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Direct editorial inquiries and send material for publication to:

Steven A. Meyerowitz, Editor-in-Chief, Meyerowitz Communications Inc., 26910 Grand Central Parkway, #18R, Floral Park, NY 11005, smeyerowitz@meyerowitzcommunications.com, 631.291.5541.

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AI as Inventor or Author—Developing Trends

Paul Ragusa and Nick Palmieri*

In this article, the authors examine, among other things, an example of attempted artificial intelligence (AI) inventorship, DABUS, which was listed as the inventor on several patent applications around the world. They believe that the global response, as well as the response by various U.S. government entities, will inform upon the current state of AI inventorship.

Artificial intelligence (AI) has made recent headlines for developing inventions, generating artwork, producing written works, and even preparing tax returns. These diverse uses of AI, including to create utilitarian techniques and original expressive works, has led to a debate regarding whether and when AI can become an inventor or author, along with the corresponding intellectual property rights accompanying this designation.

This article examines a prevalent (and persistent) example of attempted AI inventorship, DABUS, which was listed as the inventor on several patent applications around the world, but thus far with limited success. The global response, as well as the response by various U.S. government entities, will inform upon the current state of AI inventorship.

Recent developments under copyright law, which examines whether an AI can be considered an author, likewise are addressed.

Finally, this article reviews the recent notice from the U.S. Patent and Trademark Office (USPTO) published in the Federal Register seeking comments from industry stakeholders on the role that AI currently plays in the "invention creation process." Although the USPTO has made clear its position on AI inventorship in the past, the notice suggests continued consideration of this important problem.

DABUS—Legal Developments

In July 2019, Stephen Thaler submitted two U.S. patent applications, U.S. Application No. 16/524,350 and 16/524,532, which

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listed as the only inventor the AI "Device of Autonomous Bootstrapping of Unified Sentience" also known as "DABUS."[1] The USPTO rejected these applications, explaining that DABUS was not a "valid" inventor, and the issue of inventorship made its way to the U.S. Court of Appeals for the Federal Circuit.[2]

In *Thaler v. Vidal*,[3] the Federal Circuit affirmed the USPTO's conclusion that DABUS was *not* a valid inventor under the patent laws of the United States. The court supported its decision through relevant statutory text, case law, and common dictionary evidence. First noting that the Patent Act "expressly provides that inventors are 'individuals,'"[4] the court sought an appropriate definition of "individual" because it was not defined within the Patent Act. Looking outside the Patent Act, the court found that the "Supreme Court has explained, when used '[a]s a noun, "individual" ordinarily means a human being, a person.'"[5] The Federal Circuit supported this view via extrinsic evidence, in the form of common dictionary definitions of "individual" to be "a single human being."[6] The court looked to its own precedent that determined an inventor must be a "natural person," as opposed to a corporation or other judicial person.[7] Dr. Thaler filed a petition for a writ of certiorari to the U.S. Supreme Court on March 17, 2023.[8]

Dr. Thaler has met similar obstacles in the United Kingdom as well. There, two UK patent applications were denied before the UK Intellectual Property Office as they failed to identify a legitimate inventor. Dr. Thaler eventually appealed to the UK Supreme Court, which agreed to hear the case, and would mark the first instance, globally, of review of DABUS inventorship at the supreme court level.[9] Oral argument was held on March 3, 2023, in which counsel for Dr. Thaler argued that UK law does not "require" a patent to include a human inventor. The UK government reiterated its positions put forth in the lower courts, and noted that the UK government had decided, after public consultation, not to amend the UK patent law to allow for AI-created inventions.[10]

Copyright Developments

Copyrights, especially as to images, also pose a unique challenge for the use of AI, as various parties have attempted to register copyrights with an AI identified as the author. Like the USPTO, the U.S. Copyright Office has determined that an AI "lacks the

human authorship necessary to support a copyright claim."[11] The Copyright Office has thus repeatedly rejected application to register a copyright on a work developed or produced by an AI, such as "Midjourney."[12]

While AI involvement may not be prohibitive to registration, the registration may only cover the "expressive material" that can be attributed to a human author,[13] with AI-generated content apparently ineligible for protection.

Dr. Thaler, and DABUS, are also active in the copyright arena, as the Copyright Office has (repeatedly) refused registration of a work titled "A Recent Entrance to Paradise," which was, in Dr. Thaler's words, "created autonomously by machine."[14] In a recent motion for summary judgment, Dr. Thaler highlighted the differences between patented works and copyrighted works, noting that, unlike the Patent Act, the Copyright Act "includes a clear regime for works created by authors with no natural lifespan" pointing to the provisions for "anonymous or pseudonymous" works as well as the "work for hire" system, which allows for companies to be registered as the "author" of a work for the purpose of registration.[15] In contrast, the Copyright Office, in its own motion for summary judgment, distinguished these alleged "non-human" situations, pointing out that the Supreme Court's precedent emphasizes that "human expression" is required for copyright protection, as opposed to mere mechanical production.[16]

Appellate courts have also consistently rejected the idea of non-human authorship. For example, the decision by the U.S. Court of Appeals for the Ninth Circuit in *Naruto v. Slater* noted that if Congress intended for non-human authors (in that case, a monkey) to be covered by the act, it would need to clearly state its intent.[17] Given the level of deference to administrative decisions required by U.S. courts, the Copyright Office argues that Dr. Thaler cannot show that the Copyright Office's decision was "arbitrary, capricious, and abuse of discretion, or otherwise not in accordance with law."[18]

This policy is reiterated in the Copyright Office's recent "statement of policy," which was released on March 16, 2023.[19] The Copyright Office notes that if the "traditional elements" of authorship for a particular work "were produced by a machine," then the work "lacks human authorship and the Office will not register it."[20] This would not apply, generally, to all works that contain any AI-generated components, such as the example in which a human "select[s] or arranges[s] AI-generated materials in a sufficiently creative way,"

which can be registered under the current law.[21] Where a submission for registration contains AI-generated material, the Copyright Office requires the applicant to provide only human contributors as the authors, but also to indicate (and explicitly exclude) any AI-generated content that is more than de minimus content of the applied for work.[22]

USPTO'S Most Recent Guidance

Although the USPTO has been steadfast in its position that an AI cannot be an inventor, it remains engaged with stakeholders to continue considering whether and to what extent AI should be eligible as an inventor. Recognizing that "AI plays a greater role in the innovation process" than in the past, the USPTO issued a request for comments related to AI and inventorship.[23] In the notice, the USPTO presented a series of questions related to whether and how it should react to the increasing prevalence of AI in information.[24] This necessarily includes questions of whether AI should be considered, or even could be considered, an inventor.[25]

The USPTO questions also seek to differentiate contributions by an AI with contributions by traditional computer systems, as well as quantifying the "degree" of contribution made by an AI (including how such contributions can be presented).[26] These questions also raise further potential patentability issues, such as enablement and disclosure requirements at the USPTO.[27] Beyond the question of inventorship, the nature of an AI may present a challenge to a patent applicant from adequately enabling an invention as required by the Patent Act.[28]

Notwithstanding the May 15, 2023, deadline for comments in response to the USPTO's request, the notice signals a continued dialogue that the USPTO intends to undertake regarding AI. While its current positions regarding inventorship by an AI seems clear, it does appear to recognize the growing role that AI will play in future inventions.

Notes

* Paul Ragusa is a partner in the Intellectual Property section of the New York office of Baker Botts LLP. His practice encompasses high technology and Hatch-Waxman patent litigation, inter-partes reviews, intellectual property

portfolio management, and licensing, including of standard-essential patents. Nick Palmieri is an associate in the Intellectual Property section of the firm's New York office. The authors may be contacted at paul.ragusa@bakerbotts.com and nick.palmieri@bakerbotts.com, respectively.

1. Benita Rose Matthew, The First Time an AI Has Been Listed as an Inventor in a Published "International" Application, Artificial Inventor (June 9, 2020), https://artificialinventor.com/the-first-time-an-ai-has-been-listed-as-an-inventor/.

2. Paul Ragusa and Nick Palmieri, Artificial Intelligence as Inventor: DABUS Global Status, 39:2 Comp. & Internet Lawyer 1, 2 (2022).

3. 43 F.4th 1207 (Fed. Cir. 2022).

4. *Id.* at 1211.

5. *Id.* (quoting Mohamad v. Palestinian Auth., 566 U.S. 449, 454 (2012)).

6. *Id.*

7. *Id.* at 1212 (citing Univ. of Utah v. Max-Planck-Gesellschaft Zur Forderung der Wissenschaften E.V., 734 F.3d 1315, 1323 (Fed. Cir. 2013) and Beech Aircraft Corp. v. EDO Corp., 990 F.2d 1237, 1248 (Fed. Cir. 1993)).

8. https://www.supremecourt.gov/search.aspx?filename=/docket/docketfiles/html/public/22-919.html.

9. Thaler v. Comptroller-General of Patents, Designs and Trademarks [2021] UKSC [0201] (appeal taken from Eng.), https://www.supremecourt.uk/cases/uksc-2021-0201.html.

10. Sam Tobin, UK Supreme Court Hears Landmark Patent Case Over AI "Inventor," Reuters (Mar. 2, 2023), https://www.reuters.com/technology/uk-supreme-court-hears-landmark-patent-case-over-ai-inventor-2023-03-02/.

11. Second Request for Consideration for Refusal to Resister A Recent Entrance to Paradise (Correspondence ID 1-3ZPC6C3; SR # 1-7100387071) (Feb. 14, 2022).

12. *See* Letter to Van Lindberg re Zarya of the Dawn (Registration #VAi001480196) (Feb. 21, 2023).

13. *Id.*

14. Complaint, Dkt. 1, Thaler v. Perlmutter, No. 1:22-cv-01564 (D.D.C., June 2, 2022).

15. Plaintiff's Combined Opposition to Defendant's Motion for Summary Judgment and Reply in Support of Plaintiff's Motion for Summary Judgments Motion for Summary Judgment, Dkt. 18, Thaler v. Perlmutter, No. 1:22-cv-01564 (D.D.C., Mar. 7, 2023).

16. Defendant's Response to Plaintiff's Motion for Summary Judgment and Cross Motion for Summary Judgment, Dkt. 17, Thaler v. Perlmutter, No. 1:22-cv-01564-BAH, 14-15 (citing Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53 (1884)).

17. *Id.* at 17 (citing Naruto v. Slater, 888 F.3d 418, 426 (9th Cir. 2018)).

18. *Id.* at 11 (citing 5 U.S.C. § 706).

19. Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence, 88 Fed. Reg. 16190-16194 (Mar. 16, 2023), https://www.govinfo.gov/content/pkg/FR-2023-03-16/pdf/2023-05321.pdf.

20. *Id.* at 16192.

21. *Id.*

22. *Id.* At 16193.

23. Request for Comments Regarding Artificial Intelligence and Inventorship, 88 Fed. Reg. 9492-9495 (Feb. 14, 2023); *see also* Kirsten Errick, The U.S. Patent and Trademark Office Seeks Public Comments on the Intersection of Artificial Intelligence and Inventorship, Nextgov (Feb. 14, 2023), https://www.nextgov.com/emerging-tech/2023/02/government-considers-whether-ai-can-invent-something-patentable/382956/.

24. *See* Errick, *supra* note 23.

25. *Id.* at 9495.

26. *Id.* at 9494; *see* Errick, *supra* note 23.

27. *See* W. Keith Robinson, Enabling Artificial Intelligence, 60 Hous. L. Rev. 331 (2022).

28. *Id.* at 342.