United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued September 19, 2024 Decided March 18, 2025

No. 23-5233

STEPHEN THALER, AN INDIVIDUAL,
APPELLANT

v.

SHIRA PERLMUTTER, IN HER OFFICIAL CAPACITY AS REGISTER OF COPYRIGHTS AND DIRECTOR OF THE UNITED STATES COPYRIGHT OFFICE AND U.S. COPYRIGHT OFFICE,
APPELLEES

Appeal from the United States District Court
for the District of Columbia
(No. 1:22-cv-01564)

Ryan Abbott argued the cause for appellant. With him on the briefs was *Timothy G. Lamoureux*.

Ryan N. Phelan was on the brief for *amici curiae* Legal Professors Shlomit Yanisky-Ravid, *et al*. in support of appellant.

Nicholas S. Crown, Attorney, U.S. Department of Justice, argued the cause for appellees. With him on the brief were *Brian M. Boynton*, Principal Deputy Assistant Attorney

General at the time the brief was filed, *Daniel Tenny*, Attorney, and *Emily L. Chapuis*, Deputy General Counsel, U.S. Copyright Office.

Before: MILLETT and WILKINS, *Circuit Judges*, and ROGERS, *Senior Circuit Judge*.

Opinion for the Court filed by *Circuit Judge* MILLETT.

MILLETT, *Circuit Judge*: This case presents a question made salient by recent advances in artificial intelligence: Can a non-human machine be an author under the Copyright Act of 1976? The use of artificial intelligence to produce original work is rapidly increasing across industries and creative fields. Who—or what—is the "author" of such work is a question that implicates important property rights undergirding economic growth and creative innovation.

In this case, a computer scientist attributes authorship of an artwork to the operation of software. Dr. Stephen Thaler created a generative artificial intelligence named the "Creativity Machine." The Creativity Machine made a picture that Dr. Thaler titled "A Recent Entrance to Paradise." Dr. Thaler submitted a copyright registration application for "A Recent Entrance to Paradise" to the United States Copyright Office. On the application, Dr. Thaler listed the Creativity Machine as the work's sole author and himself as just the work's owner.

The Copyright Office denied Dr. Thaler's application based on its established human-authorship requirement. This policy requires work to be authored in the first instance by a human being to be eligible for copyright registration. Dr.

Thaler sought review of the Office's decision in federal district court and that court affirmed.

We affirm the denial of Dr. Thaler's copyright application. The Creativity Machine cannot be the recognized author of a copyrighted work because the Copyright Act of 1976 requires all eligible work to be authored in the first instance by a human being. Given that holding, we need not address the Copyright Office's argument that the Constitution itself requires human authorship of all copyrighted material. Nor do we reach Dr. Thaler's argument that he is the work's author by virtue of making and using the Creativity Machine because that argument was waived before the agency.

I

A

The Constitution's Intellectual Property Clause gives Congress authority to "promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries[.]" U.S. CONST. Art. I, § 8, cl. 8. Under that provision, federal copyright protection extends only as far as Congress designates by statute. *Wheaton v. Peters*, 33 U.S. 591, 661 (1834).

Copyright law incentivizes the creation of original works so they can be used and enjoyed by the public. Since the founding, Congress has given authors short term monopolies over their original work. *See* Act of May 31, 1790, ch. 15, 1st Cong., 1 Stat. 124. This protection is not extended as "a special reward" to the author, but rather "to encourage the production of works that others might reproduce more cheaply." *Google LLC v. Oracle Am., Inc.*, 593 U.S. 1, 16 (2021). By ensuring

that easily reproducible work is protected, individuals are incentivized to undertake the effort of creating original works that otherwise would be easily plagiarized.

The Copyright Act of 1976 is the current federal copyright statute. Three of its provisions are relevant here.

First, the Copyright Act preempts state common law copyright protection by immediately vesting federal copyright ownership in a work's author as soon as a work is created. 17 U.S.C. §§ 102(a); 201(a); 301(a). Although domestic authors generally must register their copyrights to exercise other rights, like the right to sue for infringement, *id.* § 411(a), the right to own a copyright does not depend on registration or publication.

Second, the Copyright Act incentivizes authors by protecting their work "for a term consisting of the life of the author and 70 years after the author's death." 17 U.S.C. § 302(a). In that way, authors are encouraged to produce work because they know that they can profit from it for their entire life and that their heirs and assigns can continue to benefit for seven decades thereafter.

Third, individuals and organizations can own copyrights by hiring someone to create work. The Copyright Act's work-made-for-hire provision allows "the employer or other person for whom the work was prepared" to be "considered the author" and "own[] all of the rights comprised in the copyright." 17 U.S.C. § 201(b). Rather than enduring for the author's lifetime, a work-made-for-hire copyright lasts "95 years from the year of its first publication, or a term of 120 years from the year of its creation, whichever expires first." *Id.* § 302(c).

B

The Copyright Act is administered by the United States Copyright Office. 17 U.S.C. § 701(a). That Office has a duty to "[a]dvise Congress" on issues "relating to copyright," to "[p]rovide information and assistance" to "Federal departments and agencies and the Judiciary," and to "[c]onduct studies and programs regarding copyright[.]" *Id.* § 701(b)(1), (2), (4).

In addition, the Copyright Office has authority to establish regulations to implement the Copyright Act. 17 U.S.C. § 702. Pursuant to that authority, the Copyright Office issues regulations governing the "conditions for the registration of copyright, and the application to be made for registration[.]" 37 C.F.R. § 202.3(a)(1). The Copyright Office publishes these registration regulations in the *Compendium of Copyright Office Practices* to inform authors about registration criteria for different types of work. *See* Copyright Office, *Compendium of U.S. Copyright Office Practices* (3d ed. 2021), https://perma.cc/9N9N-C3VU (*Compendium Third Edition*).

Individuals whose registration applications are denied can seek reconsideration by the Copyright Office's Registration Program. If still dissatisfied, they can ask the Copyright Office's Review Board to reconsider their case. 37 C.F.R. § 202.5(b), (c). A decision by the Review Board "constitutes final agency action," *id.* § 202.5(g), and is reviewable under the Administrative Procedure Act, 5 U.S.C. § 704; 17 U.S.C. § 701(e).

Copyright Office regulations have long required that any registered work be authored by a human. *See* Copyright Office, *Compendium of Copyright Office Practices* § 2.8.3(I), (I)(a)(1)(b) (1st ed. 1973), https://perma.cc/J7ML-BZK6

(*Compendium First Edition*) ("[N]othing can be considered the 'writing of an author'" unless it owes its "origin to a human agent[.]"); Copyright Office, *Compendium of Copyright Office Practices* § 202.02(b) (2d ed. 1984), https://perma.cc/52MX-6YPD (*Compendium Second Edition*) ("The term "authorship" implies that, for a work to be copyrightable, it must owe its origin to a human being."). The current *Compendium* advises that the Copyright Office "will refuse to register a claim if it determines that a human being did not create the work." *Compendium Third Edition* § 306. That refusal extends to works "produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author." *Id.* § 313.2

C

1

Dr. Thaler is a computer scientist who creates and works with artificial intelligence systems, Thaler Opening Br. ii, and who invented the Creativity Machine, *id.* 43-44. On May 19, 2019, Dr. Thaler submitted a copyright registration application to the Copyright Office for an artwork titled "A Recent Entrance to Paradise." J.A. 43. On the application, Dr. Thaler listed the "Author" of that work as the "Creativity Machine." J.A. 43. Under "Copyright Claimant," Dr. Thaler provided his own name. J.A. 43. In the section labeled "Author Created," Dr. Thaler wrote "2-D artwork, Created autonomously by machine." J.A. 43.

The Copyright Office denied Dr. Thaler's application because "a human being did not create the work." J.A. 45. The letter cited the Supreme Court's decision in *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53 (1884), in support of its decision. J.A. 45.

In seeking reconsideration by the Registration Program, Dr. Thaler acknowledged the Copyright Office's decision "was made on the basis that the present submission lacks human authorship[.]" J.A. 49. Dr. Thaler confirmed this "is correct" and "that the present submission lacks traditional human authorship—it was autonomously generated by an AI." J.A. 49. Dr. Thaler then argued that "the Human Authorship Requirement is unconstitutional and unsupported by either statute or case law." J.A. 49. Dr. Thaler claimed judicial opinions "from the Gilded Age" could not settle the question of whether computer generated works are copyrightable today. J.A. 55.

The Registration Program again denied Dr. Thaler's application because the work lacked "sufficient creative input or intervention from a human author." J.A. 59.

In his request for reconsideration by the Review Board, Dr. Thaler reaffirmed that "the present submission lacks traditional human authorship—it was autonomously generated by an AI." J.A. 63. He then reiterated his constitutional, statutory, and policy arguments against the human-authorship requirement. J.A. 63-69. Dr. Thaler also argued he should own the copyright under the work-made-for-hire doctrine because "non-human, artificial persons such as companies can already be authors under this doctrine." J.A. 66.

The Review Board affirmed the denial of Dr. Thaler's copyright application based on the human-authorship requirement. J.A. 73. The Board relied upon Dr. Thaler's "representation that the Work was autonomously created by artificial intelligence without any creative contribution from a human actor[.]" J.A. 72. The Board also rejected Dr. Thaler's argument that the work was made for hire on the ground that

there was no contract between Dr. Thaler and the Creativity Machine. J.A. 76-77.

2

Dr. Thaler sought review in the United States District Court for the District of Columbia, and both sides moved for summary judgment. *Thaler v. Perlmutter*, 687 F. Supp. 3d 140, 142 (D.D.C. 2023). In his motion, Dr. Thaler asserted the same constitutional, statutory, and policy arguments that he had advanced before the agency, including the argument that he owns the copyright under the work-made-for-hire provision. J.A. 80-115. In addition, he claimed for the first time that the work is copyrightable because a human—Dr. Thaler—"provided instructions and directed his AI[.]" J.A. 113.

The district court affirmed the Copyright Office's denial of registration. Based on the caselaw and the Copyright Act's text, the district court concluded that "[h]uman authorship is a bedrock requirement of copyright." *Thaler*, 687 F. Supp. 3d at 146. The court also held that Dr. Thaler could not rely on the work-made-for-hire provision because that provision "presuppose[s] that an interest exists to be claimed." *Id.* at 150. The "image autonomously generated" by the Creativity Machine was not such an interest because it "was never eligible for copyright," so the Machine had no copyright to transfer to Dr. Thaler even if he were the Creativity Machine's employer. *Id*. Finally, the court found that Dr. Thaler waived his argument that he should own the copyright because he created and used the Creativity Machine. The court stressed that, "[o]n the record designed by plaintiff from the outset of his application for copyright registration," the case had presented "only the question of whether a work generated autonomously by a computer system is eligible for copyright." *Id.* at 149-150.

II

We review a district court's grant of summary judgment in a case concerning agency action *de novo* and, like the district court, will set aside the agency action only if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law[.]'" *Jicarilla Apache Nation v. United States Dep't of Interior*, 613 F.3d 1112, 1118 (D.C. Cir. 2010) (quoting 5 U.S.C. § 706(2)(A)). We "exercise independent judgment in determining the meaning of statutory provisions." *Loper Bright Enterprises v. Raimondo*, 603 U.S. 369, 394 (2024).

The district court had jurisdiction under 28 U.S.C. § 1331. This court has jurisdiction under 28 U.S.C. § 1291.

III

As a matter of statutory law, the Copyright Act requires all work to be authored in the first instance by a human being. Dr. Thaler's copyright registration application listed the Creativity Machine as the work's sole author, even though the Creativity Machine is not a human being. As a result, the Copyright Office appropriately denied Dr. Thaler's application.

A

Authors are at the center of the Copyright Act. A copyright "vests initially in the author or authors of the work." 17 U.S.C. § 201(a). And copyright protection only "subsists * * * in original works of authorship[.]" *Id.* § 102(a).

The Copyright Act does not define the word "author." But traditional tools of statutory interpretation show that, within the meaning of the Copyright Act, "author" refers only to human

beings. To start, the text of multiple provisions of the statute indicates that authors must be humans, not machines. In addition, the Copyright Office consistently interpreted the word author to mean a human prior to the Copyright Act's passage, and we infer that Congress adopted the agency's longstanding interpretation of the word "author" when it re-enacted that term in the 1976 Copyright Act.

1

Numerous Copyright Act provisions both identify authors as human beings and define "machines" as tools used by humans in the creative process rather than as creators themselves. Because many of the Copyright Act's provisions make sense only if an author is a human being, the best reading of the Copyright Act is that human authorship is required for registration.

First, the Copyright Act's ownership provision is premised on the author's legal capacity to hold property. A copyright "vests initially in the author[.]" 17 U.S.C. § 201(a). This means an "author gains 'exclusive rights' in her work immediately upon the work's creation." *Fourth Estate Pub. Benefit Corp. v. Wall-Street.com, LLC*, 586 U.S. 296, 300-301, (2019) (quoting 17 U.S.C. § 106). Because a copyright is fundamentally a property right created by Congress, and Congress specified that authors immediately own their copyrights, an entity that cannot own property cannot be an author under the statute.

Second, the Copyright Act limits the duration of a copyright to the author's lifespan or to a period that approximates how long a human might live. A copyright generally "endures for a term consisting of the life of the author and 70 years after the author's death." 17 U.S.C. § 302(a). The

Copyright Office maintains "current records of information relating to the death of authors of copyrighted works" so that it can determine when copyrights expire. *Id.* § 302(d). If the author's death is unknown, the Copyright Act presumes death after "a period of 95 years from the year of first publication of a work, or a period of 120 years from the year of its creation[.]" *Id.* § 302(e). And even when a corporation owns a copyright under the work-made-for-hire provision, the copyright endures for the same amount of time—"95 years from the year of first publication" or "120 years from the year of its creation[.]" *Id.* § 302(c). Of course, machines do not have "lives" nor is the length of their operability generally measured in the same terms as a human life.

Third, the Copyright Act's inheritance provision states that, when an author dies, that person's "termination interest is owned, and may be exercised" by their "widow or widower," or their "surviving children or grandchildren," 17 U.S.C. § 203(a)(2), (A). Machines, needless to say, have no surviving spouses or heirs.

Fourth, copyright transfers require a signature. To transfer copyright ownership, there must be "an instrument of conveyance" that is "signed by the owner[.]" 17 U.S.C. § 204(a). Machines lack signatures, as well as the legal capacity to provide an authenticating signature.

Fifth, authors of unpublished works are protected regardless of the author's "nationality or domicile." 17 U.S.C. § 104(a). Machines do not have domiciles, nor do they have a national identity.

Sixth, authors have intentions. A joint work is one "prepared by two or more authors with the intention that their contributions be merged into inseparable or interdependent

parts of a unitary whole." 17 U.S.C. § 101. Machines lack minds and do not intend anything.

Seventh, and by comparison, every time the Copyright Act discusses machines, the context indicates that machines are tools, not authors. For example, the Copyright Act defines a "computer program" as "a set of statements or instructions to be used directly or indirectly" to "bring about a certain result." 17 U.S.C. § 101. The word "machine" is given the same definition as the words "device" and "process," *id*., and those terms are consistently used in the statute as mechanisms that assist authors, rather than as authors themselves, *id*. §§ 102(a); 108(c)(2); 109(b)(1)(B)(i); 116(d)(1); 117(a)(1), (c); 401(a); 1001(2), (3). In addition, when computer programs and machines are referenced in the statute, the statute presumes they have an "owner," *id.* § 117(a), (c), who can perform "maintenance," "servic[e]," or "repair" on them, *id.* § 117(d)(1), (2).

All of these statutory provisions collectively identify an "author" as a human being. Machines do not have property, traditional human lifespans, family members, domiciles, nationalities, *mentes reae,* or signatures. By contrast, reading the Copyright Act to require human authorship comports with the statute's text, structure, and design because humans have all the attributes the Copyright Act treats authors as possessing. The human-authorship requirement, in short, eliminates the need to pound a square peg into a textual round hole by attributing unprecedented and mismatched meanings to common words in the Copyright Act. *See Food & Drug Admin. v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 133 (2000) ("It is a 'fundamental canon of statutory construction that the words of a statute must be read in their context and with a view to their place in the overall statutory

scheme.'") (quoting *Davis v. Michigan Dept. of Treasury*, 489 U.S. 803, 809 (1989)).

To be clear, we do not hold that any one of those statutory provisions states a necessary condition for someone to be the author of a copyrightable work. An author need not have children, nor a domicile, nor a conventional signature. Even the ability to own property has not always been required for copyright authorship. Married women in the nineteenth century authored work that was eligible for copyright protection even though coverture laws forbade them from owning copyrights. *See* Melissa Homestead, AMERICAN WOMEN AUTHORS AND LITERARY PROPERTY, 1822-1869, at 21-62 (2005); *Belford, Clarke & Co. v. Scribner*, 144 U.S. 488, 504 (1892) (recognizing Mrs. Terhune's authorship when her book's copyright was infringed, even though, as a married woman, she could not own property).

The point, instead, is that the current Copyright Act's text, taken as a whole, is best read as making humanity a necessary condition for authorship under the Copyright Act. That is the reading to which "the provisions of the whole law" point. *John Hancock Mut. Life Ins. Co. v. Harris Tr. & Sav. Bank*, 510 U.S. 86, 94 (1993) (quoting *Pilot Life Ins. Co. v. Dedeaux*, 481 U.S. 41, 51 (1987)).

2

The Copyright Office's longstanding rule requiring a human author reinforces the natural meaning of those statutory terms.

The Copyright Office first addressed whether machines could be authors in 1966—ten years before the Copyright Act of 1976 was passed. That year, the Register of Copyrights

wrote in the Copyright Office's annual report to Congress that, as "computer technology develops and becomes more sophisticated, difficult questions of authorship are emerging. * * * The crucial question appears to be whether the 'work' is basically one of human authorship, with the computer merely being an assisting instrument[.]" Copyright Office, *Sixty-Eighth Annual Report of the Register of Copyrights* at 5 (1966), https://perma.cc/QU7P-TY6N.

The Copyright Office formally adopted the human authorship requirement in 1973. That year, the Copyright Office updated its regulations to state explicitly that works must "owe their origin to a human agent[.]" *Compendium First Edition* § 2.8.3(I)(a)(1)(b).

In 1974, Congress created the National Commission on New Technological Uses of Copyrighted Works ("CONTU") to study how copyright law should accommodate "the creation of new works by the application or intervention of such automatic systems or machine reproduction." Pub. L. 93-573, § 201(b)(2), 88 Stat. 1873 (1974). CONTU assembled copyright experts from the government, academia, and the private sector to make recommendations to Congress. Prior to the Copyright Act's passage, the Library of Congress published summaries of CONTU's meetings, several of which focused on copyright law and computer technology. In none of these meetings did members of CONTU suggest that computers were authors rather than tools used by authors to create original work. *See* CONTU, *Meeting No. 2* at 10-11 (Nov. 19, 1975), https://perma.cc/857K-VRSB; CONTU, *Meeting No. 3* at 1-11 (Dec. 18-19, 1975), https://perma.cc/EB3T-KNR4; CONTU, *Meeting No. 4* at 1-8 (Feb. 11-13, 1976), https://perma.cc/NPG6-J8E3; CONTU, *Meeting No. 6* (May 6-7, 1976), https://perma.cc/HCX5-6ZYX; CONTU, *Meeting*

No. 7 at 46-148 (June 9-10, 1976), https://perma.cc/Q795-YVQ4.

This understanding of authorship and computer technology is reflected in CONTU's final report:

> On the basis of its investigations and society's experience with the computer, the Commission believes that there is no reasonable basis for considering that a computer in any way contributes authorship to a work produced through its use. The computer, like a camera or a typewriter, is an inert instrument, capable of functioning only when activated either directly or indirectly by a human. When so activated it is capable of doing only what it is directed to do in the way it is directed to perform.

CONTU, *Final Report* at 44 (1978), https://perma.cc/7S8T-TAB5.

Although CONTU's final report was not published until 1978, its conclusion that machines cannot be authors reflects the state of play at the time Congress enacted the Copyright Act in 1976. And when Congress amended the Copyright Act's provision governing computer programs shortly following CONTU's final report, Congress preserved the Act's provisions governing authorship and the language describing machines as devices used by authors. Pub. L. No. 96-517, 94 Stat. 3015, 3028 (1980) (stating it is not infringement to copy a computer program if the copy "is created as an essential step in the utilization of the computer program in conjunction with a machine[.]").

In short, at the time the Copyright Act was passed and for at least a decade before, computers were not considered to be capable of acting as authors, but instead served as "inert

instrument[s]" controlled "directly or indirectly by a human" who could be an author. CONTU, *Final Report* at 44 (1978), https://perma.cc/7S8T-TAB5. We infer Congress adopts an agency's interpretation of a term "when a term's meaning was well-settled[.]" *Sackett v. Environmental Prot. Agency*, 598 U.S. 651, 683 (2023). And that rule applies with double force here where the commission Congress designated to study the issue, CONTU, came to the same conclusion. Given all that, the interpretation of "author" as requiring human authorship was well-settled at the time the 1976 Copyright Act was enacted.

3

Dr. Thaler's contrary reading of the statutory text fails.

a

Dr. Thaler argues first that the natural meaning of "author" is not confined to human beings. Dr. Thaler points to a 2023 dictionary definition defining "author" as "one that originates or creates something[.]" Thaler Opening Br. 23 (citing *Author*, Merriam-Webster Dictionary (2023)), https://perma.cc/S96L-WYTS.

But statutory construction requires more than just finding a sympathetic dictionary definition. We "do not read statutes in little bites," or words in isolation from their statutory context. *Kircher v. Putnam Funds Tr.*, 547 U.S. 633, 643 (2006). The judicial task when interpreting statutory language, instead, is to discern how Congress used a word in the law.

That process includes "a natural presumption that identical words used in different parts of the same act are intended to have the same meaning." *Atlantic Cleaners & Dryers, Inc. v.*

United States, 286 U.S. 427, 433 (1932). Here, the Copyright Act makes no sense if an "author" is not a human being. If "machine" is substituted for "author," the Copyright Act would refer to a machine's "children," 17 U.S.C. § 203(a)(2), a machine's "widow," *id.*, a machine's "domicile," *id.* § 104(a), a machine's *mens rea*, *id.* § 101, and a machine's "nationality," *id.* Problematic questions would arise about a machine's "life" and "death[.]" *Id.* § 302(a). And "machine" would inconsistently mean both an author and a tool used by authors. *Id.* § 117(d)(1); *see id.* §§ 102(a); 108(c)(2); 116(d)(1); 117(c); 1001(2), (3).

Dr. Thaler points out that the Copyright Act's work-made-for-hire provision allows those who hire creators to be "considered the author" under the Act. 17 U.S.C. § 201(b). That is why corporations, *e.g.*, *Warren v. Fox Fam. Worldwide, Inc.*, 328 F.3d 1136, 1140 (9th Cir. 2003), and governments, *e.g.*, *Georgia v. Public.Resource.Org, Inc.*, 590 U.S. 255, 270 (2020), can be legally recognized as authors.

But the word "considered" in the work-made-for-hire provision does the critical work here. It allows the copyright and authorship protections attaching to a work originally created by a human author to transfer instantaneously, as a matter of law, to the person who hired the creator. *See Community for Creative Non-Violence v. Reid*, 490 U.S. 730, 737 (1989). Congress, in other words, was careful to avoid using the word "author" by itself to cover non-human entities. For if Congress had intended otherwise, the work-made-for-hire provision would say straightforwardly that those who hire creators "*are* the author for purposes of this title," not that they are "*considered* the author for purposes of this title."

b

Dr. Thaler also argues that the human-authorship requirement wrongly prevents copyright law from protecting works made with artificial intelligence. Thaler Opening Br. 38.

But the Supreme Court has long held that copyright law is intended to benefit the public, not authors. Copyright law "makes reward to the owner a secondary consideration. * * * '[T]he primary object in conferring the monopoly lie[s] in the general benefits derived by the public from the labors of authors.'" *United States v. Loew's, Inc.*, 371 U.S. 38, 46-47 (1962) (quoting *Fox Film Co. v. Doyal*, 286 U.S. 123, 127 (1932)).

To that public-benefit end, "the law of copyright has developed in response to significant changes in technology." *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417, 430 (1984). Photography, sound recordings, video recordings, and computer programs are all technologies that were once novel, but which copyright law now protects. *See Burrow-Giles*, 111 U.S. at 58; *Goldstein v. California*, 412 U.S. 546, 565-566 (1973); *Sony*, 464 U.S. at 442; *Google*, 593 U.S. at 21. Importantly, that evolution in copyright protection has been at Congress's direction, not through courts giving new meaning to settled statutory terms.

Contrary to Dr. Thaler's assumption, adhering to the human-authorship requirement does not impede the protection of works made with artificial intelligence. Thaler Opening Br. 38-39.

First, the human authorship requirement does not prohibit copyrighting work that was made by or with the assistance of artificial intelligence. The rule requires only that the author of

that work be a human being—the person who created, operated, or used artificial intelligence—and not the machine itself. The Copyright Office, in fact, has allowed the registration of works made by human authors who use artificial intelligence. *See Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence*, 88 Fed. Reg. 16,190, 16,192 (March 16, 2023) (Whether a work made with artificial intelligence is registerable depends "on the circumstances, particularly how the AI tool operates and how it was used to create the final work.").

To be sure, the Copyright Office has rejected some copyright applications based on the human-authorship requirement even when a human being is listed as the author. *See* Copyright Office, *Re: Zarya of the Dawn (Registration # VAu001480196)* (Feb. 21, 2023), https://perma.cc/AD86-WGPM (denying copyright registration for a comic book's images made with generative artificial intelligence). Some have disagreed with these decisions. *See* Motion Picture Association, *Comment Letter on Artificial Intelligence and Copyright* at 5 (Oct. 30, 2023), https://perma.cc/9W9X-3EZE (This "very broad definition of 'generative AI' has the potential to sweep in technologies that are not new and that members use to assist creators in making motion pictures."); 2 W. PATRY, COPYRIGHT § 3:60.52 (2024); Legal Professors Amicus Br. 36-37 ("The U.S. Copyright Office guidelines are somewhat paradoxical: human contributions must be demonstrated within the creative works generated by AI.").

Those line-drawing disagreements over how much artificial intelligence contributed to a particular human author's work are neither here nor there in this case. That is because Dr. Thaler listed the Creativity Machine as the *sole* author of the work before us, and it is undeniably a machine, not a human being. Dr. Thaler, in other words, argues only for the

copyrightability of a work authored exclusively by artificial intelligence. *Contrast Rearden LLC v. Walt Disney Co.*, 293 F. Supp. 3d 963 (N.D. Cal. 2018) (holding that companies may copyright work made with motion capture software).

Second, Dr. Thaler has not explained how a ban on machines being authors would result in less original work because machines, including the Creativity Machine, do not respond to economic incentives.

Dr. Thaler worries that the human-authorship requirement will disincentivize creativity by the creators and operators of artificial intelligence. Thaler Opening Br. 36. That argument overlooks that the requirement still incentivizes humans like Dr. Thaler to create and to pursue exclusive rights to works that they make with the assistance of artificial intelligence.

Of course, the Creativity Machine does not represent the limits of human technical ingenuity when it comes to artificial intelligence. Humans at some point might produce creative non-humans capable of responding to economic incentives. Science fiction is replete with examples of creative machines that far exceed the capacities of current generative artificial intelligence. For example, Star Trek's Data might be worse than ChatGPT at writing poetry, but Data's intelligence is comparable to that of a human being. *See Star Trek: The Next Generation: Schism* (Paramount television broadcast Oct. 19, 1992) ("Felis catus is your taxonomic nomenclature, an endothermic quadruped, carnivorous by nature"). There will be time enough for Congress and the Copyright Office to tackle those issues when they arise.

Third, Congress's choice not to amend the law since 1976 to allow artificial-intelligence authorship "might well be taken to be an acquiescence in the judicial construction given to the

copyright laws." *White-Smith Music Pub. Co. v. Apollo Co.*, 209 U.S. 1, 14 (1908). The human-authorship requirement is not new and has been the subject of multiple judicial decisions. The Seventh Circuit has squarely held that authors "of copyrightable works must be human." *Kelley v. Chicago Park Dist.*, 635 F.3d 290, 304 (7th Cir. 2011). And the Ninth Circuit has strongly implied the same when deciding that an author must be a "worldly entity," *Urantia Foundation v. Maaherra*, 114 F.3d 955, 958 (9th Cir. 1997), and cannot be an animal, *Naruto v. Slater*, 888 F.3d 418, 426 (9th Cir. 2018).

Finally, even if the human authorship requirement were at some point to stymy the creation of original work, that would be a policy argument for Congress to address. U.S. CONST. Art. I, § 8, cl. 8. "Congress has the constitutional authority and the institutional ability to accommodate fully the varied permutations of competing interests that are inevitably implicated by such new technology." *Sony*, 464 U.S. at 431.

This court's job, by contrast, "is to apply the statute as it is written," not to wade into technologically uncharted copyright waters and try to decide what "might 'accord with good policy.'" *Burrage v. United States*, 571 U.S. 204, 218 (2014) (quoting *Commissioner v. Lundy*, 516 U.S. 235, 252 (1996)); *see also Teleprompter Corp. v. Columbia Broad. Sys., Inc.*, 415 U.S. 394, 414 (1974) ("Detailed regulation of these relationships, and any ultimate resolution of the many sensitive and important problems in this field, must be left to Congress."). Accommodating new technology "is for Congress." *Fortnightly Corp. v. United Artists Television, Inc.*, 392 U.S. 390, 401 (1968).

In that regard, it bears noting that the Political Branches have been grappling with how copyright law should adapt to new technology. The Copyright Office is studying how

copyright law should respond to artificial intelligence, *Artificial Intelligence and Copyright*, 88 Fed. Reg. 59,942, 59,942 (Aug. 30, 2023), and is making recommendations based on its findings, *see* Copyright Office, *Copyright and Artificial Intelligence, Part 1: Digital Replicas* at 57 (Jul. 31, 2024), https://perma.cc/8CUH-DN5A (recommending a statutory right for individuals to sue those who make deepfakes with their likeness); Copyright Office, *Copyright and Artificial Intelligence, Part 2: Copyrightability* at 32-40 (Jan. 29, 2025), https://perma.cc/W9VR-TLQP (recommending against changing the law governing the copyrightability of work generated by artificial intelligence). Also, Congress recently completed a report that addresses the problem of artificial intelligence and intellectual property. U.S. House of Rep., *Bipartisan House Task Force Report on Artificial Intelligence* at 111-136 (Dec. 2024), https://perma.cc/Y69R-DM3D. Congress and the Copyright Office are the proper audiences for Dr. Thaler's policy and practical arguments.

4

Because the Copyright Act itself requires human authorship, we need not and do not address the Copyright Office's argument that the Constitution's Intellectual Property Clause requires human authorship. The Copyright Act provides "a sufficient ground for deciding this case, and the cardinal principle of judicial restraint—if it is not necessary to decide more, it is necessary not to decide more—counsels us to go no further." *PDK Laboratories Inc. v. United States Drug Enforcement Agency*, 362 F.3d 786, 799 (D.C. Cir. 2004) (Roberts, J., concurring in part and concurring in the judgment).

IV

Dr. Thaler raises two alternative arguments in support of his copyright application. Neither succeeds.

First, Dr. Thaler argues that the Copyright Act's work-made-for-hire provision allows him to be "considered the author" of the work at issue because the Creativity Machine is his employee. Thaler Opening Br. 52-56; 17 U.S.C. § 201(b).

That argument misunderstands the human authorship requirement. The Copyright Act only protects "original works of authorship." 17 U.S.C. § 102(a). The authorship requirement applies to all copyrightable work, including work-made-for-hire. The word "authorship," like the word "author," refers to a human being. As a result, the human-authorship requirement necessitates that all "original works of authorship" be created in the first instance by a human being, including those who make work for hire.

Second, Dr. Thaler argues that he is the work's author because he made and used the Creativity Machine. Thaler Opening Br. 42-51. We cannot reach that argument. The district court held that Dr. Thaler forwent any such argument before the Copyright Office. *Thaler*, 687 F.Supp.3d at 150. And in his opening brief, Dr. Thaler did not challenge the district court's finding of waiver. Dr. Thaler offered only a single sentence in his opening brief, in which he describes the district court's conclusion as "based on a misunderstanding of the record below." Thaler Opening Br. 43. That "bare and conclusory assertion" is insufficient to preserve an argument for resolution on the merits. *Abdullah v. Obama*, 753 F.3d 193, 199 (D.C. Cir. 2014).

V

For the foregoing reasons, the district court's denial of Dr. Thaler's copyright application is affirmed.

So ordered.