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That Thing Ain't Human: The Artificiality of "Human Authorship" and the Intelligence in Expanding Copyright Authorship to Fully-Autonomous AI

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Recommended Citation

Ernest Oleksy, *That Thing Ain't Human: The Artificiality of "Human Authorship" and the Intelligence in Expanding Copyright Authorship to Fully-Autonomous AI*, 72 Clev. St. L. Rev. 263 (2023)
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That Thing Ain't Human: The Artificiality of "Human Authorship" and the Intelligence in Expanding Copyright Authorship to Fully-Autonomous AI

ERNEST M. OLEKSY*

ABSTRACT

The U.S. Copyright Review Board (the "Board") decided that works entirely created by fully-autonomous artificial intelligence ("AI") are not entitled to copyright protections. The Board based its decision on a copyrightability requirement referred to as "human authorship." However, the Copyright Act of 1976 (the "Act") never mentions a "human" requirement to copyright authorship, nor do most of the Board's cited authorities. Denying authorship to intellectually-impressive and economically-valuable works under a poorly-established legal subelement is antithetical to copyright law's history and to Congress's constitutional mandate to "promote . . . [the] useful [a]rts . . ." It leaves creators who use AI to create works with no protections for their creations. But this Note argues that, when properly interpreting various copyright-law authorities that allegedly establish a "human authorship" requirement, copyright law does not require "human authorship," but "intellectual labor." Under this standard, AI-produced works are entitled to copyright protections.

* J.D. Candidate 2024, Cleveland State University College of Law. Thanks to the *Cleveland State Law Review* Team for their work on this Note, as well as the rest of Issue 72.1. It is an honor to be your Editor-in-Chief. Special thanks to Professors Karin Mika and Alex Frondorf for their help in refining this Note, and to Rita Kline and Professor Christa Laser for developing my interest in the intersection of intellectual-property law and artificial intelligence. Disclosure: I am a Co-Founder of a generative-AI company, Pipnote LLC. All views expressed in this Note are my own and do not reflect the positions of Pipnote LLC, nor any other business or organization I am affiliated with. All errors are my own.

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I. INTRODUCTION

Imagine you are a brilliant artificial-intelligence (“AI”) programmer devoting your life to developing a fully-autonomous¹ AI that efficiently produces intellectual works, like computer programs, award-winning-quality short stories, and more.² Now

¹ Wolfhart Totschnig, *Fully Autonomous AI*, 26 SCI. & ENG’G ETHICS 2473, 2473 (2020) (“In the fields of artificial intelligence and robotics, the term ‘autonomy’ is generally used to mean the capacity of an artificial agent to operate independently of human guidance.”).

² See Chloe Olewitz, *A Japanese A.I. Program Just Wrote a Short Novel, and it Almost Won a Literary Prize*, DIGIT. TRENDS (Mar. 23, 2016), <https://www.digitaltrends.com/cool-tech/japanese-ai-writes-novel-passes-first-round-national-literary-prize/>; see also Kevin

imagine you have successfully programmed such an AI, but you cannot copyright its valuable creations.

This hypothetical is now law after the U.S. Copyright Office (“the Office”) denied registration³ for a painting that was entirely produced by a fully-autonomous AI known as the *Creativity Machine*.⁴ The Office reasoned, *inter alia*, that a fully-autonomous AI is ineligible for copyright protection because it fails to satisfy the “human authorship” requirement.⁵ Although the Copyright Act of 1976 (the “Act”) does not require a “human” author,⁶ the Office nevertheless claims this requirement exists by:

Roose, *We Need to Talk About How Good A.I. is Getting*, N.Y. TIMES (Aug. 24, 2022), <https://www.nytimes.com/2022/08/24/technology/ai-technology-progress.html>; Jean-Louis Lauriere, *A Language and a Program for Stating and Solving Combinatorial Problems*, 10 ARTIFICIAL INTELLIGENCE 29, 29 (1978). See generally Marvin Fry, *China Introduced Robots Capable of Writing Newspapers*, SCI. INFO, <https://scienceinfo.net/china-introduced-robots-capable-of-writing-newspapers.html> (Dec. 12, 2018); Jacob R. Jacobs, *Generating Programs Automatically-Let Your Apple II Do the Programming*, BYTE, Dec. 1981, at 352; Bob Louden, *The Last One, a Program Generator from D.J. 'AI'*, INFO WORLD, Jan. 18, 1982, at 18.

³ Though beyond the scope of this Note, readers should be aware that another fully-autonomous AI programmed by Dr. Stephen L. Thaler, called “Device for the Autonomous Bootstrapping of Unified Sentience,” was also denied a patent registration. See *Thaler v. Hirshfeld*, 558 F. Supp. 3d 238, 240 (E.D. Va. 2021). Although patent law is similar to copyright law because they are related intellectual-property fields, it is important to note that there are meaningful differences between patents and copyrights that may be dispositive in future decisions pertaining to AI authorship. For instance, per 35 U.S.C. § 154, the term of a patent is only 20 years from the date the application was filed in the United States. However, per 17 U.S.C. § 302, a copyright’s term is the life of the author plus 70 years after the author’s death. To demonstrate this issue of scope, if AI becomes eligible for copyright authorship, copyright law will need to grapple with what the resulting term would be for a copyrighted work when the AI author does not have a “life.”

⁴ U.S. Patent Nos. 5,659,666 (issued Aug. 19, 1997) & 7,454,388 (issued Nov. 18, 2008).

⁵ U.S. Copyright Off., Copyright Rev. Bd., Opinion Letter on Second Request for Reconsideration for Refusal to Register a Recent Entrance to Paradise (Correspondence ID 1-3ZPC6C3; SR # 1-7100387071) (Feb. 14, 2022) [hereinafter “Board Refusal of Second Request”], <https://www.copyright.gov/rulings-filings/review-board/docs/a-recent-entrance-to-paradise.pdf> [<https://perma.cc/8LVJ-NM63>]. Note that the Board’s decision and reasoning were upheld by a trial court in *Thaler v. Perlmutter*, No. CV 22-1564 (BAH), 2023 WL 5333236 (D.D.C. Aug. 18, 2023). As of November 6, 2023 at 1:12 AM, the most updated procedural posture of this matter is that Dr. Thaler appealed this decision on October 18, 2023.

⁶ See 17 U.S.C. § 102(a); see also *Eldred v. Ashcroft*, 537 U.S. 186, 212 (2003) (“[I]t is generally for Congress,” not the Board, “to decide how best to pursue the Copyright Clause’s objectives.”); U.S. CONST. art. I, § 8, cl. 8 (establishing Congress’s mandate to “promote . . . [the] useful [a]rts”); Board Refusal of Second Request, *supra* note 5, at 1–2. See generally H.R. REP. NO. 94-1476, at 51–52 (1976) (demonstrating the legislative intent to leave “very broad” the phrase “original works of authorship,” as well as the intent to protect creative works that are within the U.S. Constitution).

- (1) relying on dicta from old copyright cases;⁷
- (2) analogizing to cases involving non-human authors;⁸ and
- (3) justifying the reliance of the Office’s administrative manual—the COMPENDIUM⁹—on the National Commission on New

⁷ Board Refusal of Second Request, *supra* note 5, at 4; *see also* Burrow-Giles Lithographic Co. v. Saroni, 111 U.S. 53, 58 (1884); *In re Trade-Mark Cases*, 100 U.S. 82, 94 (1879) (describing beneficiaries of the Constitution’s Intellectual-Property Clause as ‘authors,’ who are one of ‘two classes’ of ‘persons’); Goldstein v. California, 412 U.S. 546, 561 (1973) (holding that “[w]hile an ‘author’ may be viewed as an individual who writes an original composition, the term, in its constitutional sense, has been construed to mean an ‘originator,’ ‘he to whom anything owes its origin’”).

⁸ Board Refusal of Second Request, *supra* note 5, at 4–5; *see also* Urantia Found. v. Maaherra, 114 F.3d 955, 957–59 (9th Cir. 1997) (holding that “some element of human creativity must have occurred in order for the Book to be copyrightable” because “it is not creations of divine beings that the copyright laws were intended to protect”); *Naruto v. Slater*, 888 F.3d 418, 426 (9th Cir. 2018); *Kelley v. Chi. Park Dist.*, 635 F.3d 290, 304 (7th Cir. 2011) (citations omitted) (rejecting a copyright claim to a “living garden” because “authorship is an entirely human endeavor” and “a garden owes most of its form and appearance to natural forces”); *Satava v. Lowry*, 323 F.3d 805, 813 (9th Cir. 2003) (finding depictions of jellyfish not protected by copyright because material “first expressed by nature are the common heritage of humankind, and no artist may use copyright law to prevent others from depicting them”).

⁹ The Copyright Office’s Compendium is its administrative manual that guides staff on how to apply the Office’s policies and procedures. *Compendium of U.S. Copyright Office Practices*, COPYRIGHT.GOV, <https://www.copyright.gov/comp3/> (last visited Nov. 6, 2023); *see also* U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 721.1 (3d ed. 2021) [hereinafter COMPENDIUM]. Note that the Compendium itself acknowledges that, as an administrative manual, it is merely persuasive authority. *Id.* at 2 (“The *Compendium* does not override any existing statute or regulation. The policies and practices set forth in the *Compendium* do not in themselves have the force and effect of law and are not binding upon the Register of Copyrights or Copyright Office staff.”). *See generally* *Baouch v. Werner Enterprises, Inc.*, 908 F.3d 1107, 1117 (8th Cir. 2018) (holding that the Department of Labor’s Handbook is mere persuasive authority because agency manuals “lack the force of law” and “do not warrant *Chevron*-style deference”); *Frerks by Frerks v. Shalala*, 848 F. Supp. 340, 350 (E.D. N.Y. 1994), *aff’d sub nom.*, 52 F.3d 412 (2d Cir. 1995) (affording the Secretary of Health and Human Services Programs Operations Manual System mere persuasive authority because it is not published in the Federal Register, much like the Copyright Office’s claims of a “human authorship” requirement (citing *St. Mary’s Hospital v. Blue Cross & Blue Shield*, 788 F.2d 888, 890 (2d Cir. 1986) (discussing the pre-POMS manual)); *Davis v. Sec’y of Health and Hum. Servs.*, 867 F.2d 336, 340 (6th Cir. 1989); *Ruppert v. Sec’y of Health and Hum. Servs.*, 671 F. Supp. 151, 158 n.3 (E.D. N.Y. 1987), *aff’d in part and reversed in part*, 871 F.2d 1172 (2d Cir. 1989); *Romano-Murphy v. Comm’r*, 816 F.3d 707, 719 (11th Cir. 2016) (holding the Internal Revenue Manual is mere “persuasive authority” (quoting *Griswold v. United States*, 59 F.3d 1571, 1576 n.8 (11th Cir. 1995))). *Compare* *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 863 (1984) (deferring to formal agency rulemaking when the agency’s reasoning was “supported by the public record developed in the rulemaking process, as well as by certain private studies”), *with* *Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944) (weighing “the thoroughness evident in its consideration, the validity of its reasoning, its consistency with earlier and later pronouncements” when determining an appropriate amount of deference to an

Technological Uses of Copyrighted Works (“CONTU”) to demonstrate the requirement of “human authorship.”¹⁰

The Board’s decision¹¹ could not come at a worse time for AI programmers because modern AI has reached unanticipated levels of sophistication.¹² Because AI has innovated various fields and industries in manners humans never could,¹³ its true value cannot be fully calculated in dollars.¹⁴ But the available metrics show that

agency interpretation of a statute), *and* *Christensen v. Harris Cnty.*, 529 U.S. 576, 587 (2000) (encompassing “agency manuals” as authorities entitled to mere “respect” under *Skidmore*).

¹⁰ National Commission on New Technological Uses of Copyrighted Works, Pub. L. 93-573, § 201(b)(2), 88 Stat. 1873 (1974); *see also* Board Refusal of Second Request, *supra* note 5, at 5; COMPENDIUM, *supra* note 9, at § 721.1.

¹¹ Board Refusal of Second Request, *supra* note 5, at 1.

¹² *See* Roose, *supra* note 2; *see also* *ChatGPT: Optimizing Language Models for Dialogue*, OPENAI (Aug. 9, 2023), <https://online-chatgpt.com> (providing a download of the paradigm-shifting, generative AI “which interacts in a conversational way. The dialogue format makes it possible for ChatGPT to answer follow-up questions, admit its mistakes, challenge incorrect premises, and reject inappropriate requests.”).

¹³ *See* *ChatGPT*, *supra* note 12; *see also* Andrew B. Kahng, *AI System Outperforms Humans in Designing Floorplans for Microchips*, NATURE (June 9, 2021), <https://www.nature.com/articles/d41586-021-01515-9>; David Rotman, *AI is Reinventing the Way We Invent*, MIT TECH. REV. (Feb. 15, 2019), <https://www.technologyreview.com/2019/02/15/137023/ai-is-reinventing-the-way-we-invent/>; Patrick J. Kigler, *How Artificial Intelligence is Totally Changing Everything*, HOW STUFF WORKS (Dec. 20, 2019), <https://science.howstuffworks.com/artificial-intelligence.htm> (acknowledging that “AI already can outperform humans in some narrow domains . . .”).

¹⁴ Even though it is difficult to put a definitive number as to the dollar value of products made and services rendered by AI, estimates have been provided. *See* Josh Howarth, *57+ Amazing Artificial Intelligence Statistics (2022)*, EXPLODING TOPICS (Aug. 4, 2022), <https://explodingtopics.com/blog/ai-statistics> (estimating “[t]he global AI market is currently worth \$136.6 billion” and projecting “[t]he global AI market . . . to grow to \$1.81 trillion by 2030”); *see also* *Artificial Intelligence Market Size, Share & Trends Analysis Report By Solution, By Technology (Deep Learning, Machine Learning, Natural Language Processing, Machine Vision), By End Use, By Region, And Segment Forecasts, 2022 - 2030*, GRAND VIEW RSCH., <https://www.grandviewresearch.com/industry-analysis/artificial-intelligence-ai-market> (last visited Nov. 6, 2023). *Contra* Patrick Zurth, *Artificial Creativity? A Case Against Copyright Protection for AI-Generated Works*, 25 UCLA J.L. & TECH. at 1, 17 (2021) (raising concerns over granting monopolies to entities using efficient, fully-autonomous AI in a copyright-trolling manner while failing to acknowledge intellectual-property law’s history over limiting stifling monopolies within similarly efficient and potentially trolling industries, like fashion); *contra generally* Caen A. Dennis, *AI-Generated Fashion Designs: Who or What Owns the Goods*, 30 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 593, 597–601 (2020) (noting that, even after legislative attempts like the Innovative Design Protection Act of 2012 and caselaw successes like *Star Athletica, L.L.C. v. Varsity Brands, Inc.*, 137 S. Ct. 1002, 1007 (2017) and *Kieselstein-Cord v. Accessories by Pearl, Inc.*, 632 F.2d 989, 994 (2d Cir. 1980), copyright protections for the fast and constantly-innovating U.S. fashion industry prevent over-bearing monopolies by not passing statutes that would make fashion designs copyrightable).

2023's second fiscal quarter (Q2) has seen a surge in the market's interest in AI.¹⁵ And the research and development efforts of major companies throughout the world suggests that further innovation and economic gains are inevitable.¹⁶

Left undisturbed, the U.S. Copyright Review Board's decision punishes innovative creators¹⁷ who produce works with fully-autonomous AI and leaves them without recourse when others unfairly use their works.¹⁸ The Board's decision also creates an absurd reality where a work created by a fully-autonomous AI is not owned by anyone because the AI is barred for lack of human authorship,¹⁹ while the human author or

¹⁵ George Steer, *Artificial Intelligence Stocks Soar on ChatGPT Hype*, FIN. TIMES (Feb. 11, 2023), <https://www.ft.com/content/e341458e-ec12-43bb-835c-26392678ded0> (charting surging stock prices for C3.ai, SouthHound AI, and BigBear.AI). *See generally* Q.ai, *AI Stocks to Watch in 2023*, FORBES (Feb. 9, 2023), <https://www.forbes.com/sites/qai/2023/02/09/ai-stocks-to-watch-in-2023/?sh=609f6c7c70a1>.

¹⁶ Martin Coulter & Greg Bensinger, *Alphabet Shares Dive After Google AI Chatbot Bard Flubs Answer in Ad*, REUTERS (Feb. 8, 2023, 7:49 PM), <https://www.reuters.com/technology/google-ai-chatbot-bard-offers-inaccurate-information-company-ad-2023-02-08/> (noting that the market race to produce efficient AI has caused Alphabet, Inc., a multinational holding company specializing in technology, to “los[e] \$100 billion in market value on [February 8th, 2023] after its [AI] chatbot shared inaccurate information in a promotional video and a company event failed to dazzle . . .”). *See generally* Q.ai, *supra* note 15 (discussing how, amongst other companies, Microsoft bought ChatGPT to power its Bing search engine, Google was in the testing phase of its own generative AI: Bard, and the Chinese company Baidu is not only developing its own ChatGPT rival in “Ernie Bot,” but is also researching “AI-based autonomous driving [technology]” to develop “the world’s largest autonomous ride-hailing service area”).

¹⁷ As is standard within the legal community, the juridical use of the word “persons” here encompasses “corporations.” However, I am appreciative of the wealth of scholarship that opposes the doctrine of “corporate personhood” on similar grounds and uses similar logic as I do in opposing “human authorship.” *See, e.g.,* Minneapolis & St. L. Ry. Co. v. Beckwith, 129 U.S. 28, 28 (1889) (“It is contended by counsel as the basis of his argument, and we admit the soundness of his position, that corporations are persons within the meaning of the clause in question. It was so held in *Santa Clara County v. Southern Pacific Railroad Co.*”); *see also* Nikolas Bowie, *Corporate Personhood v. Corporate Statehood*, 132 HARV. L. REV. 2009, 2018 (2019) (identifying “own[ing] property” as a right granted to corporations through the “corporate personhood” doctrine). *Contra, e.g.,* Adam Winkler, *Corporate Personhood and Constitutional Rights for Corporations*, 54 NEW ENG. L. REV. 23, 36 (2019) (finding Justice Field’s reliance on precedent to establish “corporate personhood” to plainly misinterpret his cited caselaw); JOHN J. FLYNN, *CORPORATIONS AND SOCIETY: POWER AND RESPONSIBILITY* 131, 133, 136 (Warren J. Samuels & Arthur S. Miller eds., 1987) (criticizing the Court for erroneously concluding that “corporate personhood” is good law); Dale Rubin, *Corporate Personhood: How the Courts Have Employed Bogus Jurisprudence to Grant Corporations Constitutional Rights Intended for Individuals*, 28 QUINNIPIAC L. REV. 523, 552–59 (2010) (arguing that *Santa Clara* has been inaccurately cited to expand corporations’ constitutional rights).

¹⁸ *See* 17 U.S.C. § 504(b). *See generally id.* §§ 101, 201(a)–(b).

¹⁹ Board Refusal of Second Request, *supra* note 5, at 4–6.

employer is seemingly barred for lack of minimal originality.²⁰ The uncertainty caused by the Office's decision on the legal status of AI-created works has already been taken seriously by law firms.²¹ This is an unfortunate turn for many forward-thinking firms because looking backwards to intellectual-property law's history in deliberating over AI creations shows that such firms, as well as several international organizations, already alerted the U.S. government about the need to expand intellectual-property rights to AI-produced creations.²²

And the Board's decision has galvanized legal scholarship even more than the legal profession.²³ Unsurprisingly, many scholars have found the "human authorship"

²⁰ See Talia Admiraal, *Who Owns the IP Created by AI?*, LEGALVISION (Oct. 29, 2019), <https://legalvision.com.au/who-owns-ip-created-by-ai/> ("If AI programs are unable to own the IP they create, then all created works will be in the public domain and may not be entitled to protection."). Intellectual-property scholars have dubbed this long-recognized problem as the "public-good problem," and it has spurred scholarship during times of technological advancement—such as in response to CONTU—about how intellectual-property law ought to expand to protect and incentivize novel, innovative, and creative works. See, e.g., Peter S. Menell, *An Analysis of the Scope of Copyright Protection for Application Programs*, 41 STAN. L. REV. 1045, 1059–66 (1989).

²¹ See, e.g., *Which AI Components are Copyright Protectable and Which are Not?*, JONES DAY (Mar. 2022), <https://www.jonesday.com/en/insights/2022/03/which-ai-components-are-copyright-protectable> (noting the uncertainty of ownership for works lacking human involvement); *Art and Artificial Intelligence Collide with Copyright Law*, ROMANO L. (Dec. 27, 2022), <https://www.romanolaw.com/2022/12/27/art-and-artificial-intelligence-collide-with-copyright-law/> (same). But see *AI Image Generator—Copyright Litigation*, JOSEPH SAVERI L. FIRM (2023), <https://www.saverilawfirm.com/our-cases/ai-artgenerators-copyright-litigation> (noting how an AI-generated image's lack of a copyright owner can still be used to infringe on the rights of other copyright-holders).

²² Stephen T. Boughner & S. Mahmood Ahmad, *NSIP Law's Response to USPTO Request for Comments on Patenting Artificial Intelligence Inventions*, NSIP L. (Nov. 9, 2019), <https://www.nsiplaw.com/images/documents/NSIP-Comments-re-PTO-AI-Questions.pdf> <https://perma.cc/U437-YV3F> (arguing that AI programs should be analyzed under the inventive-concept standard for manufacturing methods to determine if AI inventions are patentable); see also *Alice Corp. Pty. Ltd. v. CLS Bank Intern.*, 134 S. Ct. 2347, 2355 (2014); *Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc.*, 132 S. Ct. 1289, 1291 (2012). For an international organization alerting the USPTO on the prevalence of AI in patentable inventions, see WORLD INTELL. PROP. ORG., WIPO TECHNOLOGY TRENDS 2019—ARTIFICIAL INTELLIGENCE 31 (2019) ("AI [patent] filings concerning both robotics and control methods have increased by 55 percent [from 2013 to 2016], for example, while those for planning/scheduling have grown by 37 percent.").

²³ I conducted the following Westlaw search on November 6, 2023 at 1:04 AM and yielded ten cases: "human authorship" AND copyright! Further, the following cases merely mention "human authorship" in passing: (1) *Cambria Co. LLC v. Pental Granite & Marble, Inc.*, No. CV 12-228, 2013 WL 12147608, at *2 (D. Minn. Oct. 17, 2013), (2) *Syngy, Inc. v. ZS Assocs., Inc.*, No. 07-3536, 2015 WL 899408, at *33 (E.D. Pa. Mar. 3, 2015), and (3) *Digital Commc'ns Assocs., Inc. v. Softklone Distrib. Corp.*, 659 F. Supp. 449, 463 (N.D. Ga. 1987). Further, (4) *Stebbins v. Rebolo*, No. 22-CV-00546-JSW, 2022 WL 2668372, at *2 (N.D. Cal. July 11, 2022) and (5) *Stebbins v. Polano*, No. 21-CV-04184-JSW, 2022 WL 2668371, at *4 (N.D. Cal. July 11, 2022) discuss fact-patterns where a human provided no intellectual labor, as they involved video recordings occurring without the human applicant's knowledge nor intention,

requirement to be disturbing.²⁴ They have responded by arguing the “human authorship” requirement should be *reformed* to accommodate AI authorship.²⁵ However, I claim copyright law has *no* “human authorship” requirement because the “human” subelement arose from cases whose holdings protected *intellectual* works of authorship, not *human* works of authorship.²⁶

In furthering this claim, Part II of this Note provides background on what AI is and on its current authorship ineligibility. Part III argues that the authorities relied upon for the “human authorship” requirement were not concerned with an author’s humanity but, instead, with its “intellectual labor.”²⁷ Part IV elaborates by reviewing allegedly analogous cases involving non-human authors but concluding that such cases are distinguishable from works created by fully-autonomous AI, such as the *Creativity Machine*.²⁸ In Part V, this Note considers the COMPENDIUM’s reliance on the CONTU as a basis for the “human authorship” requirement but finds its discussion on using 1970’s computers as assisting tools to be outdated and distinguishable from a fully-autonomous AI’s intellectual labor.²⁹ Part VI closes the analysis by reviewing

distinguishing them from the intentional and intelligent creations that fully-autonomous AI can and have created. Notable, the Board’s decision was reviewed by a trial court in (6) *Thaler v. Perlmutter*, No. CV 22-1564 (BAH), 2023 WL 5333236 (D.D.C. Aug. 18, 2023), where the Board’s decision and reasoning were upheld—Dr. Thaler appealed this decision on October 18, 2023. The remaining cases are discussed throughout this Note. However, despite the dearth of precedent for human authorship, it remains a hot topic amongst scholars, as this same query yielded 357 secondary sources.

²⁴ See, e.g., Shyamkrishna Balganes, *Causing Copyright*, 117 COLUM. L. REV. 1, 33–34 (2017) (arguing that a causation element should be added when determining authorship to “identify the human agent responsible for bringing the work into existence”); Victor M. Palace, *What if Artificial Intelligence Wrote This? Artificial Intelligence and Copyright Law*, 71 FLA. L. REV. 217, 241 (2019) (noting that permitting AI authorship results in legal uncertainty and, thus, concluding that AI creations should immediately enter the public domain); Annemarie Bridy, *Coding Creativity: Copyright and the Artificially Intelligent Author*, 2021 STAN. TECH. L. REV. 5, 69 (proposing that AI authorship should be assimilated into copyright law through the work made for hire doctrine); Kalin Hristov, *AI and the Copyright Dilemma*, J. FRANKLIN PIERCE FOR INTELL. PROP. 431, 453–54 (2017) (proposing an extension of the works made for hire doctrine to apply to AI-generated works).

²⁵ See sources cited *supra* notes 18, 22.

²⁶ *Contra* Vincec Feliu, 25 U.S.F. INTELL. PROP. & TECH. L.J. 105, 126 (2021) (arguing that there should be an alternative to copyright law to provide copyright protections for AI-created works to “bypass[] the constitutional requirement for authorship”); *but see* U.S. CONST. art. I, § 8, cl. 8 (establishing Congress’s mandate to “promote the Progress of Science and useful arts”).

²⁷ See *In re Trade-Mark Cases*, 100 U.S. 82, 94 (1879); see also *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 58 (1884).

²⁸ *Creativity Machine*, A Recent Entrance to Paradise (painting), in Michael D. Murray, *Generative and AI Authored Artworks and Copyright Law*, 45 HASTINGS COMM’NS AND ENT. L.J. 27, 42 (2023); see also Board Refusal of Second Request, *supra* note 5, at 1.

²⁹ National Commission on New Technological Uses of Copyrighted Works, *supra* note 10, at 55 (establishing that one of the two broad subjects that Congress created this commission to address was “the creation of new works with computer assistance”). *But cf.* Mizuki Hashiguchi,

the roots and functions of intellectual-property law's history to determine that copyright law has the broad purposes of protecting the fruits of a creator's labor and benefitting the public good.

Thus, this Note concludes in Part VII that authorship for fully-autonomous AI can coexist with current copyright law when properly interpreting the authorities that allegedly establish a "human authorship" requirement.³⁰

II. BACKGROUND

A. *Artificial Intelligence is Capable of Intellectual Labor*

Depending on the context, there are different acceptable definitions for AI.³¹ However, the definition most applicable to a discussion on copyright authorship is that

The Global Artificial Intelligence Revolution Challenges Patent Eligibility Law, 13 J. BUS. & TECH. L. 1, 3, 24, 26 (describing AI as an assisting tool for humans in various contexts); Chiteki Zaisan Kōtō Saibansho [Intell. Prop. High Ct.], June 24, 2008, Hei 19 (Gyō ke) no. 10369, IP JUDGMENTS DATABASE 1, 25, http://www.ip.courts.go.jp/app/files/hanrei_en/068/000068.pdf [<https://perma.cc/7MXA-VHDN>] (Japan) (describing an AI-like invention that "provid[es] a computer-based technical means for assisting dental treatment"); Hristov, *supra* note 24, at 433 (suggesting that some AI are computers that can assist humans in creating "artistic or innovative works").

³⁰ Notably, if copyright law changes its position on AI authorship in the near future, this would not be the first time that intellectual-property law dramatically shifted its position on authorship and how it pertains to an author's humanity. *See* *Invention of a Slave*, 9 Op. Att'ys Gen. 171 (1858) (declaring that African Americans, both enslaved and free, are barred from registering as a patent's inventor because of a lack of legal personhood). *But see* *Citizenship*, 10 Op. Att'ys Gen. 382 (1862) (reversing the "Invention of a Slave" declaration and granting eligibility for patent registration to all African Americans). Part of the impetus for the Attorney General's redeclaration was a united front amongst abolitionists and slaveowners to recognize slaves' eligibility to register for patent protections. However, both sides had decidedly different reasons: slaveowners emphasized the legal and utilitarian benefits of recognizing the patentability of inventions created by slaves, while abolitionists emphasized progressive and equitable reasons to expand intellectual-property rights to African Americans. *See, e.g.*, Letter from Oscar J. E. Stuart to John A. Quitman, Senator, Miss. (Aug. 29, 1857); Letter from Oscar J. E. Stuart to Jacob Thompson, Sec'y of the Interior (June 16, 1858) (on file with the National Archives); Act of May 21, 1861, ch. 46, Pub. Laws, Provisional Cong., 2d Sess., *reprinted in* THE STATUTES AT LARGE OF THE PROVISIONAL GOVERNMENT OF THE CONFEDERATE STATES OF AMERICA 148 (James M. Matthews ed., 1864); *see also* Dorothy C. Yancy, *The Stuart Double Plow and Double Scraper: The Invention of a Slave*, 69 THE J. OF NEGRO HIST. 48, 49 (1984); Congressman Philemon Bliss, Speech in The House of Representatives (Jan. 7, 1858), *in* NAT'L ERA, Feb. 8, 1858, at 23. Analogizing to the present situation pertaining to AI authorship, while papers like this one highlight legal and, consequently, utilitarian benefits of expanding copyright protections to works produced by fully-autonomous AI, readers should also note that Dr. Thaler's "Artificial Inventor Project" highlights progressive and equitable considerations in expanding intellectual-property rights to AI-created works. *See* Ryan Abbot, THE ARTIFICIAL INVENTOR PROJECT, <https://artificialinventor.com/> (last visited Nov. 6, 2023); *see also* Ryan Abbott, *The Artificial Inventor Project*, WIPO MAG. (Dec. 2019), https://www.wipo.int/wipo_magazine/en/2019/06/article_0002.html.

³¹ Dalvinder S. Grewal, *A Critical Conceptual Analysis of Definitions of Artificial Intelligence as Applicable to Computer Engineering*, 16 IOSR J. COMPUT. ENG'G 9, 9–13 (2014); *see also* Bernard Marr, *The Key Definitions of Artificial Intelligence (AI) that Explain its Importance*, FORBES (Feb. 14, 2018),

AI is “the ability of a digital computer or computer-controlled robot³² to perform tasks commonly associated with intelligent beings.”³³ This distinguishes AI from standard computers, which function by mere Boolean logic so *humans themselves* can use such computers to perform tasks.³⁴ Thus, standard computers operate at a significantly lower level of sophistication than an AI computer—which incorporates additional logic paradigms.³⁵ Because of this synthesis of logic paradigms, modern AI have

<https://www.forbes.com/sites/bernardmarr/2018/02/14/the-key-definitions/?sh=3f6245729920>; CHRISTOPHER MANNING, ARTIFICIAL INTELLIGENCE DEFINITIONS (2020).

³² Relatedly, Tesla unveiled a 2022 prototype of a mobile, humanoid robot that is powered by AI. Tesla remains bullish on advancing AI technology. In fact, the company projects that the profits it could derive from the AI-robot market may surpass even its car sales. Betsy Reed, *Elon Musk Unveils Humanoid ‘Optimus’ Robot at Tesla’s AI Day*, THE GUARDIAN (Sept. 30, 2022), <https://www.theguardian.com/technology/2022/sep/30/tesla-optimus-humanoid-robot-elon-musk-ai-day>.

³³ This definition is the most appropriate for this Note as it emphasizes that AI’s intelligence in certain task domains can be tantamount to that of other intelligent beings—like humans. B.J. Copeland, *Artificial Intelligence*, ENCYCLOPEDIA BRITANNICA (Mar. 18, 2022), <https://www.britannica.com/technology/artificial-intelligence/Alan-Turing-and-the-beginning-of-AI>; see also Richmond Thomason, *Logic and Artificial Intelligence*, STAN. ENCYCLOPEDIA OF PHIL. (Aug. 27, 2003), <https://plato.stanford.edu/entries/logic-ai/>. Notably, separating intelligence based on task domains aligns with certain psychological research on the nature of human intelligence. See, e.g., HOWARD GARDNER, FRAMES OF MIND: THE THEORY OF MULTIPLE INTELLIGENCES 8–9, 64–67 (2011).

³⁴ Boolean logic, also known as “Boolean reasoning” or “Boolean algebra,” applies algebraic equations to return output values of “TRUE” or “FALSE.” See MARTIN FRICKE, KO KNOWLEDGE ORGANIZATION 177–91 (2021); see also FRANK M. BROWN, BOOLEAN REASONING: THE LOGIC OF BOOLEAN EQUATIONS 1–3 (2d ed. 2003).

³⁵ See, e.g., CLARENDON PRESS, HANDBOOK OF LOGIC IN ARTIFICIAL INTELLIGENCE AND LOGIC PROGRAMMING 308–09 (Dov M. Gabbay et al. eds., 1998) (identifying that AI from decades ago were already using computationally-complex forms of formal logic—more advanced than Boolean—including non-monotonic forms like autoepistemic logic); see also Nadia Creignou et al., *The Complexity of Reasoning for Fragments of Autoepistemic Logic*, 13 ACM TRANSACTIONS ON COMPUTATIONAL LOGIC 1, 2 (2012) (describing how the complexity of three particular decision problems in autoepistemic logic must be bounded by “available Boolean connectives” to express these problems in Boolean terms); MARION BLONDEEL ET AL., FUZZY AUTOEPISTEMIC LOGIC: REFLECTING ABOUT KNOWLEDGE OF TRUTH DEGREES 2, 10 (2011) (discussing how autoepistemic properties can be generalized to the possibility theory of fuzzy-logic values, which are infinitely more complex than the probability theory undergirding binary booleans). For an elaboration on the distinction between possibility theory and probability theory, see Boris Kovalerchuk, *Relationships Between Probability and Possibility Theories*, 683 UNCERTAINTY MODELING, STUDIES IN COMPUTATIONAL INTELLIGENCE 97–122 (2017). But see Adnan Darwiche & Pierre Marquis, *On Quantifying Literals in Boolean Logic and its Applications to Explainable AI*, 72 J. A.I. RSCH. 285–86 (discussing how Boolean logic has been expanded upon in AI research and development to permit AI to analyze contradictory information and, thus, intelligently navigated highly-complex data).

achieved unanticipated levels of sophistication³⁶ and autonomy which elevate them over standard computers³⁷ and minimize the need for human input.³⁸

Relatedly, individual AI can be distinguished not only from standard computers, but also from other AI programs.³⁹ Various types of AI can be contrasted based on the proportion of a task that the program can complete without human guidance.⁴⁰ Thus, two broad categories emerge: fully-autonomous AI and assisting-tool AI.⁴¹

An AI is an assisting tool when it merely helps a human accomplish a goal by automating certain tasks.⁴² AI assisting tools are popular with the general public as best practices for efficiently accomplishing a diverse array of tasks.⁴³ As useful as they are, AI assisting tools are generally considered mere tools that facilitate human creations—not as authors that are chiefly responsible for a creation.⁴⁴ The merely

³⁶ See Totschnig, *supra* note 1; see also Devin Coldewey, *Google's WaveNet Uses Neural Nets to Generate Eerily Convincing Speech and Music*, TECH CRUNCH (Sept. 9, 2016, 4:27 PM), <https://techcrunch.com/2016/09/09/googles-wavenet-uses-neural-nets-to-generate-eerily-convincing-speech-and-music/>.

³⁷ See sources cited *supra* notes 29–34.

³⁸ See Totschnig, *supra* note 1, at 2473–74.

³⁹ See Hristov, *supra* note 24, at 435–36.

⁴⁰ Totschnig, *supra* note 1; cf. Lance Eliot, *AI & Law: Chess-Like State-Space Complexity*, MEDIUM (Feb. 16, 2021), <https://lance-eliot.medium.com/ai-law-chess-like-state-space-complexity-3795f2074278> (theorizing an alternative approach to discussing AI sophistication through state-space complexity and speculating that AI technology can advance enough to win at highly state-space complex, multi-ply games like lawyering and “potentially take on the role of a lawyer, a judge, and other legal professionals, *operating without the need for any human assistance*”) (emphasis added).

⁴¹ See Hristov, *supra* note 24, at 433–36. See generally Orlin Kouzov, *The New Paradigms in Education and Support of Critical Thinking with Artificial Intelligence (AI) Tools*, 13 SERDICA J. COMPUTING 27, 34 (2019); David Sanders & Alexander Gegov, *AI Tools for Use in Assembly Automation and Some Examples of Recent Applications*, 33 ASSEMBLY AUTOMATION 184 (2013) (discussing the use of AI assisting tools in different assembly processes); Chien-Ho Ko & Min-Yuan Cheng, *Hybrid Use of AI Techniques in Developing Construction Management Tools*, 12 AUTOMATION IN CONSTRUCTION 271 (2003) (discussing use of AI assisting tools in different construction processes).

⁴² See generally David Campbell, *The 13 Best AI Sales Assistant Tools for 2022*, RIGHT INBOX (Jul. 15, 2021), <https://www.rightinbox.com/blog/best-ai-sales-assistant-tools>.

⁴³ *Id.* (ranking AI sales-assistant tools that users find most useful in the usual course of their business); see also Haouari Nouredin, *The Top 5 AI Writing Assistant Tools to Help You Write Faster and Better*, MEDIUM (Feb. 16, 2022), <https://medium.com/@haouarin/the-top-5-ai-writing-assistant-tools-to-help-you-write-faster-and-better-ba471193e85d> (ranking AI writing-assistant tools for quicker and more compelling writing).

⁴⁴ See sources cited *supra* notes 39–41. *But cf.* *Torah Soft Ltd. v. Drosnin*, 136 F. Supp. 2d 276, 283 (S.D. N.Y. 2001) (holding that humans inputting keywords for an otherwise automated search is too little human-intellectual labor to constitute human authorship because the automated search program provided the “lion’s share” of the creative labor); *but see* *Rearden LLC v. Walt Disney Co.*, 293 F. Supp. 3d 963, 971 (N.D. Cal. 2018) (holding that face-tracking

facilitative nature of AI assisting tools prompted the Board to distinguish them from the fully-autonomous AI at issue when refusing the *Creativity Machine*'s copyright application.⁴⁵ In contrast to AI assisting tools, a fully-autonomous AI performs tasks without any human input.⁴⁶ Because of the *Creativity Machine*'s fully-autonomous nature, the Board found the fully-autonomous AI ineligible to apply for copyright protections under the Act for lack of a human author.⁴⁷

B. *Copyright Protection is Valuable to Authors and to Society*

Although the Board recently appended a “human authorship” requirement to copyrightability,⁴⁸ the Act itself simply states that a work is protectable if it satisfies the standard of “original works of authorship fixed in any tangible medium of expression”⁴⁹ If the Office finds that a copyright applicant satisfies these requirements, the applicant should become the copyright's owner or author.⁵⁰ The

technology that requires human actors to provide facial performances to create images for motion pictures does constitute human authorship for the actors, so ownership is retained by the motion picture studio—not the technology's programmer—because his program did not provide the “lion's share” of the creative labor).

⁴⁵ Board Refusal of Second Request, *supra* note 5, at 3 n.3 (noting in dictum that an AI that was “merely . . . an assisting instrument” was not at issue before the Board (quoting U.S. COPYRIGHT OFFICE, SIXTY-EIGHTH ANNUAL REPORT OF THE REGISTER OF COPYRIGHTS FOR THE FISCAL YEAR ENDING JUNE 30, 1965, at 5 (1966))).

⁴⁶ *See, e.g.*, Board Refusal of Second Request, *supra* note 5; ‘666 Patent & ‘388 Patent, *supra* note 4.

⁴⁷ Board Refusal of Second Request, *supra* note 5.

⁴⁸ *Id.*

⁴⁹ 17 U.S.C. § 102(a); *see also* Feist Publications, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991) (holding that a modicum of originality and creativity is also required for copyright protection). *But see* H.R. REP. NO. 94-1476, at 52 (1976) (intending that an unfixed work of authorship, such as an improvisation or unrecorded choreographic work, is subject to protection under State common law or statute but would not be eligible for federal protection under Section 102 of the Copyright Act).

⁵⁰ 17 U.S.C. § 201(a) (establishing ownership as “[c]opyright in a work protected under this title vests initially in the author or authors of the work. The authors of a joint work are co-owners of copyright in the work”); *see also id.* § 201(b) (providing for the “works made for hire” exception to ownership as “[i]n the case of a work made for hire, the employer or other person for whom the work was prepared is considered the author for purposes of this title, and, unless the parties have expressly agreed otherwise in a written instrument signed by them, owns all of the rights comprised in the copyright”); *accord* Hristov, *supra* note 24, at 445–47 (arguing that AI-creators of copyrightable works should be considered authors under the works made for hire doctrine); *see also* Bridy, *supra* note 24, at 16. *Contra* Felieu, *supra* note 26, at 126 (arguing that AI authorship under the works-made-for-hire doctrine is incompatible with the human authorship requirement). *Cf., e.g.*, Nadia Banteka, *Artificially Intelligent Persons*, 58 HOUS. L. REV. 537, 594–96 (arguing that expanding legal personhood to include AI would result in legal uncertainty due to caselaw coming to different conclusions under seemingly similar fact-patterns, but does not discuss copyright authorship, where caselaw has only addressed human authorship in dicta and has not produced conflicting holdings); *see also Resolution of the European Parliament with Recommendations to the Commission on Civil Law Rules on*

Act's plain language is purposefully open-ended because Congress's intent was to continue copyright law's historical roots, spanning back to Renaissance Venice,⁵¹ of protecting a creator's works and benefitting the public good.⁵²

Further, copyright owners and authors⁵³ enjoy the following exclusive rights⁵⁴: reproduction,⁵⁵ derivative works,⁵⁶ distribution,⁵⁷ performance and displays,⁵⁸

Robotics, EUR. PARL. RESOL. 250 (2017) (recommending a new class of legal entity called “electronic personality” which would expand legal rights and liabilities to “the most sophisticated autonomous robots”).

⁵¹ Ted Sichelman & Sean O'Connor, *Patents as Promoters of Competition: The Guild Origins of Patent Law in the Venetian Republic*, 49 SAN DIEGO L. REV. 1267, 1268 (2012).

⁵² See *infra* Part VI.

⁵³ Owners and authors are sometimes importantly distinguished. For instance, the author is sometimes understood as the creator, or “originator,” and retains ownership rights unless the work was made for hire, wherein the employer could be considered the “author,” but not necessarily the one who “owns all of the rights comprised in the copyright” if “the parties have expressly agreed . . . in a written instrument.” 17 U.S.C. §§ 101, 201(a)–(b). Thus, certain models of copyright recognize an author/owner distinction; see also *Cnty. for Creative Non-Violence v. Reid*, 490 U.S. 730, 737 (1989) (interpreting the Copyright Act as establishing “a general rule, [that] the author is the party who actually creates the work, that is, the *person* [not “human”] who *translates an idea* [e.g., processes data through an AI’s programmed logic] into a fixed, tangible expression entitled to copyright protection”) (emphasis added). *But see* Hristov, *supra* note 24, at 442 (arguing that a “relative interpretation” of ‘employee’ and ‘employer’ is appropriate for situations of AI authorship and that the agency-law definitions of the aforementioned terms are not governing); Elaine D. Ziff, *The ‘Work for Hire’ Doctrine and Start-up Technology Companies*, BUS. L. TODAY, Apr. 2011, at 1 (identifying the judicial trend of expanding the scope of the ‘work for hire’ doctrine for purposes of “promoting the useful arts”); *JustMed, Inc. v. Byce*, 600 F.3d 1118, 1124–25 (9th Cir. 2010) (separating “ownership” from “authorship” in holding “[b]ecause ownership normally vests in the author of a work, [the employer] would have ownership only under the Copyright Act’s work-for-hire doctrine because there was no written agreement as to ownership”), *aff’d*, 580 Fed. Appx. 566 (Or. 2014); *Woods v. Resnick*, 725 F. Supp. 2d 809, 825 (W.D. Wis. 2010) (relying on *JustMed* in reasoning “that the *author* of the source code was *hired* by the corporation” to establish an approach to copyright ownership which separates the “author” from the “owner”) (emphasis added); *id.* at 825 (quoting *Billy-Bob Teeth, Inc. v. Novelty, Inc.*, 329 F.3d 586, 591 (7th Cir. 2003) (“[C]orporation could not establish *ownership* under work-for-hire theory because it did not exist when *author* created work.”) (emphasis added)).

⁵⁴ 17 U.S.C. § 106.

⁵⁵ *Id.* § 106(1).

⁵⁶ *Id.* § 103(a)–(b) (defining this protection as “extend[ing] only to the material contributed by the author of such work, as distinguished from the preexisting material employed in the work, and does not imply any exclusive right in the preexisting material”); see also H.R. REP. NO. 94-1476, at 4 (1976); 17 U.S.C. § 106(2).

⁵⁷ 17 U.S.C. § 106(3).

⁵⁸ *Id.* § 106(4)–(6); see also *id.* § 109(c).

anticircumvention,⁵⁹ and moral rights.⁶⁰ Once an author satisfies the copyrightability requirements, it already owns the copyright and may even mark its work with the “©” notice symbol.⁶¹ Nevertheless, registering a copyright provides further benefits.⁶² Namely, only registrants may file suit if their copyrights are infringed.⁶³ This vulnerability is deeply disturbing to unregistered-copyright holders who diligently programmed or fairly paid for a fully-autonomous AI—or created a valuable work with that AI—but are still defenseless upon infringement. In tandem with the profitability of AI creations, the projected increase in value, and the sophistication of AI and their creations,⁶⁴ the Board’s decision creates considerable economic uncertainty—disincentivizing innovation within *all* industries.⁶⁵

C. *The Tenuous Bases for the “Human Authorship” Requirement*

The Office’s position is that *human* authorship is required for copyright protection.⁶⁶ But importantly, there is no dispositive precedent for this requirement because only ten copyright cases even mention “human authorship.”⁶⁷ Instead, the Board attempts to establish three bases for human authorship.⁶⁸ First, the Board relies

⁵⁹ *Id.* § 1201(a)(1)(A).

⁶⁰ *Id.* § 106A.

⁶¹ *Copyright in General*, U.S. COPYRIGHT OFF., <https://www.copyright.gov/help/faq/faq-general.html> (last visited Nov. 20, 2023) (noting copyright protection inheres “the moment [a work] is created and fixed in a tangible form that it is perceptible either directly or with the aid of a machine or device”).

⁶² *Id.* Interestingly, approaching property rights as a claim against another’s invasion of one’s property has ancient roots that predate the legal concept of property ownership. *See The Code of Hammurabi*, THE AVALON PROJECT (2008), <https://avalon.law.yale.edu/ancient/hamframe.asp> (punishing the theft of another’s livestock but not granting “ownership” of the same livestock to the aggrieved party).

⁶³ *Copyright in General*, *supra* note 61; *see also* U.S. COPYRIGHT OFF., COPYRIGHT BASICS 5 (2021).

⁶⁴ Howarth, *supra* note 14; *see also* Reed, *supra* note 32.

⁶⁵ *See* Samantha Fink Hedrick, *I “Think,” Therefore I Create: Claiming Copyright in the Outputs of Algorithms*, 8 J. OF INTELL. PROP. & ENT. L. 324, 350 (2019).

⁶⁶ *See* sources cited *supra* notes 8–9.

⁶⁷ *See* cases cited *supra* note 23.

⁶⁸ Arguably, the Board has a fourth base: statutory interpretation. However, this Note does not treat the same as its own base because the Board’s statutory-interpretation arguments are addressed within the caselaw—and Compendium—commentary throughout the three above-enumerated bases. Further, the Board’s narrow interpretations of the Copyright Act’s language directly clash with Congress’s intent for the phrase “original works of authorship” to be interpreted “very broadly.” H.R. REP. NO. 94-1476, at 51–52 (1976); *see also* Eldred v. Ashcroft, 537 U.S. 186, 212 (2003); U.S. CONST. art. I, § 8.

on dicta from old copyright cases.⁶⁹ Second, it analogizes AI-authorship to cases involving non-human authors that were held to be ineligible for copyright protection.⁷⁰ Third, it justifies its Compendium's⁷¹ reliance on the outdated CONTU to establish the "human authorship" requirement.⁷² But as discussed throughout this Note, each of these bases is specious.⁷³

First, dicta from old cases addressed subject matters entirely unrelated to human authorship, and sometimes entirely unrelated to the concept of authorship.⁷⁴ Even later cases that are claimed to establish a "human authorship" requirement do not analyze the creator's humanity.⁷⁵ Much like the seminal copyright cases that the Board misinterprets,⁷⁶ these later cases emphasized an author's *intellectual labor*.⁷⁷ Accordingly, copyright law's development has not been antithetical to authorship for fully-autonomous AI.⁷⁸ When later cases cite the Board's "human authorship"

⁶⁹ See Board Refusal of Second Request, *supra* note 5; *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 58 (1884); *In re Trade-Mark Cases*, 100 U.S. 82, 94 (1879); *Goldstein v. California*, 412 U.S. 546, 561 (1973).

⁷⁰ See Board Refusal of Second Request, *supra* note 5; *Urantia Found. v. Maaherra*, 114 F.3d 955, 958 (9th Cir. 1997); *Naruto v. Slater*, 888 F.3d 418, 426 (9th Cir. 2018); *Kelley v. Chi. Park Dist.*, 635 F.3d 290, 304 (7th Cir. 2011); *Satava v. Lowry*, 323 F.3d 805, 812 (9th Cir. 2003).

⁷¹ See sources cited *supra* note 9.

⁷² See sources cited *supra* note 10.

⁷³ See generally *infra* Parts III–V.

⁷⁴ See, e.g., *Burrow-Giles Lithographic Co.*, 111 U.S. at 58; see also *In re Trade-Mark Cases*, 100 U.S. at 94.

⁷⁵ *Alfred Bell & Co. v. Catalda Fine Arts, Inc.*, 191 F.2d 99, 103 (2d Cir. 1951) (citation omitted) (finding that an author is the one who "contributed something more than a 'merely trivial' variation, something recognizably 'his own'"); see also *L. Batlin & Sons, Inc. v. Snyder*, 536 F.2d 486, 487–88 (2d Cir. 1976) (quoting *Alfred Bell & Co.*, 191 F.2d at 103); *Dorsey v. Old Surety Life Ins. Co.*, 98 F.2d 872, 873 (10th Cir. 1938) ("[T]o be copyrightable a work must be original in that the author has created it by his own skill, labor, and judgment.").

⁷⁶ See generally *infra* Part IV.

⁷⁷ See cases cited *supra* note 74.

⁷⁸ Legal scholars might categorize this emphasis on labor and propertization when analyzing authorship as typical of the romantic-authorship theory of copyright. See ERLEND LAVIK ET AL., *THE WORK OF AUTHORSHIP* 45–47 (Mireille van Eechoud ed., 2014); accord Mark A. Lemley, *Romantic Authorship and the Rhetoric of Property*, 75 TEX. L. REV. 873, 902–03 (1997) (critiquing a legal trend towards the "propertization" of all valuable information—particularly within intellectual-property law); see also Keith Aoki, (*Intellectual*) *Property and Sovereignty: Notes Toward a Cultural Geography of Authorship*, 48 STAN. L. REV. 1293, 1333–38 (1996). See generally Lionel Bently, *Copyright and the Death of the Author in Literature and Law*, 57 MODERN L. REV. 973 (1994); James Boyle, *A Theory of Law and Information: Copyright, Spleens, Blackmail, and Insider Trading*, 80 CAL. L. REV. 1413 (1992).

precedent for copyright authorship,⁷⁹ they not only reaffirm the intellectual-labor standard, but they also emphasize the AI-inclusive “original authorship” standard.⁸⁰

Second, the non-human-authorship caselaw similarly disfavors “human authorship.”⁸¹ This Note will analyze key cases involving animals,⁸² natural-occurrences,⁸³ and supernatural-beings⁸⁴ that were cited by the Board as bases for a “human authorship” requirement⁸⁵ and demonstrate that those cases are distinguishable in their substantive and procedural facts to cases where copyrightable works are authored by fully-autonomous AI.⁸⁶ For instance, examples such as *Naruto v. Slater*⁸⁷ and the Compendium’s “mural painted by an elephant”⁸⁸ have been used to demonstrate that non-humans may not enforce copyrights and, thus, may not register for the same.⁸⁹ However, merely being incompetent to file suit does not bar other legal entities from enjoying legal rights, as is the case for power of attorney, next friend, and guardian ad litem arrangements.⁹⁰

⁷⁹ See cases cited *supra* note 75.

⁸⁰ See, e.g., *Mazer v. Stein*, 347 U.S. 201, 214 (1954) (interpreting the Copyright Act of 1909 to intend that “‘works of art’ and ‘reproductions of works of art’ . . . must be original, that is, the author’s tangible expression of his ideas” (citing *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 59–60 (1884))); see also *Goldstein v. California*, 412 U.S. 546, 561 (1973) (“The States granted to Congress the power to protect the ‘Writings’ of ‘Authors.’ These terms have not been construed in their narrow literal sense but, rather, with the reach necessary to reflect the broad scope of constitutional principles. While an ‘author’ may be viewed as an individual who writes an original composition, the term, in its constitutional sense, has been construed to mean an ‘originator,’ ‘he to whom anything owes its origin.’” (quoting *Burrow-Giles Lithographic Co.*, 111 U.S. at 58)).

⁸¹ See generally *infra* Part IV.

⁸² See generally *infra* Part IV.A.

⁸³ See generally *infra* Part IV.B.

⁸⁴ See generally *infra* Part IV.C.

⁸⁵ Board Refusal of Second Request, *supra* note 5, at 4–6.

⁸⁶ See *infra* Part IV.

⁸⁷ *Naruto v. Slater*, 888 F.3d 418, 420 (9th Cir. 2018); Board Refusal of Second Request, *supra* note 5, at 5.

⁸⁸ COMPENDIUM, *supra* note 9, at § 313.2.

⁸⁹ See sources cited *supra* notes 87–88.

⁹⁰ See FED. R. CIV. P. 17(c); see also *Power of Attorney*, AM. BAR ASS’N, https://www.americanbar.org/groups/real_property_trust_estate/resources/estate_planning/power_of_attorney/ (last visited Nov. 6, 2023). *Contra* *Cetacean Cmty v. Bush*, 386 F.3d 1169, 1171, 1173–74 (9th Cir. 2004) (holding that animals are not entitled to file suit unless a statute plainly states a contrary intention).

Also, natural-occurrence cases⁹¹ have generally held that copyright applicants are not entitled to copyrights—for lack of originality—when nature *alone* fixed an expressive work in a tangible medium.⁹² However, these courts' rationales for withholding copyrightability in such cases is in accord with the intellectual-labor standard that this Note proposes⁹³—as well as seminal caselaw.⁹⁴ There is neither intellectual labor nor originality when a human merely claims copyright over a natural-occurrence.⁹⁵ But works produced by fully-autonomous AI do involve intellectual labor and originality—like *A Recent Entrance to Paradise*.⁹⁶

Regarding supernatural-being cases,⁹⁷ ownership rests with “the first human being who compiled, selected, coordinated, and arranged” a work.⁹⁸ A Holy Book⁹⁹ will be discussed to further explore this rule and support AI authorship because fully-autonomous AI “compile[], select[], coordinate[], and arrange[]” their creations.¹⁰⁰ In the related psychography¹⁰¹ cases, courts apply the same standard of granting copyrights to the first human to transcribe messages allegedly coming from spirits—

⁹¹ Natural-occurrence cases are those that discuss whether something that owes much of its appearance to natural forces is worthy of copyright protection. *See, e.g.,* Kelley v. Chi. Park Dist., 635 F.3d 290, 304 (7th Cir. 2011).

⁹² *See id.*; *see also* Satava v. Lowry, 323 F.3d 805, 812 (9th Cir. 2003).

⁹³ *See supra* Part III.

⁹⁴ *See infra* Part IV.B.

⁹⁵ *See infra* Part IV.B.

⁹⁶ *See* Adi Robertson, *The US Copyright Office Says an AI Can't Copyright its Art*, THE VERGE (Feb. 21, 2012, 11:54 AM), <https://www.theverge.com/2022/2/21/22944335/us-copyright-office-reject-ai-generated-art-recent-entrance-to-paradise> (paraphrasing Dr. Stephen Thaler's description of the *Creativity Machine's* intellectual labor as “simulat[ing] a near-death experience” in which an algorithm *reprocesses* pictures to *create* hallucinatory images and a fictional narrative about the afterlife); *see also* Sam Moghadam, *Trouble in Paradise: The Copyright Office Says Artificial Intelligence Cannot Author Art*, THE COLUM. J. OF L. & THE ARTS: JLA BEAT (Mar. 30, 2022), <https://journals.library.columbia.edu/index.php/lawandarts/announcement/view/514>.

⁹⁷ Supernatural-being cases are those that discuss whether work claimed to embody the words of celestial beings rather than human beings qualifies for copyright protection. *See, e.g.,* Urantia Found. v. Maaherra, 114 F.3d 955, 958 (9th Cir. 1997).

⁹⁸ *Id.*

⁹⁹ *See generally id.*

¹⁰⁰ *Id.* at 958; *see also* *Support Vector Machine Algorithm*, JAVA T POINT, <https://www.javatpoint.com/machine-learning-support-vector-machine-algorithm> (last visited Nov. 6, 2023).

¹⁰¹ “Psychography” means “automatic writing used for spiritualistic purposes.” *Psychography*, MERRIAM-WEBSTER.COM, <https://www.merriam-webster.com/dictionary/psychography> (last visited Nov. 6, 2023).

without determining whether the works really are of spiritual origin.¹⁰² Thus, copyright law precedent acknowledges that a non-human may have authored a work, while still granting legal protections to a human.¹⁰³

And third, CONTU's discussion on computer-assisted creations is equally disanalogous to fully-autonomous AI.¹⁰⁴ The CONTU is a 1970s technological commission that released a report concluding that merely using a computer to create a copyrightable work does not bar a human from claiming authorship over that work.¹⁰⁵ Further, the report did not even contemplate fully-autonomous AI.¹⁰⁶ In fact, this report does not contemplate works produced by fully-autonomous technology at all, but rather, by technology serving as *assisting tools*.¹⁰⁷ Thus, while CONTU was informative and persuasive during the advent of assistive technology,¹⁰⁸ it is now completely outdated due to the genesis of fully-autonomous AI and the general advancement of technology.¹⁰⁹ So, its insights should not be relied upon when determining copyrightability in human/AI scenarios.¹¹⁰

¹⁰² See *Penguin Books U.S.A., Inc. v. New Christian Church of Full Endeavor, Ltd.*, 262 F. Supp. 2d 251 (S.D.N.Y. 2003); see also *Cummins v. Bond*, 1 Ch. 167 (U.K. 1927).

¹⁰³ See cases cited *supra* note 102.

¹⁰⁴ See Nina I. Brown, *Artificial Authors: A Case for Copyright in Computer-Generated Works*, 20 COLUM. SCI. & TECH. L. REV. 1, 29 (2018) (discussing how “autonomously creative AI was not foreseeable”).

¹⁰⁵ NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS, FINAL REPORT: JULY 31, 1978, at 1 (1978); National Commission on New Technological Uses of Copyrighted Works, *supra* note 10; see also sources cited *supra* note 38.

¹⁰⁶ See generally Timothy Butler, *Can a Computer Be an Author—Copyright Aspects of Artificial Intelligence*, 4 HASTINGS COMM'NS & ENT. L.J. 707 (1982).

¹⁰⁷ NATIONAL COMMISSION, *supra* note 105, at 44.

¹⁰⁸ *Personal Computer*, ENCYCLOPEDIA BRITANNICA, <https://www.britannica.com/technology/personal-computer> (last visited Nov. 6, 2023) (“Computers small and inexpensive enough to be purchased by individuals for use in their homes first became feasible in the 1970s, when large-scale integration made it possible to construct a sufficiently powerful microprocessor on a single semiconductor chip The personal computer industry truly began in 1977, with the introduction of three preassembled mass-produced personal computers: the Apple Computer, Inc. (now Apple Inc.), Apple II, the Tandy Radio Shack TRS-80, and the Commodore Business Machines Personal Electronic Transactor (PET).”).

¹⁰⁹ Cf. Meg Oakley et al., *Modern Interlibrary Loan Practices: Moving Beyond the CONTU Guidelines*, ASS'N OF RSCH. LIBRS. (Aug. 31, 2020) <https://www.arl.org/wp-content/uploads/2020/08/2020.08.31-modern-interlibrary-loan-practices-moving-beyond-the-CONTU-guidelines.pdf> (discussing how CONTU's outdated limitations for how many articles a library may borrow from scholarly journals need to be reconsidered in consideration of advancements in modern technology); see also Hristov, *supra* note 24, at 437.

¹¹⁰ See *Cambria Co. LLC v. Pental Granite & Marble, Inc.*, No. CV 12-228, 2013 WL 12147608, at *2 (D. Minn. Oct. 17, 2013); *Syngy, Inc. v. ZS Assocs., Inc.*, No. 07-3536, 2015 WL 899408, at *88 (E.D. Pa. Mar. 3, 2015); *Digital Commc'ns Assocs., Inc. v. Softklone*

Moreover, intellectual-property law has a long history—dating back to antiquity.¹¹¹ Throughout this long history, different countries¹¹² have incentivized the creation of works and inventions that benefit the public good by protecting the rights of creators.¹¹³ Throughout history, protections for intellectual property generally involved some sort of exclusivity to prevent others from benefitting off of the creator's product.¹¹⁴

The two factors of rewarding creators that benefit the public are also seen throughout copyright law's development.¹¹⁵ Additionally, copyright law's history is younger than patent law's history.¹¹⁶ Copyright law protections began alongside the invention of the printing press—meaning they emerged to protect the creations of humans who utilized technology to produce their works.¹¹⁷

Because of this parallel development with technology, American copyright law has emphasized broad protections for works that generally benefit the public good, as seen in *The Federalist Debate*,¹¹⁸ the Intellectual-Property Clause of the United States Constitution,¹¹⁹ and the Act's legislative history.¹²⁰ The Supreme Court of the United States has even acknowledged these broad purposes in its holdings—unlike the dicta

Distrib. Corp., 659 F. Supp. 449, 463 (N.D. Ga. 1987); *Stebbins v. Rebolo*, No. 22-CV-00546-JSW, 2022 WL 2668372, at *2 (N.D. Cal. July 11, 2022); *Stebbins v. Polano*, No. 21-CV-04184-JSW, 2022 WL 2668371, at *4 (N.D. Cal. July 11, 2022). *See generally* Jacobs, *supra* note 2, at 352. Bob Loudon, *The Last One, a Program Generator from D.J. 'AI'*, INFOWORLD, Jan. 18, 1982, at 18 (both discussing AI as code generators, a class of computer programmers responsible for the development of a coded program and, thus, serving as the program's programmer and, consequently, the creation's author); Lauriere, *supra* note 2, at 123. *But see* Hashiguchi, *supra* note 29 at 3, 24, 26.

¹¹¹ *See* 1 PETER S. MENELL ET AL., INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE: 2022 PERSPECTIVES, TRADE SECRETS AND PATENTS 44 (2022).

¹¹² OPEN BOOK PUBLISHERS, PRIVILEGE AND PROPERTY: ESSAYS ON THE HISTORY OF COPYRIGHT 23, 53, 81 (Ronan Deazley et al. eds., 2010); *see, e.g., Comparing UK and US copyright protection*, LAC GROUP (Oct. 18, 2018), <https://lac-group.com/blog/comparing-uk-and-us-copyright-protection/>.

¹¹³ *History and Sources of Intellectual Property Law*, L. SHELF EDUC. MEDIA, <https://lawshelf.com/coursewarecontentview/history-and-sources-of-intellectual-property-law> (last visited Nov. 6, 2023).

¹¹⁴ *Id.*

¹¹⁵ *See infra* Part VI.

¹¹⁶ *Compare* 1 MENELL ET AL., *supra* note 111, at 44, *with* 2 PETER S. MENELL ET AL., INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE: 2022 COPYRIGHTS, TRADEMARKS AND STATE IP PROTECTIONS 520 (2022).

¹¹⁷ *See* 2 MENELL ET AL., *supra* note 116, at 519–20.

¹¹⁸ *See, e.g.,* THE FEDERALIST NO. 43 (James Madison).

¹¹⁹ U.S. CONST. art. I, § 8, cl. 8.

¹²⁰ H.R. REP. NO. 94-1476, at 51–52 (1976).

that the Board incorrectly claims establishes a “human authorship” requirement.¹²¹ So, not only was the Board’s legal analysis faulty in imposing a “human authorship” requirement, but so too was its historical analysis.¹²²

III. “HUMAN AUTHORSHIP” IS ACTUALLY “INTELLECTUAL LABOR”

A. *Human Authorship “Precedent” is About Intellectual Labor*

As previously noted, “human authorship” rarely arises in copyright cases.¹²³ Because of this dearth,¹²⁴ proponents of the “human authorship” standard have relied on cases with tenuous ties—if any—to the “human authorship” concept.¹²⁵

This misattribution to “human authorship” begins with one of the oldest cases claimed by the Office as precedent for this standard: *Burrow-Giles Lithographic Co. v. Sarony*.¹²⁶ Here, the Court was not contemplating the humanity of an author.¹²⁷ In fact, the phrase “human authorship” never appears in the Court’s opinion.¹²⁸ Instead, the Court considered whether a photograph was sufficiently original to constitute a copyrightable work.¹²⁹ Regarding original works, the Court scrutinized the author’s “intellectual labor,” intending to distinguish copyrightable works from works that merely reflect “the physical features or outlines of some object animate or inanimate, and involves no originality of thought or any novelty in the intellectual operation connected with its visible reproduction in shape of a picture.”¹³⁰

Notably, this “intellectual labor” standard easily embraces fully-autonomous AI.¹³¹ Works produced by fully-autonomous AI are not mere reflections of their input

¹²¹ See, e.g., *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 558 (1985); *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975).

¹²² See generally Board Refusal of Second Request, *supra* note 5.

¹²³ See, e.g., cases cited *supra* note 23.

¹²⁴ See cases cited *supra* note 23.

¹²⁵ See generally Board Refusal of Second Request, *supra* note 5.

¹²⁶ COMPENDIUM, *supra* note 9, at § 306 (“Because copyright law is limited to ‘original intellectual conceptions of the author,’ the Office will refuse to register a claim if it determines that a human being did not create the work.” (quoting *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 58 (1884))).

¹²⁷ See *Burrow-Giles Lithographic Co.*, 111 U.S. at 58; Gia Jung, *Do Androids Dream of Copyright? Examining AI Copyright Ownership*, 35 BERKELEY TECH. L.J. 1151, 1159 (2020).

¹²⁸ See generally *Burrow-Giles Lithographic Co.*, 111 U.S. 53.

¹²⁹ *Id.*

¹³⁰ *Id.* at 59.

¹³¹ *Id.* at 59–60; see also STUART RUSSELL & PAUL NORVIG, *ARTIFICIAL INTELLIGENCE: A MODERN APPROACH* 3–4 (3d ed. 2009) (discussing how AI “input-output behavior” resembles that of a human and, further, that AI can make “inferences” from input data).

data.¹³² Compared to the minimal intellectual labor involved in a mechanistic production, like merely editing a preexisting sound recording,¹³³ an elaborate and intellectual work like a full album produced by a fully-autonomous AI easily satisfies intellectual labor.¹³⁴ So, the intellectual labor standard laid out by the *Burrow-Giles Lithographic Co.* Court permits authorship by fully-autonomous AI.¹³⁵

When determining the authorship element, the Court defined it as “he to whom anything owes its origin; originator; maker; one who completes a work of science or literature.”¹³⁶ While words like “man” were used in the Court’s opinion, it was linked to words like “genius or intellect.”¹³⁷ Essentially, “man” was not being used to suggest humanity, but as a colloquialism to present the concept of intellect.¹³⁸ Thus, when analyzing copyrightable authorship, the Court in *Burrow-Giles Lithographic Co.* provided an expansive definition for an “author,” and assessed a work’s originality based on the sophistication of the creative procedure, in other words, the author’s intellectual labor.¹³⁹ Because of this open definition for authorship and emphasis on intellect as the dispositive element, the Office’s reliance on *Burrow-Giles Lithographic Co.* fails to show “human authorship” exists and, instead, set precedent which supports AI authorship.¹⁴⁰

Similarly, the *Trade-Mark Cases* support AI authorship while ignoring “human authorship.”¹⁴¹ Just like *Burrow-Giles Lithographic Co.*, the *Trade-Mark Cases* also never mention “human authorship.”¹⁴² In fact, authorship as a general legal element

¹³² RUSSELL & NORVIG, *supra* note 131.

¹³³ See, e.g., COMPENDIUM, *supra* note 9, at § 803.6(B).

¹³⁴ Dom Galeon, *The World’s First Album Composed and Produced by an AI has Been Unveiled*, FUTURISM (Aug. 21, 2017), <https://futurism.com/the-worlds-first-album-composed-and-produced-by-an-ai-has-been-unveiled>.

¹³⁵ See sources cited *supra* note 131.

¹³⁶ *Burrow-Giles Lithographic Co. v. Saroni*, 111 U.S. 53, 58 (1884); see also *Cnty. for Creative Non-Violence v. Reid*, 490 U.S. 730, 737 (1989) (finding that “author” means “person who translates an idea into a fixed, tangible expression”) (emphasis added).

¹³⁷ *Burrow-Giles Lithographic Co.*, 111 U.S. at 58.

¹³⁸ See generally *Burrow-Giles Lithographic Co.*, 111 U.S. 53 (1884). See, e.g., Jason Lloyd, *Let There Be Justice: A Thomistic Assessment of Utilitarianism and Libertarianism*, 8 TEX. REV. L. & POL. 229, 255 (2003) (“As Pascal once observed, all of man’s dignity lies in his ability to reason, for it is the aspect of human nature that defines humanity and distinguishes man from brute animals.”).

¹³⁹ *Burrow-Giles Lithographic Co.*, 111 U.S. at 58.

¹⁴⁰ See generally *Burrow-Giles Lithographic Co.*, 111 U.S. 53 (1884).

¹⁴¹ See *In re Trade-Mark Cases*, 100 U.S. 82 (1879).

¹⁴² See generally *id.*

was not the Court's primary concern here.¹⁴³ The *Trade-Mark Cases* were fundamentally constitutional-law cases,¹⁴⁴ asking whether Congress's power to regulate intellectual property under the Commerce Clause¹⁴⁵ and the Intellectual-Property Clause¹⁴⁶ extends to trademarks.¹⁴⁷

However, while the Supreme Court refused to extend Congress's intellectual-property power to trademarks and did not emphasize authorship, it did establish the intellectual-labor standard.¹⁴⁸ Accordingly, the Court broadly held that Congress's power to protect works of authorship extends "only as such [works] as are original, and are founded in the creative powers of the mind" or are "the fruits of intellectual labor."¹⁴⁹ Importantly, "mind" is never expressly linked to a human origin and the Court uses it in an abstract sense within its opinion.¹⁵⁰ For instance, the Court discusses Congress as having a "legislative mind," suggesting that copyright law thinks of the concept of a "mind" and the resulting "intellect" as an abstraction based on the sophistication of an entity's labor, such as Congress's lawmaking process.¹⁵¹

B. *Current Caselaw Does Not Establish "Human Authorship"*

Moreover, the Office's citations are not the only dead-ends for a "human authorship" requirement.¹⁵² In addition to *Thaler v. Perlmutter*, a search for copyright cases involving "human authorship" yields the following results: (1) *Cambria Co. LLC v. Pental Granite & Marble, Inc.*, (2) *Syngy, Inc. v. ZS Associates, Inc.*, (3) *Digital Commc'ns Assocs., Inc. v. Sofiklone Distribution Corp.*, (4) *Stebbins v. Rebolo*, and (5) *Stebbins v. Polano*.¹⁵³ The first three cases merely mention human authorship as either a minor analysis or in service of laying out a purported legal rule.¹⁵⁴ To the

¹⁴³ *Id.* at 86.

¹⁴⁴ *See id.* at 88, 90.

¹⁴⁵ U.S. CONST. art. I, § 8, cl. 3.

¹⁴⁶ *Id.* cl. 8.

¹⁴⁷ *In re Trade-Mark Cases*, 100 U.S. at 86–87.

¹⁴⁸ *Id.* at 94.

¹⁴⁹ *Id.*

¹⁵⁰ *See generally In re Trade-Mark Cases*, 100 U.S. 82 (1879).

¹⁵¹ *See id.* at 86.

¹⁵² *See infra* Parts III–V (detailing how the Office's citations are weak support for a human authorship requirement and showcasing the dearth of relevant case law discussion on the topic of a "human authorship" requirement).

¹⁵³ *See* cases cited *supra* note 23.

¹⁵⁴ *See Cambria Co. LLC v. Pental Granite & Marble, Inc.*, No. 12–228, 2013 WL 12147608, at *2 (D. Minn. Oct. 17, 2013) (making a conclusory statement that a work's design and manufacturing may be relevant "to the issue of human authorship"); *see also Syngy, Inc. v. ZS Assocs., Inc.*, No. 07–3536, 2015 WL 899408, at *33 (E.D. Pa. Mar. 3, 2015) (noting that computer screens are only copyrightable by humans if some intellectual labor on behalf of the

second use, the *Digital Commc'ns Assocs., Inc.* court attempts to establish a legal rule involving human authorship.¹⁵⁵ However, the humanity of the author was not the core issue in this test, but rather, whether there was intellectual labor involved in the design of a computer status screen.¹⁵⁶

Furthermore, cases (4) and (5) pertain to automated video recordings involving mechanical processes that simply reflect the features of the animate objects subject to the recording.¹⁵⁷ Importantly, humans did not provide intellectual labor to produce these video recordings.¹⁵⁸ Such fact-patterns are analogous to the previously discussed sound recordings examples from the Compendium.¹⁵⁹ Further, they demonstrate how disanalogous such “human authorship” precedent is from a fully-autonomous AI whose intellectual labor does not merely reflect features of objects, but is inspired by subjects and then produces an entire painting.¹⁶⁰

IV. ANIMALS, NATURE, AND GOD ARE NOT AI

A. *Animal Cases Are Distinguishable*

Not only does the Board fail to point to any precedent demonstrating a “human authorship” requirement, but it also fails to draw meaningful analogies to related fact-patterns.¹⁶¹ First, the Board tries to analogize from animal cases that are distinguishable in their substantive and procedural facts to copyrightable work authored by fully-autonomous AI.¹⁶² The principal animal case purported to demonstrate “human authorship” is *Naruto v. Slater*.¹⁶³

human is exerted in designing the screen); *Digit. Commc'ns Assocs., Inc. v. Softklone Distrib. Corp.*, 659 F. Supp. 449, 463 (N.D. Ga. Mar. 31, 1987) (noting that a human can only claim copyright over a status screen if that human contributed intellectual labor in the screen’s design so as to overcome a merely predetermined status screen design).

¹⁵⁵ See *Digit. Commc'ns Assocs., Inc.*, 659 F. Supp. at 463.

¹⁵⁶ *Id.*

¹⁵⁷ *Stebbins v. Rebolo*, No. 22-CV-00546-JSW, 2022 WL 2699982, at *2 (N.D. Cal. Mar. 28, 2023) (pertaining to use of 2D images that were “basic geometric shapes”); see also *Stebbins v. Polano*, No. 21-CV-04184-JSW, 2022 WL 2668371, at *2–3 (N.D. Cal. July 11, 2022) (pertaining to an inadvertent livestream recording).

¹⁵⁸ See sources cited *supra* notes 56, 157.

¹⁵⁹ See COMPENDIUM, *supra* note 9, at § 803.6(B).

¹⁶⁰ See *id.* § 306; see also Board Refusal of Second Request, *supra* note 5.

¹⁶¹ See generally *supra* Part IV.A.

¹⁶² Board Refusal of Second Request, *supra* note 5; see, e.g., *Naruto v. Slater*, 888 F.3d 418, 426 (9th Cir. 2018); see also *Kelley v. Chi. Park Dist.*, 635 F.3d 290, 304 (7th Cir. 2011) (stating “[a]uthorship is an entirely human endeavor”); *Satava v. Lowry*, 323 F.3d 805, 813 (9th Cir. 2003) (explaining that images that exist in nature, such as animals, are not copyrightable).

¹⁶³ *Naruto*, 888 F.3d 418. What makes this case worthy of the “principal” designation is that “[f]ollowing this opinion, the Copyright Office issued a *Revised Circular One*, to reaffirm that an “original work of authorship is a work that is independently created by a *human author*

There, People for the Ethical Treatment of Animals (“PETA”) was harshly reprimanded by the Ninth Circuit when the court held that a monkey could not sue for copyright infringement because it is an animal (i.e., not a human being).¹⁶⁴ The *Naruto* Court also interpreted that the Act exclusively discusses human beings, like “children,” “widow,” “grandchildren,” and “widower,” when discussing entities that may enjoy the property rights in intellectual property.¹⁶⁵ The Board relied on these human-authorship arguments to deny authorship of a complex painting to a fully-autonomous AI.¹⁶⁶

However, there are key differences between the *Naruto* case and fully-autonomous AI. Firstly, whereas *Naruto* was listed as the *owner* of the monkey selfie,¹⁶⁷ the *Creativity Machine* was merely listed as the *author* when the Board denied its copyright registration.¹⁶⁸ Further, while the AI was listed as the author, Dr. Thaler was listed as the owner of the painting at issue.¹⁶⁹ This distinction is integral; if the painting were registered, Dr. Thaler would be the moving party in the case of an infringement, *not* the AI.¹⁷⁰ Similarly, if *A Recent Entrance to Paradise* was found to infringe someone else’s copyright, several legal disputes demonstrate that the human responsible for the AI, here Dr. Thaler, would be sued as the defendant in such infringement actions—not the AI.¹⁷¹ Thus, under a model where a human is listed as

. . . .” Christian E. Mammen & Carrie Richey, *AI and IP: Are Creativity and Inventorship Inherently Human Activities?*, 14 FIU L. REV. 275, 280–81 (2020) (emphasis added); *see also* U.S. COPYRIGHT OFF., *supra* note 63, at 1.

¹⁶⁴ *Naruto*, 888 F.3d at 421.

¹⁶⁵ *Id.* at 426; *see also* 17 U.S.C. § 203(a)(2)(A).

¹⁶⁶ Board Refusal of Second Request, *supra* note 5, at 5.

¹⁶⁷ *Naruto*, 888 F.3d at 424.

¹⁶⁸ Board Refusal of Second Request, *supra* note 5.

¹⁶⁹ *Id.* at 2.

¹⁷⁰ *Fourth Estate Pub. Benefit Corp. v. Wall-Street.com, LLC, et al.*, 139 S. Ct. 881, 889 (2019) (holding that only a registered owner of a copyright may file a lawsuit for infringement of the owner’s copyright); *cf.* Cody Weyhofen, *Scaling the Meta-Mountain: Deep Reinforcement Learning Algorithms and the Computer-Authorship Debate*, 87 UMKC L. REV. 979, 994 (2019) (proposing a Congressional solution under the works made for hire doctrine which would classify deep reinforcement learning algorithm AI as “employees” and vest authorship within their employers upon proper contractual agreements).

¹⁷¹ *Hamilton v. Speight*, 827 F. App’x 238, 238 (3d Cir. 2020) (holding that a plaintiff could sue a video game company for infringement allegedly caused by an AI face-digitization technology under the company’s ownership); Jeanne Hamburg, *Protection for Voice Actors is Artificial in Today’s Artificial Intelligence World*, THE NAT’L L. REV. (June 3, 2022), <https://www.natlawreview.com/article/protection-voice-actors-artificial-today-s-artificial-intelligence-world> (discussing an incident where voice actress Bev Standing sued TikTok for allegedly misappropriated her voice by using AI technology to reproduce it); *Torah Soft Ltd. v. Drosnin*, 136 F. Supp. 2d 276, 278–81 (S.D.N.Y. 2001) (copyright-holder to a computer software sued a human who used automated software to create printouts of secret Biblical messages ascertained by the holder’s software); *Rearden, LLC v. Walt Disney Co.*, 293 F. Supp.

the owner of a copyright while an AI is listed as an author, the *Naruto* holding would not apply and copyright law could incorporate AI authorship.

Additionally, the Court contends that using words like “children” or “widow” within the Act is informative of a “human authorship” requirement.¹⁷² Notably, this statutory interpretation—which allegedly suggests a “human authorship” requirement—is merely dictum in the Court’s rationale for barring a monkey from suing for copyright infringement.¹⁷³

Even if it were not dictum, its analysis is distinguishable from the matter of “human authorship.”¹⁷⁴ Unlike the Board, the *Naruto* Court discussed this portion of the statute with respect to *transferability* of a copyright, not *authorship*.¹⁷⁵ To analogize to personal property, the Board’s argument is as misguided as if a judge applied rules governing estates testamentary intent when at bar is which party holds present interest to a particular chattel.¹⁷⁶

In summary, the listed copyright author in a copyright application is applying for a *present interest* in that work;¹⁷⁷ the prospective author is *not at that time* attempting to transfer ownership to a third-party.¹⁷⁸ Thus, the Board’s reliance on dicta from the

3d 963, 967–68 (N.D. Cal. 2018) (technology company sued movie studios who used another company’s facial-capture AI, which allegedly infringed on the plaintiff’s own facial-capture AI).

¹⁷² *Naruto*, 888 F.3d at 426.

¹⁷³ *Id.* at 421 (holding that a monkey could not sue for copyright infringement because it is an animal, not because it failed to satisfy a human-authorship requirement pertaining to copyright registration).

¹⁷⁴ *See id.* at 425–26.

¹⁷⁵ *Id.* at 426 (“[A]n author’s ‘widow or widower owns the author’s entire termination interest unless there are any surviving children or grandchildren of the author, in which case the widow or widower owns one-half of the author’s interest.’ The terms ‘children,’ ‘grandchildren,’ ‘legitimate,’ ‘widow,’ and ‘widower’ all imply humanity and necessarily exclude animals that do not marry and *do not have heirs entitled to property by law.*”) (emphasis added).

¹⁷⁶ *Hackl v. Comm’r*, 118 T.C. 279, 287–88 (2002), *aff’d*, 335 F.3d 664 (7th Cir. 2003) (interpreting the legislative intent of 26 U.S.C. § 2503 to create a legally-meaningful distinction between present interests and future interests). *Compare* 26 C.F.R. § 25.2503–3(a) (establishing that “[f]uture interest” is a legal term . . . limited to commence in use, possession, or enjoyment at some future date or time”), *with* 26 U.S.C. § 2503(b) (citing 26 C.F.R. § 25.2503–3(b)) (establishing that a present interest is “[a]n unrestricted right to the immediate use, possession, or enjoyment of property or the income from property . . .”). *See also* *Welch v. Paine*, 120 F.2d 141, 143 (1941) (holding that “the contrast between future interests and present interests ‘rests upon the postponement, in the case of a ‘future’ interest of some of the separate rights, powers or privileges which would be forthwith existent if the interests were ‘present.’” (quoting Restatement of Property—Future Interests §§ 153, 166–69 cmt. e (Am. L. Inst. 1936))).

¹⁷⁷ *See generally* 26 U.S.C. § 2503(b).

¹⁷⁸ *Copyright in General*, COPYRIGHT.GOV, <https://www.copyright.gov/help/faq/faq-general.html> (last visited Nov. 6, 2023) (discussing numerous benefits in securing a present interest in one’s copyright through registration with the Copyright Office).

Naruto Court on an irrelevant issue is insufficient to establish a “human authorship requirement.”¹⁷⁹

B. Natural-Occurrence Cases Are Also About Intellectual Labor

Second, the natural-occurrence cases which the Board cites are distinguishable because the works at issue were not produced by intellectual labor.¹⁸⁰

The Board mentions both *Kelley v. Chicago Park District* and *Satava v. Lowry*.¹⁸¹ *Kelley* involved denying a “living garden’s” copyright because “[a]uthorship is an entirely human endeavor” and “a garden owes most of its form and appearance to natural forces.”¹⁸² Again, the Board fails to establish a “human authorship” requirement because it merely recapitulates the intellectual-labor standard.¹⁸³

Finding that a living garden “owes most of its form and appearance to natural forces”¹⁸⁴ is analogous to the *Burrow-Giles Lithographic Co.* Court’s description of a non-intellectual work as merely reflecting “the physical features or outlines of some object animate or inanimate. . . .”¹⁸⁵ By noting this insufficiency for copyrightability, the Board merely reemphasized the longstanding intellectual labor standard while failing to identify a distinct “human authorship.”¹⁸⁶

The purpose of the court quoting treatises¹⁸⁷ that claim “[a]uthorship is an entirely human endeavor” was to create a contrast with the dispositive fact there: that the work

¹⁷⁹ See *Naruto*, 888 F.3d at 421.

¹⁸⁰ See *infra* Part IV.B.

¹⁸¹ Board Refusal of Second Request, *supra* note 5, at 5.

¹⁸² *Kelley v. Chi. Park Dist.*, 635 F.3d 290, 304 (7th Cir. 2011).

¹⁸³ See *id.*

¹⁸⁴ *Id.*

¹⁸⁵ *Burrow-Giles Lithographic Co. v. Saronoy*, 111 U.S. 53, 59 (1884).

¹⁸⁶ Cf. Jane C. Ginsburg & Luke Ali Budiardjo, *Authors and Machines*, 34 BERKELEY TECH. L.J. 343, 364 (2019) (noting that the court “failed to appreciate Kelley’s intervention in studying seed and wind patterns and preparing the soil to accommodate seasonal seed arrivals that would produce particular color patterns,” all considerations that would be indicative of an intellectual-labor standard, not a human authorship one); see also McCutcheon, *Natural Causes: When Author Meets Nature in Copyright Law and Art. Some Observations Inspired by Kelley v. Chicago Park District*, 86 U. CINN. L. REV. 707, 709 (2018) (noting that the court “failed to give sufficient weight to [Kelley’s] selection and arrangement, . . . wrongly allocating to nature the primary responsibility for the material form of the work”); Balganes, *supra* note 24, at 31 (identifying the issue on which this case turned as “control over the creative process,” phrasing which comports with a focus on an intellectual labor standard).

¹⁸⁷ WILLIAM F. PATRY, PATRY ON COPYRIGHT § 3:19 (2023). Compare MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 2.03[B] (2010) (“[U]nless a work is reduced to tangible form it cannot be regarded as a ‘writing’ within the meaning of the constitutional clause authorizing federal copyright legislation. Thus, certain works of *conceptual art* stand outside of copyright protection.”) (emphasis added), with COMPENDIUM, *supra* note 9, § 903.1 (classifying

was entirely naturally produced.¹⁸⁸ And once more, the “human authorship” language in this case was dictum which merely helped the court rationalize its holding that “not all conceptual art may be copyrighted.”¹⁸⁹

Analogously, the *Satava* court denied copyright to a human applicant for two reasons. First, because a jellyfish’s appearance is a natural-occurrence;¹⁹⁰ second, because a human may not limit other artists from depicting jellyfish by claiming copyright over natural-occurrences.¹⁹¹ Regarding the *Creativity Machine*’s painting, similar issues regarding intellectual labor arise because a jellyfish’s appearance is a natural-occurrence—lacking an author’s intellectual labor.¹⁹² Effectively, if a plaintiff copyrights a work that merely depicted a naturally-occurring jellyfish, then any other artist merely depicting a jellyfish would necessarily infringe that plaintiff’s copyright.¹⁹³ Contrastingly, the *Creativity Machine*’s painting involved intellectual labor that made its depiction of a “near-death experience” unique—unlike the plaintiff’s generic-jellyfish depiction in *Satava*.¹⁹⁴ Copyright law’s precedent in denying copyright for naturally-occurring works are therefore based in an intellectual-labor standard which includes fully-autonomous AI works.¹⁹⁵

C. Supernatural-Being Cases Further Support Intellectual Labor

Third, the supernatural-being cases the Board relies on are equally irrelevant to establishing a “human authorship” requirement.¹⁹⁶ The Board cites *Urantia Foundation v. Maaherra* as evidence for copyright law’s restriction of authorship to humans.¹⁹⁷ There, the court held that a celestial being cannot be listed as a copyright

paintings as “Visual Art Works,” a protected form of copyright that the Office considers to be a “writing”).

¹⁸⁸ *Kelley*, 635 F.3d at 304 (“[G]ardens are planted and cultivated, not authored . . . [t]o the extent that seeds or seedlings can be considered a ‘medium of expression,’ they originate in nature, and natural forces—not the intellect of the gardener . . .”).

¹⁸⁹ *Id.*

¹⁹⁰ *Satava v. Lowry*, 323 F.3d 805, 811–12 (9th Cir. 2003).

¹⁹¹ *Id.* at 813.

¹⁹² *Id.* at 811–12.

¹⁹³ *Id.* at 812.

¹⁹⁴ Jeffrey Rubel, *A Recent Entrance to Paradise: Trying to Hand a Copyright to a Machine*, SUBSTACK (Apr. 4, 2022), <https://jeffreyrubel.substack.com/p/a-recent-entrance-to-paradise> (providing art critique which likens *A Recent Entrance to Paradise* to other paintings produced with intellectual labor that might be seen in offices or hotel rooms).

¹⁹⁵ See generally Part IV.B.

¹⁹⁶ See Board Refusal of Second Request, *supra* note 5, at 4–5.

¹⁹⁷ *Id.*; see also *Urantia Found. v. Maaherra*, 114 F.3d 955, 958 (9th Cir. 1997).

author.¹⁹⁸ Copyright protections were instead held to be granted to the “the first human beings who compiled, selected, coordinated, and arranged the Urantia teachings, ‘in such a way that the resulting work as a whole constitutes an original work of authorship.’”¹⁹⁹

But once more, the Board’s cited authority is an unconvincing analog to fully-autonomous AI authors. A fully-autonomous AI producing a creative work—like a painting—involves the AI’s intellectual labor.²⁰⁰ Contrastingly, a Holy Book allegedly received from a celestial being is analogous to a natural occurrence,²⁰¹ like nature’s depiction of a jellyfish,²⁰² or a mechanical process,²⁰³ such as a video recording occurring entirely without human input.²⁰⁴

Also, *Urantia Foundation* provides helpful language for expanding authorship to AI.²⁰⁵ That court concluded that “a work is copyrightable if copyrightability is claimed by the first human beings who *compiled, selected, coordinated, and arranged* the Urantia teachings, ‘in such a way that the resulting work as a whole constitutes an original work of authorship.’”²⁰⁶ Notably, the practice of “compil[ing], select[ing], coordinat[ing], and arrang[ing]”²⁰⁷ data describes how fully-autonomous AI analyze input data.²⁰⁸ Whereas a supernatural being allegedly provided the Urantia teachings to humans in *Urantia Found.*, a human being provides an AI with its source code,²⁰⁹

¹⁹⁸ *Urantia Found.*, 114 F.3d at 958.

¹⁹⁹ *Id.*; see also 17 U.S.C. §§ 101, 103(b); *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991).

²⁰⁰ Feliu, *supra* note 26, at 123–24 (discussing works produced by AI without any creative input from a human).

²⁰¹ See generally Part IV.B.

²⁰² *Satava v. Lowry*, 323 F.3d 805, 813 (9th Cir. 2003).

²⁰³ *Stebbins v. Rebolo*, No. 22-CV-00546-JSW, 2022 WL 2668372, at *3 (N.D. Cal. July 11, 2022).

²⁰⁴ *Stebbins v. Polano*, No. 21-CV-04184-JSW, 2022 WL 2668371, at *4 (N.D. Cal. July 11, 2022).

²⁰⁵ See Ginsburg & Budiardjo, *supra* note 186, at 369–70 (providing a hypothetical where a police officer merely selected photographs from a “full output” rises to authorship, analogous to a fully-autonomous AI selecting data to create a work, like a painting inspired by near-death experiences). *But see* 17 U.S.C. § 103(b) (noting that such a copyright from mere selection would not extend to the underlying data that sourced the author’s selection).

²⁰⁶ *Urantia Found. v. Maaherra*, 114 F.3d 955, 958 (9th Cir. 1997) (emphasis added).

²⁰⁷ *Id.*

²⁰⁸ RUSSELL & NORVIG, *supra* note 131, at 1044–45.

²⁰⁹ *Source Code*, OXFORD REFERENCE, <https://www.oxfordreference.com/search?q=source+code&searchBtn=Search&isQuickSearch=true> (last visited Nov. 6, 2023) (“a text listing of commands to be compiled or assembled into an executable computer program”); see also Lidia Kurasińska & Michal Frąk, *Will Artificial*

making the AI the author who analyzes that data in a copyrightable manner.²¹⁰ Thus, the Board's use of *Urantia Foundation* not only fails to establish a human authorship requirement, but also provides further arguments and analogies as to why fully-autonomous AI should be copyright authors.²¹¹

Next, multiple cases have similarly held that works of spiritual origin require intellectual labor if they are to rise to copyrightability.²¹² In *Penguin Books, U.S.A., Inc. v. New Christian Church of Full Endeavor, Ltd.*, the Court held that a religious course was authored by a human, despite allegations that the human was a mere scribe to the voice of Jesus in her head (i.e., that Jesus provided the intellectual labor), because the court found that claiming the voice belonged to Jesus was a mere belief and the human authored the course pursuant to her own ideas and with her own intellectual labor.²¹³ So, the court did not say that human authorship was required for copyrightability, but merely that non-human authorship was not at issue there because a human was the author—not a spiritual origin of the voice of Jesus.

Moreover, an English chancery in *Cummins v. Bond* concluded that a psychographic writing produced by a departed spirit lacked standing to register for copyright protection.²¹⁴ Although this seemingly weakens the argument for AI authorship, a closer reading reveals that the copyright application's denial was not on authorship grounds, but on a lack of personal jurisdiction because a dead spirit is "domiciled on the other side of the inevitable river."²¹⁵

Ultimately, the Board's many attempts to find analogous caselaw on which to base a human-authorship requirement are all unavailing and, inadvertently, only strengthen the claim that intellectual labor should be the standard for copyright authorship.²¹⁶

Intelligence Replace Software Developers?, STX NEXT, <https://www.stxnext.com/blog/will-artificial-intelligence-replace-developers/> (last visited Nov. 6, 2023) (same but about Microsoft and Cambridge University's DeepCoder). *But see* Jason Henry, *A.I. Can Now Write Its Own Computer Code. That's Good News for Humans*, N.Y. TIMES, <https://www.nytimes.com/2021/09/09/technology/codex-artificial-intelligence-coding.html> (Sep. 10, 2021) (discussing how some AI, like OpenAI's Codex, can write their own object code—but not source code).

²¹⁰ *Urantia Found.*, 659 F.3d at 958.

²¹¹ *See generally id.*

²¹² *Penguin Books U.S.A., Inc. v. New Christian Church of Full Endeavor, Ltd.*, No. 96 CIV. 4126 (RWS), 2000 WL 1028634, at *11 (S.D.N.Y. July 25, 2000); *see also* Balganes, *supra* note 24, at 25 (citing *Cummins v. Bond*, 1 Ch. 173 (U.K. 1927)).

²¹³ *Penguin Books*, 2000 WL 1028634, at *11.

²¹⁴ *Cummins v. Bond*, 1 Ch. 173 (U.K. 1927).

²¹⁵ *Id.*

²¹⁶ *See generally infra* Parts III–V.

V. CONTU IS OUTDATED AND INAPPLICABLE TO FULLY-AUTONOMOUS AI

A. *CONTU is About Assisting Tools, Not Fully-Autonomous AI*

CONTU's lack of future-proofing and foresight make it a similarly shoddy source as the Board's last attempted foundation for the "human authorship" requirement.²¹⁷ The Office's Compendium, as well as the Office's refusal to register the *Creativity Machine's* painting, reference the 1970's technology report and its discussion on outdated computers as grounds for contravening AI authorship.²¹⁸

However, important distinctions arise when comparing computers with fully-autonomous AI under CONTU.²¹⁹ Tellingly, CONTU did not contemplate—let alone mention—the advent of fully-autonomous AI when it was published in the 1970s.²²⁰ CONTU was reporting on computers as *assisting tools* which aid humans in the creation of copyrightable works and concluded that human input was still necessary to create a copyrightable work, even if the computer was assisting.²²¹ When CONTU was published, a computer could run code, but it still required a human to program every step of the creative process.²²²

²¹⁷ See generally Part V.

²¹⁸ Board Refusal of Second Request, *supra* note 5, at 5 (referencing CONTU's discussion on original works created with computers as assisting tools requiring human authorship); see also U.S. COPYRIGHT OFF., *supra* note 9 (generally discussing that computer programs are copyrightable); *id.* § 721.3.

²¹⁹ Robert C. Denicola, *Ex Machina: Copyright Protection for Computer-Generated Works*, 69 RUTGERS U. L. REV. 251, 268–69 (2016) (identifying the 1986 Congressional Office of Technology Assessment as categorizing CONTU as having a "narrow perspective" and further elaborating that "human authorship . . . threatens the protection—and, ultimately, the production—of works that are indistinguishable in merit and value from protected works created by human beings . . ."); see also Brown, *supra* note 104 (asserting that "[m]uch has changed" since CONTU conceded that "computers were simply functioning as *tools to assist* human authors" and, as paraphrased by this source's author, "autonomously creative AI was not foreseeable") (emphasis added); Xiao Wang, *AI Output: A Human Condition That Should Not Be Protected Now, or Maybe Ever*, 20 CHI-KENT J. INTELL. PROP. 136, 138 (2021) (identifying post-CONTU legal scholarship that finds nonhuman authorship to accord with copyright law under the philosophical theories of utilitarianism and instrumentalism). But see Arthur R. Miller, *Copyright Protection for Computer Programs, Databases, and Computer-Generated Works; Is Anything New Since CONTU?*, 106 HARV. L. REV. 977, 1056–57 (1993) (nevertheless conceding that fully-autonomous AI poses more difficult questions regarding authorship than when a work is created by a human with mere assistance from a computer).

²²⁰ Butler, *supra* note 106, at 729 (distinguishing CONTU's admission that the issue of fully-autonomous AI was "too speculative to consider at [the time of the CONTU report]" from the trends towards fully-autonomous AI that were already identifiable 40 years prior to the writing of this Note).

²²¹ See National Commission on New Technological Uses of Copyrighted Works, *supra* note 10, § 201(b)(2); see also Miller, *supra* note 219, at 1056.

²²² See Miller, *supra* note 219, at 1056; Butler, *supra* note 106, at 729.

B. *AI Are Too Advanced For CONTU's Findings*

Moving to today, fully-autonomous AI have effectively become “code generators”²²³ which eliminate the need for a human to write code and, thus, eliminate the need for human input.²²⁴ Unlike works created by a programmer’s intellectual labor of writing code that automates tasks—or the labor of a human who is assisted by a computer—works created by fully-autonomous AI are fully expressed by the AI’s intellectual labor.²²⁵ So, humans are removed from the expression of the work.²²⁶ Thus, such works are authored exclusively by the AI²²⁷ and were not contemplated by CONTU.²²⁸

VI. COPYRIGHT LAW PRIORITIZES CREATORS AND THE PUBLIC GOOD

Lastly, the Board restricting copyright protections to human authors clashes with the historical trends and purposes of intellectual-property rights.²²⁹ Intellectual-property law has long intended to “protect the rights of inventors, artists, and merchants to promote the exchange of ideas and reward creativity.”²³⁰ Because the Board’s decision withholds the “fruits of [a fully-autonomous AI programmer’s] labor”²³¹ and also withholds creations that benefit the “public good,”²³² it directly conflicts with the deeply-rooted functions of intellectual-property law.²³³ Thus, the

²²³ Jacobs, *supra* note 2; *see also* Loudon, *supra* note 2, at 18.

²²⁴ *See* Lauriere, *supra* note 2, at 123.

²²⁵ Butler, *supra* note 106, at 727–28.

²²⁶ *Id.* *But see* sources cited *supra* notes 39–42.

²²⁷ *See* sources cited *supra* notes 39–42.

²²⁸ Brown, *supra* note 104.

²³⁰ Sony Kashyap, *History and Development of Intellectual Property*, 3 INT’L J. EDUC. 193, 193–94 (2021).

²³⁰ *Intellectual Property Rights History: Everything to Know*, UPCOUNSEL, <https://www.upcounsel.com/intellectual-property-rights-history> (last visited Nov. 6, 2023).

²³¹ *In re Trade-Mark Cases*, 100 U.S. 82, 94 (1879).

²³² *See generally* THE FEDERALIST NO. 43 (James Madison) (arguing for “[a] power ‘to promote the progress of science and useful arts, by securing, for a limited time, to authors and inventors, the exclusive right to their respective writings and discoveries.’ The *utility of this power will scarcely be questioned* The right to useful inventions seems with equal reason to belong to the inventors. *The public good fully coincides in both cases with the claims of individuals.*”) (emphasis added).

²³³ A similar analysis that is rooted in the historical function of copyright law and the precedential language of “intellectual production” has been made in a scholarly article about memes in furtherance of expanding copyright protections. That article acknowledged copyright law’s “deep-rooted assumptions of creativity, commercialization, and distribution. These assumptions stem from copyright law’s overarching goal of encouraging the creation and distribution of expressive works deemed to be socially valuable by providing their authors with

authorship requirement should be interpreted broadly and pursuant to the relevant legislative history²³⁴ so owners of fully-autonomous AI are rewarded for the AI's creations.

A. *Copyright Law's History Differs From Other Intellectual Property*

Some sources say “[t]he earliest record of the granting of a patent for a person’s creations is in Sybaris, a Greek state, around 500 BCE. The state granted any citizen a one-year patent for ‘any new refinement in luxury.’”²³⁵ For trade secrets, protecting against the “theft” of one’s intellectual property²³⁶ has been traced back to the Roman Empire.²³⁷

The histories and functions of patent and trade-secret jurisprudence are rooted in the contexts of premodern societies.²³⁸ But a larger proportion of the United States’ history has developed infrastructurally and economically alongside global industrialization.²³⁹ And digitally, the United States’ economy has become increasingly reliant and comprised of information technology and other advanced technology.²⁴⁰

exclusive rights against copying.” Amy Adler & Jeanne C. Fromer, *Memes on Memes and the New Creativity*, 97 N.Y.U. L. REV. 453, 459, 462.

²³⁴ H.R. REP. NO. 94-1476, at 51–52 (1976).

²³⁵ Intellectual Property Rights History, *supra* note 231.

²³⁶ 1 MENELL ET AL., *supra* note 111.

²³⁷ *Id.* (citing A. Arthur Schiller, *Trade Secrets and the Roman Law: The Actio Servi Corrupti*, 30 COLUM. L. REV. 837, 837 (1930)). *But see id.* at 44 n.1; Mark C. Suchman, *Invention and Ritual: Notes on the Interrelation of Magic and Intellectual Property in Preiterate Societies*, 89 COLUM. L. REV. 1264, 1279 (1989) (arguing that premodern systems of magic and ritual were governed by rules analogous to patent law and trade-secret law).

²³⁸ *See* sources cited *supra* notes 223–25.

²³⁹ *See* RAY ALLEN BILLINGTON, *WESTWARD EXPANSION: A HISTORY OF THE AMERICAN FRONTIER* 633–50 (1949) (chronicling the United States’ territorial expansion that was galvanized by American Industrialization, particularly within the railroad industry); *see also* Douglas Matus, *To What Extent Did the Industrial Revolution Change American Social, Economic & Political Life?*, SEATTLE PI, <https://education.seattlepi.com/extent-did-industrial-revolution-change-american-social-economic-political-life-6960.html> (last visited Nov. 6, 2023) (noting that the United States’ shift from an agrarian economy to an industrialized economy “established the United States as the world’s foremost industrial power”); David R. Meyer, *The Roots of American Industrialization, 1790-1860*, EH.NET, <https://eh.net/encyclopedia/the-roots-of-american-industrialization-1790-1860/> (last visited Nov. 6, 2023) (dating American Industrialization to 1790 and analyzing the synergy between America’s agrarian and industrial models).

²⁴⁰ David M. Byrne, *The Digital Economy and Productivity*, in *Finance and Economics Discussion Series 2* (2022) (“In the United States, this was indeed the case from the dawn of electronic computing in the 1950s through roughly 2010, with the share of information technology in business investment more than doubling to over 40 percent and its share in consumer durables spending climbing from minimal in 1980 to over 10 percent in 2010. More recently, the share of IT capital in business and household investment has roughly moved

Notably, the United States' relatively younger and more technologically-advanced origins analogize to the historical development of copyright law.²⁴¹ The history of copyright law predates even English Common Law²⁴²—the origins of American jurisprudence.²⁴³ Copyright law's origins are rooted in fifteenth-century Venetian intellectual-property laws that developed in response to the invention of the printing press.²⁴⁴ This means that copyright law's advent occurred alongside new technology that could produce portions of copyrightable works, just like AI can today.

B. Legislative History Impacts How Copyright Law is Interpreted

The Venetian roots of recognizing rights to published works—even those created with the help of technology—were later adopted as “copyright” law within English Common Law.²⁴⁵ England would later codify copyrights in The Statute of Anne in 1710;²⁴⁶ these rights were originally limited to books but are now expanded to works that were created with assisting tools like photographs, sound recordings, motion pictures, and computer programs.²⁴⁷ England's early copyright laws would also be

sideways, seeming to suggest that digitalization in the economy has stabilized.” (citation omitted)). *But see* Jinzhu Zhang et al., *The Impact of Digital Economy on the Economic Growth and the Development Strategies in the post-COVID-19 Era: Evidence From Countries Along the “Belt and Road,”* 10 FRONTIERS IN PUB. HEALTH 1, 1–2, 11, 13–14 (2022) (analyzing why information and communications technology is “gradually considered as the ‘engine’ for economic development” on the global stage and classifying the United States as a country with a high Global Trade Analysis Project score, meaning its digital industries and trade patterns remain relatively resilient to the “negative economic impact” of the COVID-19 epidemic). *But cf.* AMANDA M. COUNTRYMAN ET AL., DISAGGREGATING THE UNITED STATES GTAP REGION INTO 51 US-STATE SUBREGIONS 1 (2017) (“To properly analyze the impact of these asymmetric trade cost changes in a global economic modeling framework, the US must be disaggregated into subregions.”).

²⁴¹ *See* 2 MENELL ET AL., *supra* note 116.

²⁴² *See id.*

²⁴³ *See generally* 1 WILLIAM BLACKSTONE, COMMENTARIES ON THE LAWS OF ENGLAND (1765).

²⁴⁴ *See* 2 MENELL ET AL., *supra* note 116.

²⁴⁵ *Id.* (citing ELIZABETH L. EISENSTEIN, THE PRINTING REVOLUTION IN EARLY MODERN EUROPE (1993)) (identifying the first English “copyright” as granted “by royal decree in 1512”).

²⁴⁶ *See* The Statute of Anne, 8 Anne ch. 19 (1710); *Copyright Timeline: A History of Copyright in the United States*, ASS'N OF RSCH. LIBRS., <https://www.arl.org/copyright-timeline/> (last visited Nov. 6, 2023) (noting the United States' original Copyright Act of 1790 “was modeled on the Statute of Anne (1710)”).

²⁴⁷ *See* The Statute of Anne, 8 Anne ch. 19 (1710); *see also* Copyright, Designs and Patents Act 1988, ch. 48. 5A–B, 50A–C (U.K. 1988).

defined by *Millar v. Taylor*, whose ruling heavily favored copyright owners by establishing that no copyrighted works *ever* entered public domain.²⁴⁸

Although *Millar* was ultimately overturned, it demonstrates the importance of protecting *and expanding* copyrights within the English Common Law tradition.²⁴⁹ Among the factors for *Millar*'s holding was the threat of England being economically disadvantaged by the burgeoning Scottish reprint industry.²⁵⁰ Such utilitarian considerations of the nation's economic interests demonstrate that copyright law within the English tradition has always strongly considered the economic implications of intellectual-property law.²⁵¹ Utilitarianism is a key consideration for the issue of AI-created works due to the ongoing economic trends that forecast more sophisticated and economically-viable AI-created works.²⁵² So, American copyright law should be looking to its longstanding history of expanding copyrights by granting copyrights to works created by fully-autonomous AI.²⁵³

Further, *Millar*'s overturning highlights another historical development that suggests copyrights should be expanded to AI-created works: a return to considering legislative history.²⁵⁴ As part of the *Millar* majority's rationale, the Chancery found a

²⁴⁸ See generally *Millar v. Taylor* (1769), 98 Eng. Rep. 201, 2310, 2413. *Contra generally* *Donaldson v. Becket* (1774), 1 Eng. Rep. 837, 130–31, 141–42, 144–45 (holding that copyright in published works was not perpetual, but instead, restricted by The Statute of Anne).

²⁴⁹ See generally *Millar*, 98 Eng. Rep. at 2310, 2413, *overruled by* *Donaldson*, 1 Eng. Rep. at 130–31, 141–42, 144–45 (holding that copyright in published works was not perpetual, but instead, restricted by The Statute of Anne).

²⁵⁰ See Ronan Deazley, *Commentary on: Millar v. Taylor (1769)*, COPYRIGHT HIST. (2008), https://www.copyrighthistory.org/cam/tools/request/showRecord.php?id=commentary_uk_1769.

²⁵¹ Mia Shuk Chun Lam, *The Granting of Intellectual Property Rights and Their Effect on the Promotion of Future Innovation and Creativity*, 6 THE KING'S STUDENT L. REV. 1, 1–2 (2015).

²⁵² See, e.g., *Harper & Row, Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 557–58 (1985) (characterizing copyright law as advancing public welfare by reviewing relevant caselaw); see also Shyamkrishna Balganesh, *Foreseeability and Copyright Incentives*, 122 HARV. L. REV. 1569, 1576–77 (2009) (“[C]opyright law in the United States has undeniably come to be understood almost entirely in utilitarian, incentive-driven terms.”); Jeanne C. Fromer, *Expressive Incentives in Intellectual Property*, 98 VA. L. REV. 1745, 1750–52 (2012) (“The Supreme Court, Congress, and many legal scholars consider utilitarianism the dominant purpose of American copyright . . . law.” (footnote omitted)); William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 326 (1989) (noting that intellectual property is distinguished by its “‘public good’ aspect”).

²⁵³ See Jeanne C. Fromer, *An Information Theory of Copyright Law*, 61 EMORY L.J. 71, 71 (2014) (identifying utilitarianism as “[t]he dominant American theory of copyright law” but elaborating that information theory should also be considered to protect works that at least “convey[] expression that is enjoyable in and of itself,” such as paintings completely created by AI).

²⁵⁴ ANTONIN SCALIA & BRYAN A. GARNER, *READING LAW: THE INTERPRETATION OF LEGAL TEXTS* 369 (2012) (“In English practice, a complete disregard of legislative history remained

common-law basis for copyrights that predated the Statute of Anne and governed over any restraints written into the statute.²⁵⁵ However, *Millar*'s bar against using legislative history has since been overcome in both English and American jurisprudence because analyzing the legislative history is a generally-accepted approach to legal interpretation.²⁵⁶ And within American jurisprudence specifically, legislative history predating the Constitution demonstrates that federal copyright law—including the Constitution—is the most prominent source of copyrights.²⁵⁷

C. Copyright Law's Purposes Were Trivialized by the Board

Because legislative history is relevant in determining the historical function of American copyright law, a purely textual reading of the Act ignores dispositive information.²⁵⁸ Resultantly, the Board's decision should be overturned not only for misinterpreting case precedent that supports an intellectual-labor standard—not a "human authorship" requirement—but also because the decision clashes with the historical roots and functions of intellectual-property law.²⁵⁹ Namely, the roots dating back the Renaissance Venice and tracked through English Common Law and *The Federalist Debate* which emphasize the function of protecting an individual's right to his creations²⁶⁰—whether advanced types of technology for that era were used in creating the work or not—as well as benefitting the nation as a whole.²⁶¹

This creator-friendly and public-good-focused history of copyright must be remembered when returning to the present. The Board's decision bars AI developers who successfully program a fully-autonomous AI from enjoying the fruits of that labor

the firm rule from 1769 when it was first announced, until 1992, when the House of Lords changed the practice . . .").

²⁵⁵ See *Millar v. Taylor* (1769), 98 Eng. Rep. 201, 252–53.

²⁵⁶ See generally *Why Legislative History Matters When Crafting a Winning Argument*, THOMSON REUTERS (May 6, 2020), <https://legal.thomsonreuters.com/blog/basics-of-researching-legislative-history/> (emphasizing the importance of legislative history to practical legal writing and identifying best practices).

²⁵⁷ See THE FEDERALIST NO. 43 (Alexander Hamilton) (discussing that federal copyright protection is preferable to state protection); see also KEN SUTAK, THE GREAT MOTION PICTURE SOUNDTRACK ROBBERY: AN ANALYSIS OF COPYRIGHT PROTECTION xiii–xiv (1976) (“[N]ational protection for intellectual property seems to have been accepted at first and full impression by both the [Constitutional] Convention and the states adopting the Constitution.”).

²⁵⁸ See Complaint at 12, *Thaler v. Perlmutter*, No. 1:22-CV-01564 (D.C. June 2, 2022) (highlighting “the importance of a purposive approach to statutory interpretation rather than a hyper-literal, textualist approach combined with an over-reliance on dicta”).

²⁵⁹ See sources cited *supra* notes 235–58.

²⁶⁰ See sources cited *supra* notes 235–58.

²⁶¹ See Randolph J. May & Seth L. Cooper, *The “Reason and Nature” of Intellectual Property: Copyright and Patent in The Federalist Papers*, 9 PERSPECTIVES FROM FSF SCHOLARS 1, 2–3, 10–11, 15 (2013) (discussing how *The Federalist No. 43*'s emphasis on 'utility' and 'public good,' as well as “an individual's natural right to the fruits of his or her own labor” informed the Constitution's Intellectual-Property Clause).

when the AI produces a work without a human's involvement after developing the AI.²⁶² And because this bar harms the public good, it should be overruled as unconstitutional in favor of the intellectual-labor standard—which is more amenable to the purpose and history of copyright law.²⁶³

VII. CONCLUSION

The “human authorship” requirement is invalid because a proper interpretation of the relevant authorities finds the “human” subelement is a threshold matter.²⁶⁴ Specifically, the “human” subelement actually refers to how much intellectual labor is required of a copyrightable work's author: the work's *originator*.²⁶⁵

In determining the artificiality of “human authorship”—and the resultant impediment to “progressing the useful arts”²⁶⁶—this Note arrived at four important subsidiary conclusions.²⁶⁷

First, the precedent—and the few subsequent references to a “human authorship” requirement in copyright caselaw—that the Board relied upon in denying the *Creativity Machine*'s copyright application never prioritized an author's humanity.²⁶⁸ Instead, this caselaw inquired as to how much intellectual labor was used in creating the work.²⁶⁹

Second, the animal, natural-occurrence, and supernatural-being cases of non-authorship used by the Board to analogize to fully-autonomous AI were distinguishable on either procedural, substantive, or intellectual-labor grounds.²⁷⁰

Third, relying on the CONTU as an authority on the intersection of fully-autonomous AI and copyright law is tenuous because CONTU only considered non-AI computers as assisting tools without providing any insight on fully-autonomous AI.²⁷¹

²⁶² Board Refusal of Second Request, *supra* note 5, at 1–2.

²⁶³ See U.S. CONST. art. I, § 8, cl. 8; see also *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 558 (“The Framers intended copyright itself to be the engine of free expression. By establishing a marketable right to the use of one's expression, copyright supplies the economic incentive to create and disseminate ideas.”); *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (“The immediate effect of our copyright law is to secure a fair return for an ‘author's’ creative labor. But the ultimate aim is, by this incentive, to stimulate [the creation of useful works] for the general public good.”).

²⁶⁴ *In re Trade-Mark Cases*, 100 U.S. 82, 94 (1879).

²⁶⁵ *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 58 (1884); see also *Comty. for Creative Non-Violence v. Reid*, 490 U.S. 730 (1989).

²⁶⁶ U.S. CONST. art. I, § 8, cl. 8.

²⁶⁷ See *supra* Parts II–V.

²⁶⁸ See *supra* Part II.A.

²⁶⁹ See *supra* Part II.A.

²⁷⁰ See generally *supra* Part IV.

²⁷¹ See generally *supra* Part V.B.

Fourth, copyright law's history developed in parallel to technological advancement that contributed to the creation of a human's works.²⁷² And similar to other types of intellectual property, copyright law's history is rooted in rewarding creative, useful works of authors that benefit the public good.²⁷³ So, because the Board's decision clashes with both aforementioned factors, the Supreme Court of the United States should hold the Board's decision as unconstitutional and adopt the more historically appropriate intellectual-labor standard.²⁷⁴

When assessing these four subsidiary conclusions, two final conclusions arise.²⁷⁵ First, that "human authorship" is not a true prerequisite to copyrightability.²⁷⁶ Second, authorship for fully-autonomous AI can coexist with longstanding copyright precedent.²⁷⁷

Bearing this in mind, appellate courts should feel empowered to overturn the Board's refusal to register the *Creativity Machine's* painting²⁷⁸ and, consequently, hold that fully-autonomous AI are valid copyright authors. In so doing, courts would be²⁷⁹ upholding the Constitutional mandate to "promote . . . [the] useful arts"²⁸⁰ by incentivizing a broader pool of intelligently-laborious authors to produce valuable, creative works.²⁸¹

²⁷² 2 MENELLE ET AL., *supra* note 116.

²⁷³ See, e.g., *History and Sources of Intellectual Property Law*, *supra* note 113.

²⁷⁴ See sources cited *supra* notes 272–73; see also U.S. CONST. art. I, § 8, cl. 8.

²⁷⁵ See *supra* Part I.

²⁷⁶ *Id.*

²⁷⁷ *Id.*

²⁷⁸ Creativity Machine, A Recent Entrance to Paradise (painting), in Michael D. Murray, *Generative and AI Authored Artworks and Copyright Law*, 45 HASTINGS COMM'NS AND ENT. L.J. 27, 42 (2023).

²⁷⁹ See Palace, *supra* note 24, at 225–26 (recognizing that courts have yet to address the issue of authorship when a work was created by fully-autonomous AI (prior to the District Court of D.C. reviewing the Board's Decision in *Thaler v. Perlmutter*)).

²⁸⁰ U.S. CONST. art. I, § 8, cl. 8.

²⁸¹ See *Marion Merrell Dow Inc. v. Baker Norton Pharms., Inc.*, 948 F. Supp. 1050, 1056 (S.D. Fla. 1996), *dismissed sub nom.*, *Marion Merrel Dow, Inc. v. Baker Norton Pharms., Inc.*, 152 F.3d 941 (Fed. Cir. 1998) (identifying Article I, Section 8, Clause 8 of the U.S. Constitution as a *mandate* in holding that the United States Patent and Trademark Office is the "executor of Congress's mandate as expressed in the laws governing the issuances of patents"); see also *Nw. Corp. v. Gabriel Mfg. Co.*, No. 95 C 2004, 1998 WL 525431, at *7 (N.D. Ill. Aug. 19, 1998) (holding that the policy that creates patent and copyright protection, but not trademark protection, is derived from the "constitutional mandate" of the Intellectual-Property Clause); *Veeck v. S. Bldg. Code Cong. Int'l, Inc.*, 293 F.3d 791, 812 (5th Cir. 2002) (identifying one factor in a copyright law balancing test to be the "constitutionally mandated retention of copyright protection for privately authored works . . .").

A. *Call For Future Research: Assisting-Tool AI*

Future scholarship should review AI as an assisting tool, briefly discussed *arguendo* in this Note.²⁸² Applying the joint-authorship approach to ownership should be considered for works created by assisting-tool AI.²⁸³ Courts, practitioners, and legal scholars alike would all benefit from evidence-based guideposts for when a work's author—produced by a human *and* an AI—is the human being and when it is the AI.²⁸⁴ Although this Note discusses why works produced by fully-autonomous AI should grant authorship to the AI itself, a more nuanced balancing is necessary when both a human and an AI—or potentially multiple separately-autonomous AI programs—*both* substantially contributed to a work's creation.²⁸⁵

²⁸² See generally Part II.A.

²⁸³ 17 U.S.C. § 201(a).

²⁸⁴ See generally James Vincent, *The Scary Truth About AI Copyright is Nobody Knows What Will Happen Next*, THE VERGE (Nov. 15, 2022, 10:00 AM), <https://www.theverge.com/23444685/generative-ai-copyright-infringement-legal-fair-use-training-data>.

²⁸⁵ See, e.g., *Torah Soft Ltd. v. Drosnin*, 136 F. Supp. 2d 276, 283 (S.D.N.Y. 2001); *Rearden LLC v. Walt Disney Co.*, 293 F. Supp. 3d 963, 971 (N.D. Cal. 2018).