary skill or originality, either in thought or in language, or anything more than industrious collection. The man who goes through the streets of a town and puts down the names of each of the inhabitants, with their occupations and their street number, acquires

361. AT&T, Bell Labs Designing New system, Computers to Be Used to Cut Directory Production Time, 195 Management Report No. 54 (Nov. 19, 1969) (on file with the author, courtesy of AT&T Archives and History Center in Warren, NJ).

362. *Id.*

363. *We've Got a Best Seller*, 60 ILL. BELL MAG., No. 4, July-Aug. 1970, at 12, 15.

364. *Id.* at 16.

365. Michael S. Oberman, *Copyright Protection for Computer-Produced Directories*, 41 FORDHAM L. REV. 767 (1973). This article is cited in the CONTU report but not commented on.

366. *Sw. Bell Tel. Co. v. Nationwide Indep. Directory Serv., Inc.*, 371 F. Supp. 900, 905 (W.D. Ark. 1974) (citing *Leon v. Pacific Tel. & Tel. Co.*, 91 F.2d 484 (9th Cir. 1937)).

material of which he is the author. He produces by his labor a meritorious composition, in which he may obtain a copyright, and thus obtain the exclusive right of multiplying copies of his work.³⁶⁷

That decision and its application to telephone books had subsequently been adopted by many other courts, even if some commentators were skeptical.³⁶⁸ However, what effort is required to simply print a directory from a preexisting database used for other purposes such as directory assistance?

Feist Publications entered about sixty-four percent of the listings of Rural Telephone Service Co., Inc. into a computer to help generate their 1983 Northwest AREA-WIDE Telephone Directory for Kansas.³⁶⁹ Rural itself did not do a canvas of their subscribers, but rather received the “information automatically from subscribers,” which Rural would keep “in computer data base form” and use to generate its telephone directory.³⁷⁰ This would be the precipitating incident whereby eight years later the Supreme Court would overrule these earlier cases, holding that “sweat of the brow” was not enough, and copyrightable work must “possess some creative spark, ‘no matter how crude, humble or obvious’ it might be.”³⁷¹ The listings from Rural’s telephone directory did not meet this requirement.³⁷²

The *Feist* decision does not mention computer authorship as a rationale—in fact the word “computer” does not appear in the decision. However, I would argue it necessarily hangs over the decision as the process of making phone books had changed dramatically in the previous quarter century. What had once been a process which involved extensive human involvement was essentially a push button exercise in computer authorship by 1991. Without human authorship, copyright does not apply.

IV. AI AUTHORSHIP AFTER 1965

In 1967, the Copyright Office first made available to the public its Compendium of Procedures, but the first versions did not include a particular

367. *Leon*, 91 F.2d at 486 (quoting *Jeweler’s Circular Pub. Co. v. Keystone Pub. Co.*, 281 F. 83, 88 (2d Cir. 1922)).

368. See *Sw. Bell Tel. Co.*, 371 F. Supp. at 905 (collecting cases); Jeffrey Squires, *Copyright and Compilations in the Computer Era: Old Wine in New Bottles*, 24 BULL. COPYRIGHT SOC’Y U.S.A. 18, 30 (1976) (quoting NIMMER ON COPYRIGHT § 41, at 171–72 (1975)). Mr. Squires was at the time a Staff Attorney for CONTU, and assisted Commissioner Hersey in drafting his dissent, discussed *infra*.

369. Brief for the Respondent, *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co., Inc.*, 499 U.S. 340 (1991) (No. 89-1909), 1990 WL 513113, at *3.

370. Brief for the Petitioner, *Feist Publ’ns*, 499 U.S. 340 (No. 89-1909), 1990 WL 513112, at *11.

371. *Feist Publ’ns*, 499 U.S. at 345–53 (quoting 1 M. NIMMER & D. NIMMER, COPYRIGHT § 1.08 [C] [1] (1990)).

372. *Id.* at 362. Interestingly, Rural’s copyright registration has remained on the record without an indication it has been invalidated. See Barbara Lauriat & Robert Brauneis, *Cancelling Copyrights*, 49 COLUM. J.L. & ARTS (forthcoming 2026).

discussion of non-human authorship by computer.³⁷³ That would not appear until the early 1980s, when the Second Compendium made clear that “[w]orks produced by mechanical processes or random selection without any contribution by a human author are not registrable.”³⁷⁴ Of course, this is simply another statement of the Copyright Office’s position from 1965.

A. The 1976 Act and CONTU

As the Copyright bill, which began study and drafting in the mid-1950s and was introduced in the early 1960s, continued its long trajectory to enactment in 1976 and effectiveness in 1978, computers were improving in leaps and bounds. It became increasingly clear during this time that computer copyright was a question that needed to be addressed, but the troubled bill could not bear another controversy, and the question was put to a commission instead. The resulting Commission on New Technological Uses for Copyright Works (CONTU) was charged with studying uses of existing copyrighted works, but its second charge was specifically to study “[t]he creation of new works by the application or intervention of such automatic systems or machine reproduction.”³⁷⁵ A CONTU memorandum considered whether authorship could be attributed to the computer itself or to the author of the program which created the work, rejecting both.³⁷⁶ The memorandum instead argued for awarding protection to the operator of the computer, depending on whether there was “sufficient human intervention or discretionary involvement in the process to justify awarding copyright in the output.”³⁷⁷

The Commission’s 1978 report, though, largely demurred beyond a general concurrence with the Copyright Office’s position from 1965. The report notes the issue of AI authorship stems from a “concern that computers either had or were likely to soon achieve powers that would enable them independently to create.”³⁷⁸ However, as of 1978 “development of this capacity for ‘artificial intelligence’ has not yet come to pass, and . . . such a development is too speculative to consider.”³⁷⁹ Given that, CONTU recommended that Congress and the Copyright Office “continuously monitor the impact of computer applications on the creation of works of authorship” should the situation

373. Edward Lee, *Prompting Progress: Authorship in the Age of AI*, 76 FLA. L. REV. 1445, 1464 (2024). Section 2.8.3.I.a.1.(b) of the Compendium includes a requirement of human authorship but not in the computer context. U.S. COPYRIGHT OFF., COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 2.8.3, at 2-290 (1st ed. 1973).

374. U.S. COPYRIGHT OFF., COMPENDIUM II: COMPENDIUM OF COPYRIGHT OFFICE PRACTICES § 503.03(a), at 500-8 (1984).

375. Act of Dec. 31, 1974, Pub. L. No. 93-573, § 201(B)(2), 88 Stat. 1873.

376. Memorandum CONTU Staff to “New Works” Committee from CONTU Staff, (Dec. 16, 1977) (on file with author).

377. *Id.* at 9. The memorandum noted that protection in these works might “be rather thin.” *Id.*

378. NAT’L COMM’N NEW TECH. USES OF COPYRIGHTED WORKS, *supra* note 259, at 44.

379. *Id.*

change.³⁸⁰ Until that point, CONTU concluded “that no special problem exists with respect to the [computer generated works]; that existing . . . law adequately cover any questions involved; and that no action by Congress is necessary at this time.”³⁸¹

Commissioner Hersey went further in his dissent and strongly urged for a rejection of AI authorship, noting that

something that Professor Weizenbaum keeps emphasizing over and over again is the extent to which [many] have come to accept the propositions “that men and computers are merely two different species or a more abstract genus called ‘information processing systems,’” that reason is nothing more than logic, and “that life is what is computable and only that.”

A society that accepts in any degree such equivalences of human beings and machines must become impoverished in the long run in those aspects of the human spirit which can never be fully quantified and which machines may be able in some distant future to linguistically “understand” but will never be able to experience, never be able to bring to life, never be able therefore to communicate. Those aspects include courage, love, integrity, trust, the touch of flesh, the fire of intuition, the yearning and aspirations of what poets so vaguely but so persistently call the soul—that bundle of qualities we think of as being embraced by the word humanity.³⁸²

Although there are extensive transcripts of the CONTU meetings, the issue of AI authorship is not really discussed.³⁸³ There were consultations, with composers like Milton Babbitt, who would have been very aware of Hiller’s experiments and subsequent work in the field along like computer scientists like Weizenbaum, but records have not survived of those consultations so far as I can tell.

IV. AI AUTHORSHIP AFTER CONTU

In 1991, the World Intellectual Property Organization (WIPO) held a Worldwide Symposium on the Intellectual Property Aspects of Artificial Intelligence at Stanford University, leading to a volume of papers presented there. In his contribution, Arthur R. Miller noted that some might believe that

380. *Id.* at 46.

381. *Id.*

382. *Id.* at 36–37. Although this dissent is more focused on copyright protection for computer programs, AI authorship is specifically invoked.

383. See Zvi S. Rosen, *Transcribed Proceedings of CONTU*, MOSTLY IP HIST. (Jan. 10, 2018), <https://mostlyiphistory.com/2017/01/10/transcribed-proceedings-of-contu/> [<https://perma.cc/GB8A-PKHR>]. Note that some discussion by Melville Nimmer, mostly conclusory, is *infra* at Part II.A.

the issue of AI authorship was new, but in reality the issue had already been considered for some twenty-five years already, and many major legal questions had already been resolved.³⁸⁴ At the same time, although computer technology had evolved in leaps and bounds from 1965 to 1991, it was prepared for a series of massive further evolutions leading to today and something approaching the sort of artificial intelligence considered to be a game-changer in the past is now a reality.

In the early 1980s, the RACTER text generation system received a fair bit of attention,³⁸⁵ culminating in the publication of *The Policeman's Beard is Half Constructed* in 1984 by Warner Books. Proclaiming on its cover that it is "The First Book Ever Written by a Computer,"³⁸⁶ the Copyright Office registered it in 1984, somewhat surprisingly.³⁸⁷ The application lists two authors: Joan Hall, who created the illustrations, and William Chamberlain on the basis of having "programmed computer to create entire text."³⁸⁸ Apparently this was sufficient to accept the registration, and "Racter" is listed as being the author in the Copyright Office Public Catalog.³⁸⁹ Given both past and present rejection of such claims by the Copyright Office, this feels like an unusual oversight. As for the work itself, it suffers from certain incongruities, including "a predilection for vegetables of different varieties, invoking unlikely images of lettuce, tomatoes, and potatoes amid the bantering of its characters."³⁹⁰

In the early 1990s, following a decade of effort, Scott French programmed a Macintosh computer to imitate the style of Jacqueline Susann, best known for "Valley of the Dolls."³⁹¹ The result was 1993's *Just This Once*, and one reviewer favorably comparing it to an oeuvre by Jackie Collins with the comment that that "[i]f you do like this stuff, you'd be much, much better off with the one written by the computer."³⁹² The book was published by Carol Publishing

384. Arthur R. Miller, *Computers and Authorship: The Copyrightability of Computer-Generated Works*, in WORLD INTELL. PROP. ORG., WIPO WORLDWIDE SYMPOSIUM ON THE INTELLECTUAL PROPERTY ASPECTS OF ARTIFICIAL INTELLIGENCE 241, 243 (1991). This was substantially reprinted as part of Arthur R. Miller, *Copyright Protection for Computer Programs, Databases, and Computer Generated Works: Is Anything New Since CONTU?*, 106 HARV. L. REV. 977, 1042 (1993).

385. Christine L. Kane, *Computing Fiction*, BOSTON PHOENIX, Oct. 13, 1981, at 2 (discussing how OMNI magazine had paid several thousand dollars for the first outing of RACTER, a short story entitled "Soft Ions").

386. *The First Book Written by a Computer*, HISTORYOFINFORMATION.COM, <https://www.historyofinformation.com/detail.php?entryid=3806> [<https://perma.cc/72EV-AB2V>] (last visited Feb. 27, 2026).

387. THE POLICEMAN'S BEARD IS HALF CONSTRUCTED, Registration No. TX0001454063.

388. Application Form TX, THE POLICEMAN'S BEARD IS HALF CONSTRUCTED, Registration No. TX 1-454-063, U.S. Copyright Off. (filed Nov. 6, 1984) (on file with author).

389. THE POLICEMAN'S BEARD IS HALF CONSTRUCTED, Registration No. TX0001454063.

390. Terry Nasta, *Thief of Arts*, PC MAG., Dec. 25, 1984, at 62.

391. Steve Lohr, *THE MEDIA BUSINESS: Encountering The Digital Age – An occasional look at computers in everyday life. Potboiler Springs From Computer's Loins*, N.Y. TIMES, July 2, 1993, at 1.

392. *Id.*

Group, which figured the computer authorship would be a useful device for getting attention and sales.³⁹³ The Copyright Office received an application for registration for on June 21, 1993.³⁹⁴ However, the work's path to registration was not quick, as the Copyright Office "wasn't sure Scott French should be listed as 'author' of the entire text of *Just This Once*, seeing as how it's being promoted as computer-written."³⁹⁵ The application was amended in mid-December of 1993 following an exchange between the publisher and the examiner, where the original claim of "entire text" was replaced by a claim for "some original text, some computer-aided text," and implicitly that the computer-aided text was not original.³⁹⁶

The authorship of *Just This Once* led to another novel legal issue when the Jacqueline Susann estate threatened suit against French and the book's publisher.³⁹⁷ In response, French argued that the final product "does not duplicate Susann's writing. It is simply and magically reminiscent of America's most popular novelist."³⁹⁸ Reportedly, the Susann Estate "settled out of court for half of French's profits and control over the publicity for the book."³⁹⁹ So far as I can tell, this marks the first legal scuffle involving an AI operator for using copyrighted materials for AI training.⁴⁰⁰

Composer David Cope produced many works using his EMI system for algorithmic composition, but to my knowledge none of them were registered for copyright. However, he did register his book *Experiments in Musical Intelligence*. Although the application for registration was received in mid-July of 1996, it was only registered following a conversation between the publisher and examiner, where the original explanation of the nature of authorship, which had been "Monograph on a computer system for emulating musical styles and composing," was amended to "entire text of Monograph."⁴⁰¹

One other example from the turn of the millennium involved litigation over the organization of the Hebrew Bible into matrices. Rabbi Dr. Yochanan

393. Telephone Interview with Steven Schragis, Publisher, Carol Publ'g (July 31, 2004).

394. Application Form TX, JUST THIS ONCE, Registration No. TX 3-633-395, U.S. Copyright Off. (filed June 21, 1993) (on file with author).

395. David Streitfeld, *Book Report*, WASH. POST, Sep. 26, 1993, at X-15.

396. *Id.*

397. Lohr, *supra* note 391.

398. Peter Laufer, *MotherJones MJ93: Hacking in the valley of the dolls*, MOTHER JONES (May 1993), <https://www.motherjones.com/politics/1993/05/motherjones-mj93-hacking-valley-dolls/> [<https://perma.cc/MF2D-QUFQ>].

399. John Boudreau, *A Romance Novel With Byte: Author Teams Ups With Computer to Write Book in Steamy Style of Jacqueline Susann*, L.A. TIMES (Aug. 11, 1993), <https://www.latimes.com/archives/la-xpm-1993-08-11-vw-22645-story.html> [<https://perma.cc/R5YH-PARU>]. The legal questions raised were discussed in a student note at the time. Tal Vigderson, Note, *Hamlet II: The Sequel: The Rights of Authors vs. Computer-Generated Read-Alike Works*, 28 LOY. L.A. L. REV. 401 (1994).

400. Gabriel Karger, *AI-Generated Images: The First Lawsuit*, SCI. & TECH. L. REV. (Jan. 25, 2023), <https://journals.library.columbia.edu/index.php/stlr/blog/view/479> [<https://perma.cc/2S5B-FRHW>].

401. Application Form TX, EXPERIMENTS IN MUSICAL INTELLIGENCE, Registration No. TX 4-382-776, U.S. Copyright Off. (filed Oct. 18, 1996) (on file with author).

Spielberg developed software for searching and encoding the Hebrew texts and outputting matrices of the codes which he argued were therein by algorithm.⁴⁰² Michael Drosnin used this software, including a large number of these matrix outputs, in his bestselling book *The Bible Code*.⁴⁰³ Spielberg registered the software and (through his company) brought suit, arguing that the use of these matrix outputs constituted copyright infringement.⁴⁰⁴ However, the Court disagreed and found that plaintiff “failed to satisfy its burden of proving that the Software’s outputs of Bible code finds, as displayed in the matrixes, contain protectable expression.”⁴⁰⁵ The case is a bit challenging, though, because technically Spielberg was suing Drosnin for infringing his copyright in the software and had not registered the matrices the software generated.⁴⁰⁶

The recent era, the era of generative AI, has already been discussed thoroughly *infra*. But having gone through this history, what can we learn from it?

V. SIX LESSONS

As I have documented here, the issue of computer authorship of copyrightable works has come up repeatedly before the Copyright Office and always seems to reach the same conclusion. But can we do better? In understanding how we got here, I believe there are six possible lessons—not mutually exclusive—to take away.

A. An Interesting Question, but Not a Terribly Difficult One?

At the eighteenth CONTU meeting in 1977, Vice-Chairman Melville Nimmer of treatise fame commented that

What I’m trying to do is focus on the extent to which this brave new world presents new copyright problems, to discover the extent to which they are simply the same copyright problems in somewhat different packages, and really no more difficult than the existing copyright problems.

One question raised had to do, I think, at least by implication, with the copyrightability of works created in part by the machine. That is an interesting question, but one that I don’t think is a terribly difficult one. I may be wrong.⁴⁰⁷

402. *Torah Soft Ltd. v. Drosnin*, 136 F. Supp. 2d 276, 280 (S.D.N.Y. 2001).

403. *Id.*

404. *Id.* at 276–78.

405. *Id.* at 292.

406. *Id.* at 281–82. Nor could it be, because Drosnin had purchased the software and generated the matrices himself. *Id.* at 281.

407. NAT’L COMM’N ON NEW TECH. USE OF COPYRIGHTED WORKS (CONTU), TRANSCRIPT OF THE 18TH MEETING, PB 278329, at 66 (1977), <https://archive.org/details/PB27832918thCONTUMeeting/page/n71/mode/2up> [<https://perma.cc/DK6H-SCTM>].

And perhaps it wasn't difficult. Indeed, the question was not further discussed in the meeting, where discussion instead turned to questions of infringement.⁴⁰⁸ It is a bit anticlimactic, but that does not mean it is wrong.

As of the writing, 1965 was sixty years ago, and the people at the Copyright Office then who were engaged with the issue when it came up were immersed in the ideas of copyright law and its revision more than almost anyone else. Register of Copyrights Abraham L. Kaminstein and Head of Examining Barbara Ringer had together been working on the revision to the copyright law which would become the 1976 Copyright Act for about a decade at that point, with Ringer taking the lead on drafting and Kaminstein providing the interface to Congress and industry.

At this point in the revision process, detailed reports had been produced on the meaning of "Writings" in the Constitution, the history of copyright law and its revisions, copyright registration, copyright in architectural works as well as in choreographic works and in sound recordings, and much more.⁴⁰⁹ Hearings had been held, the draft bill which would become the 1976 Act had gone through numerous revisions and the Register had produced reports on these revisions, and consultations with stakeholders were ongoing. As such, Ringer and Kaminstein were in an ideal position to approach the issue conceptually—and may have just seen it clearly gotten it right.

B. Protect the Prompts

The precedent set by registration of aleatory music as text suggests that in cases where protectability of the AI output might be questionable, registration of the textual prompts sent to the AI engine might be possible. There is the additional analogy of computer programs, where the source code is protectible as a literary work. Similar doctrines about thin copyright and abstraction-filtration-comparison could then be used for protection of AI works.⁴¹⁰

Somewhat surprisingly, the issue has not been discussed extensively, perhaps in part because this option is less attractive to registrants, just as audiovisual registration was more attractive than textual registration in the Atari case.⁴¹¹ For instance, in the *Théâtre D'opéra Spatial* review board letter, it was noted that

Allen declined to disclose any specific prompt on the grounds that

408. *Id.*

409. *Copyright Law Revision Studies*, U.S. COPYRIGHT OFF., <https://copyright.gov/history/studies.html> [<https://perma.cc/K3GQ-QQ4C>] (last visited Jan. 28, 2025) (thirty-four revision studies were produced overall).

410. *See* Comput. Assocs. Int'l, Inc. v. Altai, Inc., 982 F.2d 693 (2d Cir. 1992).

411. *But see* Francesca Mazzi, *Authorship in Artificial Intelligence-Generated Works: Exploring Originality in Text Prompts and Artificial Intelligence Outputs Through Philosophical Foundations of Copyright and Collage Protection*, 27 J. WORLD INTELL. PROP. 410 (2024) (discussing whether prompts are original work of authorship).

“specific string of prompts and inputs are confidential.” Mr. Allen has not sought copyright protection for his prompts and inputs. Nor could the Board consider whether the prompts themselves were sufficiently creative to be independently protected by copyright since Mr. Allen has not disclosed them.⁴¹²

In other words, the possibility of protecting prompts is on the table for the Copyright Office, but it would depend on whether they are original works of authorship. On a review of the Copyright Office online catalog in January of 2025, there are a few suggestions of prompt registrations but nothing I could confirm.⁴¹³

Generally speaking, the rule for the quantum of original authorship which must exist is extremely low, but not zero. This was seen in the registration of 4’33” and other aleatory works, and prompts would likely be no less registrable than “a computer program, whether in object code or source code.”⁴¹⁴ It is difficult to know whether registration of prompts is desirable to creators, but it may minimize certain concerns about registration of AI works being used against independent AI creations.

In its report at the end of January 2025, the Copyright Office concluded that “given current generally available technology, prompts alone do not provide sufficient human control to make users of an AI system the authors of the output.”⁴¹⁵ Looking at cases about authorship of a commissioning party of software and artwork, the Copyright Office argued that “provision of detailed directions, without influence over how those directions are executed, is insufficient.”⁴¹⁶ The rationale for this is that “prompts may reflect a user’s mental conception or idea, but they do not control the way that idea is expressed.”⁴¹⁷

This strikes me as a difficult standard—many works have been created on which the artist was the mastermind but elements of chance or outside influence were present. Some have been discussed above but of course many more exist in art galleries and many other places around the world. With apologies to Justice Holmes, I suggest that a rule cannot be laid down which would excommunicate the work of such artists as Jackson Pollock from copyright protection.⁴¹⁸ The Copyright Office defends against this argument in its report, arguing that Pollock’s “process of creation did not end with his vision of a work”

412. Letter from Suzanne V. Wilson to Tamara Pester, *supra* note 77, at 6 n.8.

413. For instance, I checked Registration No. TX0009377726 / 2024-03-01 for “AI Prompt: World Peace Engineering #EliteEng #EliteOps #ITE” by Matthew Daniel Sacks. However, the author told me it is a blog post, not a set of prompts.

414. *Apple Comput., Inc. v. Franklin Comput. Corp.*, 714 F.2d 1240, 1249 (3d Cir. 1983).

415. U.S. COPYRIGHT OFF., *supra* note 2, at 18.

416. *Id.* (citing *S.O.S., Inc. v. Payday, Inc.*, 886 F.2d 1081, 1087 (9th Cir. 1989)) (software created for bank by third party developer); *Cnty. for Creative Non-Violence v. Reid*, 490 U.S. 730, 737 (1989) (sculpture created by independent contractor was not a “work for hire”).

417. *Id.* at 19.

418. *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 251 (1903) (“A rule cannot be laid down that would excommunicate the paintings of Degas.”).

but included the physicality of execution and “choice of colors, number of layers, depth of texture, placement of each addition to the overall composition.”⁴¹⁹ Because many of these easily can be included in the prompts, drawing such a distinction may prove difficult.

Regardless, although the Copyright Office has asserted that the output of an AI system cannot be protected through registration of its prompts, that should have no impact on whether the prompts themselves are registerable as textual works. The main challenge would likely be on the grounds that they are a “procedure, process, system, [or] method of operation.”⁴²⁰

C. Register Under the Rule of Doubt

As discussed above, in the early days of computer software being registered for copyright, the Copyright Office had its doubts but ultimately accepted those registrations under the Rule of Doubt.⁴²¹ The Rule of Doubt is both an examination doctrine and a registration caveat of substantial vintage. As the name suggests, the rule of doubt is essentially a registration with a cloud over it—the Copyright Office accepts the registration, but the caveat of the rule of doubt robs it of the presumption of validity which generally attaches to a registration. Probably the best statement of the vintage rule of doubt comes from a 1969 article, which describes it as a “rule of reasonable doubt,” whereby

a claim should not be disapproved if there is a reasonable doubt as to its validity (as may ultimately be determined by a court), even though the Office itself may consider the claim invalid—hence the policy of refusing only those claims which are defective on their face.⁴²²

Although sources trace it to the 1940s, the Rule of Doubt actually goes back even earlier. In 1911, the Copyright Office accepted registrations of piano rolls as musical arrangements under an early version of the rule of doubt, even though Congress had declined to extend copyright protection to piano rolls only two years earlier.⁴²³ Presumably the examiners would be unable to confirm what the arrangements were without a player piano in the office. *Patry on Copyright* traces the first appearance of the rule to 1942, in Assistant Register

419. U.S. COPYRIGHT OFF., *supra* note 2, at 20.

420. 17 U.S.C. § 102(b).

421. *See infra* at Part III.B. This section is adapted from my blog post: Zvi S. Rosen, *Registering Generative AI Works for Copyright Under the Rule of Doubt* (Apr. 19, 2024), <https://mostlyiphistory.com/2024/04/19/registering-generative-ai-works-for-copyright-under-the-rule-of-doubt/> [<https://perma.cc/5QR3-3GNC>].

422. Morton David Goldberg & Richard Dannay, *Fraud on the Copyright Office: Its Use and Misuse as a Defense in Copyright Infringement Actions*, 44 N.Y.U. L. REV. 540, 557 (1969).

423. Rosen, *supra* note 20, at 514.

of Copyrights Herbert A. Howell's work *The Copyright Law*.⁴²⁴ According to the Copyright Office's 1950 Manual, they would "register material which we feel a court might reasonably hold to be copyrightable, even though, personally, we feel that it is not subject to copyright."⁴²⁵ The failed Copyright Reform Act of 1993 had a provision to codify something similar to the rule of doubt, but instead it has remained a matter of internal Copyright Office practice.⁴²⁶

The Rule of Doubt was especially important under the 1909 Act, since an infringement suit could not be brought without a registration. This is part of why the Copyright Office would "resolve any reasonable doubt concerning the copyright ability of a particular work in favor of registration."⁴²⁷ The 1976 Act explicitly added provisions for bringing suit following a denied registration, although a suit cannot be brought while an application is pending.⁴²⁸ However, the Rule of Doubt endured, and made its way into the Compendium of Copyright Office Practices.

The statement of the rule provides its general contours:

On occasion, the Office may register a claim to copyright, even though the Office has reasonable doubt as to whether the material submitted for registration constitutes copyrightable subject matter or whether the other legal and formal requirements of the statute have been met. This practice is known as the Rule of Doubt.⁴²⁹

In practice, the Rule is mostly focused on software,⁴³⁰ and the last registration under the Rule of Doubt I could find not related to software was in 2011.⁴³¹ In 1983, the Copyright Office proposed that they would allow registration under the "rule of doubt" based on an object code format as the deposit" or in cases

424. HERBERT A. HOWELL, *THE COPYRIGHT LAW: AN ANALYSIS OF THE LAW OF THE UNITED STATES GOVERNING REGISTRATION AND PROTECTION OF COPYRIGHT WORKS, INCLUDING PRINTS AND LABELS* 92 (1942) ("[T]he Copyright Office has always been inclined to give the author the benefit of the doubt, if there be any, and make registration for whatever it be worth.").

425. U.S. COPYRIGHT OFF., *DEPARTMENTAL & DIVISIONAL MANUAL* No. 7, 38 (1950).

426. H.R. 897, 103d Cong. § 5(a) (1993).

427. *Eltra Corp. v. Ringer*, No. CIV.A. 76-264-A, 1976 WL 21070, at *3 (E.D. Va. Oct. 26, 1976), *aff'd*, 579 F.2d 294 (4th Cir. 1978).

428. *Fourth Est. Pub. Benefit Corp. v. Wall-Street.com, LLC*, 586 U.S. 296, 302–03 (2019).

429. U.S. COPYRIGHT OFF., *supra* note 22, § 607.

430. *Compaq Comput. Corp. v. Procom Tech., Inc.*, 908 F. Supp. 1409, 1415 (S.D. Tex. 1995) (noting the Rule of Doubt is limited to "registrations submitted in formats that are not understandable to humans.").

431. *DESIGNS BY PAULINE LANDERS CIRCA 1945*, Registration No. VA0001789386. Although not indicated as being made under the Rule of Doubt in registration PA0001098484, the Annual Report of the Examining Division from 2002 indicates that the registration of a "living statue" act as pantomime was made under the rule of doubt. ANNUAL REPORT OF THE EXAMINING DIVISION FOR FY 2002, U.S. COPYRIGHT OFFICE 13–14, *available at* https://archive.org/details/USCO_Examining_Reports/2002/page/n13/mode/2up.

of trade secrecy where the examiner had not seen the work.⁴³² Nowadays, “as a general rule, the Office will apply the Rule of Doubt only in” attempts to register computer software where source code is not deposited, or in situations where the examiner is not sent the deposit material due to trade secrecy.⁴³³ There is an allowance of other “exceptional circumstances” where it could be used, but the Copyright Office “will not register a claim under the Rule of Doubt simply because there is some uncertainty as to how that issue may be decided by a particular court.”⁴³⁴

As Ed Lee has also noted, the Rule of Doubt may offer a prudent solution for how to handle registrations with at least some claim of authorship.⁴³⁵ Much like for computer code, there is inevitably a “black box” element for AI, although unlike for code, the unknowable part is not the work itself but the exact nature of the authorship involved.

In a way, the Copyright Office is already doing this—registrations made at least in part with AI include this in the “material excluded” field. However, this is not documented and should be made clear by policy statement. In cases like *Thaler*, where purportedly there was no human authorship, denial of registration would still be proper.

D. Lawyers Are Bad at Thinking Outside the Box

Law gets up in the morning and thinks “what did I wear yesterday.”⁴³⁶ Lawyers “are usually too wedded to the status quo” and the result is an inability to think in ways which truly go beyond what already exists.⁴³⁷ This tendency is doubtless particularly due to the approach in common-law jurisdictions to use *stare decisis* as a basis for decision making, resulting in ossified doctrines which bind lower courts.⁴³⁸ Although the same constraints are not necessarily present in scholarship, the mindset inevitably is. This is especially true given the Constitutional limits on the power of Congress to make laws regarding copyright, and the fact that debates over copyrightability tend to involve

432. Notice of Inquiry Deposit of Computer Programs and Other Works Containing Trade Secrets, 48 Fed. Reg. 22951-01, 22952 (proposed May 23, 1983) (to be codified at 37 C.F.R. pt. 202).

433. U.S. COPYRIGHT OFF., *supra* note 22, § 607.

434. *Id.*

435. Edward Lee, *The Code Red for Copyright Law*, 76 FLA. L. REV. F. 1, 7–8 (2024).

436. Thanks to Sheila Simon for the line.

437. Antonio F. Perez, *Legal Frameworks for Economic Transition in Iraq - Occupation under the Law of War vs. Global Governance under the Law of Peace*, 18 TRANSNAT'L LAW. 53, 54 (2005).

438. Barbara Luppi & Francesco Parisi, *Judicial Creativity and Judicial Errors: An Organizational Perspective*, 6 J. INST. ECON. 91 (2010); Todd J. Zywicki, *The Rise and Fall of Efficiency in the Common Law: A Supply-Side Analysis*, 97 NW. U. L. REV. 1551 (2003); Jeffery E. Stake, *Evolution of Rules in a Common Law System: Differential Litigation of the Fee Tail and Other Perpetuities*, 32 FLA. ST. U. L. REV. 401, 402 n.6 (2005).

conflated questions of statutory and constitutional copyrightability.⁴³⁹

A corollary to this is that every time the issue comes up, scholars tend to treat it as being a new thing.⁴⁴⁰ Pamela Samuelson's piece on the subject from 1986 is still the state of the art on copyrightability of computer-generated works, considering five different possibilities for AI-generated works.⁴⁴¹ Since then, a great deal of ink has been spilled on the subject, much of it purporting to answer the question. As of September 1, 2024, there were over forty law review articles in Westlaw discussing the attempted copyright registration for *A Recent Entrance to Paradise*, all from 2022 forward, and that is only the tip of the iceberg as a great deal had been written beforehand (and no doubt a great deal is in the pipeline to appear soon). But how many times can we reinvent the same wheel?

E. Will AI Break Copyright?

Copyright law in the United States is ultimately a heavily amended and updated version of the Statute of Anne from 1710, which was an answer to the problem raised by Milton in his *Areopagitica* from 1644. It has been under increasing strain as the shape of creativity and creation changes, and perhaps AI is the point where the leaks in the ship simply cannot be patched.

In the nineteenth and early twentieth centuries, the focus in copyright legislation was attempting to harmonize a stubbornly national system with the goal of integrating into the broader international copyright community. The effort took far longer than expected, and copyright questions which were inevitable with developments in technology were generally handled through half-measures as the focus was perhaps necessarily elsewhere.

The strain has increased in the digital era. The byzantine system of music copyright with separate royalty systems for music and sound recordings, with different schemes for interactive and non-interactive streams, not even to mention things like synchronization, are a far cry from the exclusive right to sell books, maps, and charts. Computer programs were never a natural fit for copyright law, and for the past sixty years they have been registered by the Copyright Office as literary works. It is simple enough to explain the reason as

439. See Brief for the Respondent, *supra* note 369. Of course, the Commerce Clause may offer an additional avenue for legislation, as may the treaty power. At least regarding bootleg sound recordings, the law has accepted this for some time now, although with perhaps a slight unease. See *United States v. Moghadam*, 175 F.3d 1269 (11th Cir. 1999); *United States v. Martignon*, 492 F.3d 140 (2d Cir. 2007) (overruling a District Court conclusion disagreeing with *Moghadam*).

440. Indeed, claims of novelty in legal scholarship are made excessively generally. Paul Horwitz, *Three More Takes on Novelty Claims in Legal Scholarship*, PRAWFSBLAWG (Aug. 19, 2013, at 22:39 ET), https://prawfsblawg.com/2013_08_three-more-takes-on-novelty-claims-in-legal-scholarship/ [<https://perma.cc/Q4FP-DFEM>]; Paul Horwitz, "The First", PRAWFSBLAWG (Dec. 13, 2021), https://prawfsblawg.com/2021_12_the-first/ [<https://perma.cc/CS29-4SFD>].

441. Samuelson, *supra* note 18.

a matter of history, but the practice has been ridiculous for decades.⁴⁴² Are we simply going to do the same thing with works written by computers and sweep the problem under the rug by pretending it is just old wine in new bottles? Eventually the bottle won't hold.

In fact, looking at the history shows something else—that the issue has been repeatedly avoided. This was most conspicuous for CONTU, but in general the idea of computer authorship has been long considered and equally long avoided. The Copyright Office's 2025 report on AI Authorship explicitly endorsed the “same analysis” that they provided in 1965, even in the face of dramatic technological change.⁴⁴³ The Copyright Office's report rejects calls for a sui generis protection for AI works,⁴⁴⁴ but at a certain point it might be necessary to acknowledge that copyright for AI creations is something fundamentally different from what was contemplated in 1790.

F. AI Shows Us the Purpose of Copyright

As one final lesson, perhaps we can learn something after all—not necessarily about AI, but about copyright and authorship. The Constitution authorizes Congress to legislate to protect authors in their writings, not to give copyrights to expressive works regardless of their origin.⁴⁴⁵ This has been largely treated as a legal rule for the course of this discussion, but there is a deeper insight to this provision that AI works reveal—the centrality of the author and the author's value. Seeing the formulaic repetitive outputs that AI can reliably produce is a reminder of why copyright protection is aimed at protecting authors, not works, and focusing on works for copyright law is a mistake. Perhaps a copyright law more focused on authors and less focused on works would better satisfy the goals of copyright law.

Generally speaking, incentive theory is the most commonly stated justification for copyright protection—the idea that copyright is “a means of providing financial incentives for creative production.”⁴⁴⁶ This is of course part of the reason for copyright protection in America, but attempting to constrain the rationale for copyright to a single argument simply does not track the historical reality of what motivates copyright legislation.⁴⁴⁷ Rather, into the sausage grinder that is the rationale for copyright, three other philosophical

442. *Comput. Assocs. Int'l, Inc. v. Altai, Inc.*, 982 F.2d 693, 712 (2d Cir. 1992) (“Generally, we think that copyright registration—with its indiscriminating availability—is not ideally suited to deal with the highly dynamic technology of computer science. Thus far, many of the decisions in this area reflect the courts' attempt to fit the proverbial square peg in a round hole.”).

443. U.S. COPYRIGHT OFF., *supra* note 2, at 2.

444. *Id.* at 35–36.

445. See U.S. CONST. art. 1, § 8, cl. 8.

446. BJ Ard, *Taking Access Seriously*, 8 TEX. A&M L. REV. 225, 247 (2021). The idea is that the incentive to publish is in tandem with a public benefit of access. *Id.*

447. ROBERT P. MERGES, *JUSTIFYING INTELLECTUAL PROPERTY* (2011); Others take a contrary view of what they dub “IP Pluralism.” Patrick Goold & David A., *IP's Pluralism Puzzle*, 103 TEX. L. REV. 1453 (2025).

strands are generally recognized: labor, personality, and communication.⁴⁴⁸

The labor theory of value stands for the proposition that “the law should secure as property the valuable products and services created by original laborers.”⁴⁴⁹ This argument has been a long history as a justification for copyright protection throughout American history.⁴⁵⁰ By contrast, the intertwined personality and communication theories considers creative work to be “communication with the public” intertwined with the author’s autonomy.⁴⁵¹ When the author’s works are circulated without permission or attribution, “the personality of the author has been violated.”⁴⁵² Indeed, the Hegelian version of the personality/communication theory is intertwined with the Constitution’s promotion of the progress of the science and the useful arts, as in his view copyright is “the ‘best way of progressing science and arts,’ as the purpose of intellectual property is to facilitate the recognition of an author’s property by others.”⁴⁵³

Article I, Section 8, Clause 8 seeks to promote the progress of science, but there is a particular vehicle it chooses for that purpose—protecting the writings of authors for limited times. Frankly, none of the stated rationales apply with any particular force to protecting the creations of artificial intelligence that lacks substantial human input.⁴⁵⁴ And that is not just a policy assertion, it is a point where we can reflect about the purposes of copyright—by showing where copyright may not be intended to apply, we can see more clearly the purposes of using it to protect the writings of authors.

Copyright law has always been centered on human authorship and “celebrates human creativity.”⁴⁵⁵ Although the incentives copyright offers matter, an emphasis on these incentives as the motivation for copyright protection “tend[s] to obscure the centrality of human creativity to copyright law and theory.”⁴⁵⁶ The fact that this has been treated more as an intuition than a central principle is more to do with the fact that the examples given by this

448. Laura Biron, *Creative Work and Communicative Norms: Perspectives from Legal Philosophy*, in *THE WORK OF AUTHORSHIP* 19, 21–25 (Mireille van Eechoud ed., 2014). There are other theories as well; for instance, IP social justice theory “treats IP protection as a social ordering mechanism through which society progresses by nurturing beneficial intellectual activity.” Lateef Mtima & Steven D. Jamar, *Introduction: Intellectual Property Social Justice Theory: History, Development, and Description*, in *THE CAMBRIDGE HANDBOOK OF INTELLECTUAL PROPERTY AND SOCIAL JUSTICE* 1, 2 (Steven D. Jamar & Lateef Mtima eds., 2024).

449. Adam Mossoff, *The Use and Abuse of IP at the Birth of the Administrative State*, 157 U. PENN. L. REV. 2001, 2020 (2009).

450. *Id.* at 2023.

451. Kim Treiger-Bar-Am, *Kant on Copyright: Rights of Transformative Authorship*, 25 CARDOZO ARTS & ENT. L.J. 1059, 1082 (2008).

452. Mackenzie Caldwell, *What Is an “Author”?* *Copyright Authorship of AI Art Through a Philosophical Lens*, 61 HOUS. L. REV. 411, 430 (2023).

453. *Id.* at 431 (quoting PETER DRAHOS, *A PHILOSOPHY OF INTELLECTUAL PROPERTY* 97 (2016)).

454. Of course, conscious use of AI as an assistive tool when part of the creator’s toolkit is a different question.

455. Jane C. Ginsburg, *Humanist Copyright*, 6 J. FREE SPEECH L. 91, 93 (2025).

456. *Id.*

article were until very recently mostly trivia rather than commonplace. With the copyright office registering thousands of AI-generated works, we are finally at that point in the future long expected—that there is no avoiding confronting this and acknowledging that human authorship is the central principle of copyright law. That authorship might be mediated by generative AI, but the authorial spark must be human. After all, “if we refuse to take the position that the focus of IP law is human creativity and innovation, *what will be left for us to do?*”⁴⁵⁷

CONCLUSION: THE GROUNDHOG DAY OF COPYRIGHT FOR AI

In the Copyright Office’s Report on Copyrightability of AI works, the guidance from 1965 was explicitly embraced. The Copyright Office explained that regarding generative AI works today,

[t]he same analysis applies in the context of AI technology. For a work created using AI, like those created without it, a determination of copyrightability requires fact-specific consideration of the work and the circumstances of its creation. Where AI merely assists an author in the creative process, its use does not change the copyrightability of the output. At the other extreme, if content is entirely generated by AI, it cannot be protected by copyright. Between these boundaries, various forms and combinations of human contributions can be involved in producing AI outputs.⁴⁵⁸

I originally called this project the “groundhog day” of AI and copyright, but of course at the end of the movie *Groundhog Day*, Bill Murray’s character learns something. We, on the other hand, seem to have learned nothing. For seven decades now, the issue of AI copyright has been raised, debated, and treated as a novel issue before the same resolution is reached. Are we going to do this again, or are we going to forge a path forward?

The issue of generative AI is not new, even as the methods are. Shakespeare’s adage that past is prologue is of course part of the importance of understanding the history of generative AI and copyright, but this is not just the prologue—it is the present. The law is in the same place as it was in 1965, and this forces us to ask if there is any real problem with that. If there is not, then there is no real conceptual difficulty regarding AI authorship but that would suggest a lot of ink has been spilled over a simple question. On the other hand, if there is a conceptual difficulty, why are we unable to see a better solution? Despairing, I asked ChatGPT, and this is what it had to say:

457. Daniel J. Gervais, *The Human Cause*, in RESEARCH HANDBOOK ON INTELLECTUAL PROPERTY AND ARTIFICIAL INTELLIGENCE 38 (Ryan Abbott ed. 2022); Matt Blaszczyk, *Copyright’s Nominal Humanism*, 58 LOY. L.A. L. REV. (forthcoming 2026) (arguing copyright needs to take this commitment to humanism more seriously), <https://ssrn.com/abstract=5376145>.

458. U.S. COPYRIGHT OFF., *supra* note 2, at 2 (internal citations omitted).

Copyright law has struggled to adapt to the challenges posed by generative content due to its reliance on traditional notions of human authorship and originality, which are increasingly complicated by the involvement of artificial intelligence (AI) systems in creative processes. Under current legal frameworks, copyright protection is typically granted to works created by a human author, yet AI-generated works lack a clear human origin, raising questions about the assignment of authorship, ownership, and the scope of protection. Additionally, the rapid evolution of AI technologies outpaces legislative processes, leaving gaps in how existing legal doctrines, such as the “derivative work” doctrine, apply to content generated by AI based on pre-existing data. This has created uncertainty around the ownership rights of both the creators of the AI systems and the users who interact with them, thereby undermining the law’s ability to effectively address the nuances of generative content in a digital, AI-driven age.⁴⁵⁹

As with so much here, I’m not sure that clarifies much, but at least the author and his instrument are of a similar mind here. Perhaps further technology advances will be able to offer a solution. Perhaps it was merely an issue of my prompts. Or perhaps this is something where a sense of reverence for human authorship is required more than ever.

459. Zvi S. Rosen, ChatGPT, “explain in one paragraph, law review style, why copyright law has been unable to adequately adapt to the challenges of authorship related to generative content.” (Jan. 29, 2025) (on file with author).