AI, Copyright, and Pseudo Art

Ioan-Radu Motoarcă[*]

This Article addresses the copyright regime of artistic works generated by artificial intelligence (AI). I argue that the law of authorship as developed by courts, together with the Intellectual Property Clause in the U.S. Constitution, entails that, if anyone is entitled to copyright ownership of these works, it is the AI itself. Arguments advanced in the literature that programmers, developers, or similarly situated humans should own the copyright instead are rejected. However, I argue further that countervailing policy considerations suggest that AI-generated works should remain in the public domain for the time being. In particular, the fundamental differences between AI-generated artworks and traditional artworks justify thinking of the former not as art, but rather as what I call "pseudo art." Considerations concerning the nature of pseudo art support the position of the U.S. Copyright Office, who has so far denied copyright protection to AI-generated material.

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[*]Associate, Ashman Law Offices, LLC.

Article Contents

Introduction

Consider the following literary production from OpenAI's ChatGPT:[1]

> **The Forgotten Melody**
> In a sleepy town nestled by the sea, an old piano sat neglected in the corner of a dusty attic. It had once played enchanting melodies that echoed through the halls of a grand mansion, but time had silenced its keys.
> One day, a curious girl named Lily discovered the forgotten instrument. She wiped away the layers of neglect and delicately pressed a key. A soft, melancholic sound filled the air, as if the piano yearned to be played again.
> Lily's fingers danced across the ivory, coaxing a haunting melody from the depths of the forgotten past. As the notes soared, the town awakened from its slumber. People gathered outside the attic, drawn by the ethereal music that rekindled memories long forgotten.
> From that day forward, the old piano was no longer abandoned. It became a source of joy and inspiration, filling the hearts of the townsfolk with hope and reminding them of the beauty that lies within forgotten places.

This is no Chekhov or Flannery O'Connor, but it certainly exhibits some of the characteristics that we generally associate with short stories, including a character and a plot. It looks rather like an extremely watered down version of a Brothers

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[1] To elicit this response, I gave ChatGPT the following prompt: "ChatGPT, please write a short story of no more than 150 words and give it a title."

Grimm tale. It is not exciting, but it is not gibberish either.[2] ChatGPT, the entity that produced the short story, is a chatbot owned by OpenAI, a company dedicated to the development of artificial intelligence (AI).[3] The publicly available ChatGPT model is based on the GPT-3.5 technology developed by OpenAI.[4] OpenAI has since developed GPT-4, the latest iteration of OpenAI's GPT large language model technology, which is available to users for a monthly fee. OpenAI advertises GPT-4 as "exhibit[ing] human-level performance on various professional and academic benchmarks,"[5] such as passing a simulated bar exam with scores around the top ten percent of human candidates.[6] The capacities of AI systems are on the rise, and, for better or worse, the use of AI will become more widespread in the future.

AI has been used to generate other types of artistic outputs as well. In the art world, abstract artist Harold Cohen developed AARON, a computer program that produces drawings and paintings, some of which were exhibited at the Tate Gallery in London, the Brooklyn Museum, and the Stedelijk Museum in Amsterdam.[7] Similarly, through a

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[2] In what follows, I will be assuming, for the sake of argument, that *The Forgotten Melody* meets the originality threshold for copyrightability, although that is probably a stretch. For samples of ChatGPT-generated poetry that likely do meet the originality threshold, see Jack Cushman, *ChatGPT: Poems and Secrets*, Harv. Libr. Innovation Lab (Dec. 20, 2022), https://lil.law.harvard.edu/blog/2022/12/20/chatgpt-poems-and-secrets [https://perma.cc/AA3S-DEBY]. As I discuss in Part VI, the fact that the story does not look like gibberish does not mean that it is actually not gibberish. In fact, on certain plausible assumptions about what it takes to *be* a short story, *The Forgotten Melody* will be gibberish.

[3] *See* Enterprise DNA Experts, *Who Owns Chat GPT: Unveiling the Company Behind the AI*, Enterprise DNA Blog (Apr. 26, 2023, 5:49 PM EDT), https://blog.enterprisedna.co/who-owns-chat-gpt [https://perma.cc/K5MR-6MBW].

[4] *Introducing ChatGPT*, OpenAI (Nov. 30, 2022), https://openai.com/blog/chatgpt[https://perma.cc/P5PK-JV72].

[5] *GPT-4*, OpenAI (Mar. 14, 2023), https://openai.com/research/gpt-4 [https://perma.cc/9FXA-H4Y6].

[6] *Id.*

[7] *See* David Levy, Robots Unlimited: Life In A Virtual Age 181 (2006).

project initiated by ING and the J. Walter Thompson agency in Amsterdam, an AI produced a painting in the style of Rembrandt, after conducting an in-depth analysis of almost 350 paintings of the master.[8] Likewise, in the field of music, DeepBach is an algorithm that has been trained to produce polyphonic music in the style of Johann Sebastian Bach.[9] Interesting developments have also occurred in sculpture and dance. The National Museum of Science and Technology in Stockholm, for example, recently exhibited The Impossible Statue, a work that various sources have touted as the first completely AI-generated statue.[10] And a team of researchers at Stanford developed EDGE, an AI capable of generating physically plausible dance moves that are "stylistically faithful to input music."[11]

In this Article, I focus on artistic outputs of AI systems that are perceptually indistinguishable from human artworks. I am neutral about the extent to which the analysis in this Article might apply to non-artistic outputs (such as journal articles, computer code, news stories, and so on). The question I address is who—if anyone—should own the copyright in AI-generated works. At the rate that AI is being

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[8] *See* Steve Schlackman, *Who Holds the Copyright in AI Created Art*, Artrepreneur (Sept. 29, 2020), https://artrepreneur.com/journal/the-next-rembrandt-who-holds-the-copyright-in-computer-generated-art [https://perma.cc/D6C6-SBLA].

[9] *See* Gaëtan Hadjeres et al., *DeepBach: A Steerable Model for Bach Chorales Generation*, arXiv1 (June 17, 2017), https://arxiv.org/abs/1612.01010 [https://perma.cc/L93H-HAHS].

[10] *See* Richard Whiddington, *The World's First A.I.-Generated Statue, Cobbling Together the Styles of Five Celebrated Sculptors, Has Landed in a Swedish Museum*, Artnet (May 24, 2023), https://news.artnet.com/art-world/impossible-statue-ai-generated-stockholm-museum-2308845 [https://perma.cc/G5C8-8QEG]; Doloresz Katanich, *What if Rodin and Michelangelo Met? AI-Generated Statue Holds the Answer*, Euronews (June 17, 2023), https://www.euronews.com/culture/2023/06/17/what-if-rodin-and-michelangelo-met-ai-generated-statue-holds-the-answer [https://perma.cc/AD2N-H2W8].

[11] *See* Jonathan Tseng et al., *EDGE: Editable Dance Generation From Music*, arXiv1 (Nov. 27, 2022), https://arxiv.org/abs/2211.10658 [https://perma.cc/GN2J-V5SH].

used to create artistic output, it will not be long before courts have to render decisions on the copyright ownership issue that will impact copyright law for decades to come.[12] This Article aims to articulate a framework for thinking about work authorship and copyright ownership of works produced by AI. To that end, I will discuss several proposals that have been made in the literature regarding copyright ownership of AI-generated works and advocate for the view that AI-generated works should (at least for the time being) remain in the public domain.

This Article proceeds in six parts. Part I offers a brief account of machine learning and discusses one specific application, namely ChatGPT. In Part II, I argue that there is a constitutional constraint on copyright ownership in U.S. law, namely that only actual authors are entitled to copyright protection. I also address the main exception to the constitutional constraint (i.e., the work-for-hire doctrine) and show that it cannot be used to circumvent the constraint. Given that only actual authors can be copyright owners, it is essential to know who is considered an author, according to established copyright law. Thus, in Part III, I identify two conceptions of authorship that have been developed by the courts: the "basic conception" of authorship and the "overseer conception" of authorship. In Part IV, I argue that these two conceptions of authorship are satisfied only by the AI itself, not by other entities (like AI programmers, data owners, or AI users). Consequently, if anyone is entitled to copyright in AI-generated works, it is the AI itself. In Part V, I discuss and reject the Copyright Office's arguments that current law prohibits AI-generated works from being copyrighted. Though I agree that such works should not be copyrighted, I do so for different reasons. Thus, I argue in Part VI that AI-generated works should remain in the public domain, as they lack the crucial historical character exhibited by traditional works of art. I call AI-generated works "pseudo

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[12] *See, e.g.*, Complaint at 2, Thaler v. Perlmutter, 1:22-cv-01564, 2023 WL 5333236 (D.D.C. Aug. 18, 2023). Thaler, an AI developer, applied for copyright registration of an AI-generated work, naming the AI as the author of the work and Thaler himself as the copyright owner. *Id.*

art" to distinguish them from actual, traditional art. Lastly, I conclude with a brief summary of my argument.

I. Transformers: ChatGPT

Since many of the AI tools used to create artistic products rely on machine learning,[13] it is worth discussing machine learning generally, before exemplifying the process with ChatGPT.

A leading textbook on machine learning defines it as "programming computers to optimize a performance criterion using example data or past experience."[14] So-called "supervised"[15] machine learning aims to solve a two-pronged problem: On the one hand, we are only interested in certain types of information (e.g., whether a certain email is spam, who the likely buyers of a certain product are, what the risk is that credit applicants will default). On the other hand, we often have a large amount of data that could be used to

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[13] *See* Robert A. Gonsalves, *BIG.art: Using Machine Learning to Create High-Res Fine Art*, TOWARDS DATA SCI. (Apr. 6, 2022), https://towardsdatascience.com/big-art-using-machine-learning-to-create-high-res-fine-art-7dd695f99788 [https://perma.cc/5UHA-8TPC]; Christopher McFadden, *The Rise of AI Art: What is It, and is It Really Art?*, INTERESTING ENG'G (Mar. 5, 2023), https://interestingengineering.com/culture/what-is-ai-generated-art [https://perma.cc/XTT9-T8HT].

[14] E. ALPAYDIN, INTRODUCTION TO MACHINE LEARNING 3 (2014).

[15] Supervised learning refers to a family of techniques whereby one specifies in advance an outcome variable of some sort (which could be discrete or real-valued), and then one tries to find a function of the inputs that will predict the behavior of the chosen variable. *See* COMM. ON THE ANALYSIS OF MASSIVE DATA ET AL., FRONTIERS IN MASSIVE DATA ANALYSIS 104 (2013). For examples of outcome variables, *see infra*, note 20. In unsupervised learning, the outcomes of interest are not specified in advance. The algorithm simply analyzes the data and aims to discover patterns in it. *See* KEVIN P. MURPHY, MACHINE LEARNING: A PROBABILISTIC PERSPECTIVE 9-10 (2012). ChatGPT uses a combination of supervised and unsupervised learning. *See* Gurpreet Saini, *Learn How ChatGPT for Machine Learning Works: A Beginner's Guide*, UNSTOP (Feb. 7, 2024), https://unstop.com/blog/chat-gpt-and-machine-learning [https://perma.cc/DNH4-VBM3].

predict the information we are interested in.[16] Inferring the right kind of functions from the data to the outputs of interest is beyond human intelligence, but AI models can be used to sift through the data, detect relevant patterns, and generate reliable predictions about the values of the outputs that we are interested in.[17]

Lehr and Ohm break down the process of machine learning into eight main steps: "problem definition, data collection, data cleaning, summary statistics review, data partitioning, model selection, model training, and model deployment."[18] The first seven steps may be conceptualized as one big stage of the process, which the authors call 'playing with the data,' while model deployment is dubbed 'the running model.'[19] In the first stages, large amounts of data are fed into the algorithm. The algorithm is trained on this data and, through this process, learns rules for making its predictions.[20] An algorithm is ordinarily run multiple times on the data and may be re-tuned and re-assessed several times.[21]

After going through the initial seven stages, which are generally implemented by data analysts and statisticians, the algorithm is ready to be deployed in a real environment. The deployment of the algorithm is usually carried out by software programmers and information technologists.[22]

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[16] ALPAYDIN, *supra* note 14, at 1-3.

[17] *Id.*

[18] David Lehr &Paul Ohm, *Playing with the Data: What Legal Scholars Should Learn About Machine Learning*, 51 U.C. DAVIS L. REV. 653, 655 (2017).

[19] *Id.*

[20] For instance, we might be interested in predicting whether a certain algorithm implemented in a self-driving car can distinguish between pedestrians, animals, or trees, in order to minimize the number of casualties caused by such vehicles. *See* Lehr & Ohm, *supra* note 18, at 673. Or, we might be interested in building algorithms that can distinguish between spam and legitimate emails. *See*, *e.g.*, Solon Barocas & Andrew D. Selbst, *Big Data's Disparate Impact*, 104 CALIF. L. REV. 671, 678 (2016).

[21] Lehr & Ohm, *supra* note 18, at 698.

[22] *Id.* at 701. Throughout this Article, I am using the terms 'programmers' and 'developers' to refer indiscriminately to persons who take part (whether by implementing statistical models, analyzing data, coding, or

ChatGPT, the focus of this section, is an example of a class of algorithms called "transformers."[23] ChatGPT is centered on natural-language processing, meaning that its purpose is to replicate human language.[24] It was trained specifically on a conversational dataset, using large language modeling. Large language models (LLMs) are "deep-learning algorithm[s] that can recognize, summarize, translate, predict and generate text and other content based on knowledge gained from massive data sets."[25]

The essential characteristic of transformers is that, once they are given a certain string of words, they generate probability distributions over all the possible next words.[26] For instance, if the initial input string into the algorithm is 'The Milky Way contains billions of _____', the transformer will calculate what the probability is that the next word is 'stars,' and will do that for all other possible words. So, it will also generate a probability that the next word is 'cars' or 'aliens.'

The transformer model represents each of the words in the input text as vectors, so the whole text is basically represented as a set of vectors.[27] These vectors encode a lot of information about the words and about their position in the text.[28] For

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other relevant activities) in preparing the AI to create works of the type under discussion.

[23] Ben Levinstein, *A Conceptual Guide to Transformers: Part I*, THE END OF RECKONING (Jan. 30, 2023), https://benlevinstein.substack.com/p/a-conceptual-guide-to-transformers [https://perma.cc/XW3F-3HFJ].

[24] SANDRA KUBLIK & SHUBHAM SABOO, GPT-3: BUILDING INNOVATIVE NLP PRODUCTS USING LARGE LANGUAGE MODELS 4 (2022).

[25] Sami Badri et al., *ChatGPT: Unlocking the Potential of Large Language Models*, CREDIT SUISSE 13 (Apr.11, 2024), https://www.credit-suisse.com/media/assets/microsite/docs/securities-research/chatgpt.pdf [https://perma.cc/C5DF-PHRG].

[26] Levinstein, *supra* note 23.

[27] *Id.* Vectors may be thought of as lists or columns of numbers. Generally, vectors are elements of certain mathematical structures (called 'vector spaces') that satisfy specific algebraic properties. *See, e.g.*, SERGE LANG, INTRODUCTION TO LINEAR ALGEBRA 88-89 (1986).

[28] Levinstein, *supra* note 23.

example, the vector for 'billions' may encode information about the word referring to a number, about the magnitude of that number, and so on.

Next, the transformer runs this set of vectors through so-called 'attention heads.' Attention heads are the most important innovation of transformers, and they are the only part of a transformer that allows for information to be moved from one vector to another.[29] They perform two essential tasks: (i) for any vector (word), the attention head determines what other vectors to pay attention to, as well as how much attention to pay, and (ii) the attention head copies information about the words identified as relevant over to the target word.[30] So, in a text like, 'This chess engine has sacrificed its queen every game of this round,' the information associated with the 'its' vector will be enriched more with information coming from the 'engine' vector (because 'its' refers back to 'this chess engine') than with information associated with the 'sacrificed' vector.

In performing its first task, the attention head assigns each word a query and a key. The query encodes what kind of information that token is searching for. For example, the word 'has' in the chess engine sentence is searching for a singular noun as subject. The key encodes what kind of information the word contains—e.g., the noun 'engine' might encode the information that it is singular, as opposed to plural.[31] The degree of matching between a word's query and another's key determines how much attention will be paid to the word with the key. For instance, a word like 'of' may end up assigning a low attention score to 'sacrificed' and a higher one to 'game.' Each attention head will have its own instructions as to how the queries and keys for each word are to be generated.[32] Once every word (vector) assigns an attention score to every other word, these scores are combined mathematically with each word's value (computed according to the instructions in the attention head) to

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[29] *Id.*
[30] *Id.*
[31] *Id.*
[32] *Id.*

determine how much information to move forward from one word to another.[33] In case the combination of attention score and value is 0, no information will be imported. But anything between 0 and 1 will affect some change in the new column of the target vectors.

After being enriched with the relevant information from previous words in the string, each vector is then run through a multilayer perceptron (MLP),[34] which is a type of neural network consisting of a layer of input nodes, a certain number of layers of hidden nodes (which process the input received from the input nodes), and an output layer.[35] The output of a node in the network is scaled by a certain weight and fed forward as input to the next layer of the network, until the output information is generated.[36] The process of running the vectors through the attention heads and the MLP is repeated a number times and, as a result, the transformer ends up generating the various probabilities for each potential word following a previously given bit of text.[37]

This brief account of the architecture of transformers should be enough to understand the copyright issues relating to AI-generated artworks. The works that are the result of processes like the ones discussed in this section are representative of the kinds of technical achievements that are beginning to raise questions for established copyright doctrine. Two important characteristics of the AI that is seemingly responsible for the creation of these works is that it does not process information in the same way that humans

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[33] *Id.*

[34] *Id.*

[35] M. W. Gardner & S. R. Dorling, *Artificial Neural Networks (the Multilayer Perceptron) – A Review of Applications in the Atmospheric Sciences*, 32 ATMOSPHERIC ENV'T 2627, 2628 (1998).

[36] *Id.* Multilayer perceptrons may be trained to adjust the weights assigned to the inputs until some desired correlation between inputs and outputs is reached. *Id.* at 2629.

[37] Levinstein, *supra* note 23.

do,[38] and that, in creating the works, it appears to be acting without much guidance from human beings, apart from the user-initiated prompts. I will elaborate on the latter feature in the legal discussion to follow, but it should be noted here that the seemingly autonomous character of AI like ChatGPT stems partly from its design, based on a multilayered deep-learning neural network.[39] Researchers have observed that deep-learning algorithms can adapt to new contexts, auto-correct their mistakes, and deploy self-sufficient learning techniques.[40] The notion of the relatively independent functioning of deep neural networks is also supported by the widespread opaqueness and inaccessibility of their inner processing to human control. The precise ways in which AI processes the input data to yield its outcomes is often beyond the reach of human interpretation.[41] In other words, we understand how to build deep neural networks (such as the

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[38] *See* Noam Chomsky et al., *The False Promise of ChatGPT*, N.Y. TIMES (Mar. 8, 2023), https://www.nytimes.com/2023/03/08/opinion/noam-chomsky-chatgpt-ai.html [https://perma.cc/2XCL-BR9G]. For a dissenting view, see Edward Lee, *Is ChatGPT a False Promise?*, BERKELEY NEWS (Mar. 19, 2023), https://news.berkeley.edu/2023/03/19/is-chatgpt-a-false-promise [https://perma.cc/J6GY-2W4L].

[39] *See* Alexandru Hutanu, *How ChatGPT Works and AI, ML & NLP Fundamentals*, PENTABLOG (Feb. 8, 2023), https://www.pentalog.com/blog/tech-trends/chatgpt-fundamentals [https://perma.cc/463K-RKF2]; Youssef Fenjiro, *ChatGPT & GPT 4, How it Works?*, MEDIUM (Apr. 17, 2023), https://medium.com/@fenjiro/chatgpt-gpt-4-how-it-works-10b33fb3f12b [https://perma.cc/3HCC-SJAL]. *See generally* Mohammad Mustafa Taye, *Understanding of Machine Learning with Deep Learning: Architectures, Workflow, Applications and Future Directions*, 12 COMPUTERS, no. 91, 2023. For deep learning in general, *see also* IAN GOODFELLOW ET AL., DEEP LEARNING (2016).

[40] Taye, *supra* note 39, at 3 ("If you can imagine a robot that learns on its own, that is what deep learning is like."). Machine learning in general has also been characterized as exhibiting autonomous behavior. *Id.* ("[M]achine learning is the ability to automatically adapt with little to no human intervention.").

[41] *See, e.g.*, Christian Janiesch et al., *Machine Learning and Deep Learning*, 31 ELECTRONIC MKTS. 685, 688 (2021) ("While some shallow ML [machine learning] algorithms are considered inherently interpretable by humans and, thus, white boxes, the decision making of most advanced ML algorithms is per se untraceable unless explained otherwise and, thus, constitutes a black box.").

LLM underlying ChatGPT), but we do not understand the ways in which these networks encode the information internally, or the internal processes they use to achieve learning. As Ben Levinstein points out,

> What the various attention heads pay attention to will change drastically with training. The information moved with attention, the way information gets encoded, the computation done by MLPs, and the way blocks from various layers interact and compose will also change. Furthermore, even if we get a bit of a handle on how individual parts of a transformer model work, we still would be a long way from understanding the model as a whole.[42]

Admittedly, these kinds of considerations are not decisive in settling the issue of AI autonomy, but they do indicate the reduced level of human control over the functioning of these algorithms—control being a key element in judgments concerning autonomous AI behavior.

II. Authorship and the Constitution

In this Part, I first discuss a constitutional limitation on copyright ownership, namely that only actual authors can possess initial copyright in a work. Next, I explore a *prima facie* exception to the constitutional constraint, the work-for-hire provisions of the 1976 Copyright Act. I then consider and reject the suggestion that the work-for-hire doctrine can be used to get around the constitutional limitation in the case of AI-generated works. Such works are subject to the constitutional constraint.

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[42] Ben Levinstein, *How to Think about Large Language Models. Part IV of A Conceptual Guide to Transformers*, THE END OF RECKONING (Feb. 7, 2023), https://benlevinstein.substack.com/p/how-to-think-about-large-language [https://perma.cc/A4CF-VAXX].

A. Only Authors can Have Initial Copyright in Works of Authorship

The U.S. Constitution stipulates that "[t]he Congress shall have Power . . . [t]o 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."[43] This clause, known variously as "the Copyright clause," "the Patent clause," "the Copyright/Patent clause," "the Progress clause" and so on,[44] has a bipartite structure. First, it states a power of Congress ("to promote the Progress of Science and useful Arts"), and second, it specifies a means of exercising that power ("by securing for limited Times to Authors . . . the exclusive Right to their respective Writings . . . ").[45]

Note that the second part of the clause empowers Congress to secure rights in their works "to Authors." The Constitution does not say that *only* authors are to have copyright in their works, but this is the most natural construction of the provision. And indeed, this is how courts have understood the clause. The Supreme Court has endorsed this reading (albeit, arguably, in dicta),[46] and the few lower courts that have addressed the issue agree, as do commentators.[47] Let us call this established reading of the

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[43] U.S. CONST. art. I, § 8, cl. 8.

[44] *See* Dotan Oliar, *Making Sense of the Intellectual Property Clause: Promotion of Progress as a Limitation on Congress's Intellectual Property Power*, 94 GEO. L.J. 1771, 1773 n.1, 1775 n.17, 1777 n.26, 1780 n.45 (2006).

[45] *See also id.* at 1774.

[46] *See* Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 351 (1991) ("[T]he courts uniformly inferred the requirement [of originality] from the fact that copyright protection may only be claimed by authors.") (internal quotes omitted)); Eldred v. Ashcroft, 537 U.S. 186, 201 n.5 (2003) ("The Framers guarded against the future accumulation of monopoly power in booksellers and publishers by authorizing Congress to vest copyright only in 'Authors.'").

[47] *See, e.g.*, L. Batlin Son, Inc. v. Snyder, 536 F.2d 486, 490 (2d Cir. 1976) ("[C]onstitutionally, copyright protection may be claimed only by 'authors.'"); DAVID NIMMER, NIMMER ON COPYRIGHT § 1.06[A] (2021) ("[U]nder the Constitution, only an 'Author' is entitled to copyright protection . . . ."); Sherry Mfg. Co. v. Towel King of Fla., 753 F.2d 1565, 1568 (11th Cir. 1985) ("[U]nder the Constitution only an 'author' is entitled to copyright protection." (citing *Nimmer on Copyright*)); Ralph D.

Copyright Clause 'the Constitutional Constraint,' and formulate it as follows: Under the U.S. Constitution, only authors are entitled to copyright law protection.[48]

The Constitutional Constraint states a necessary condition for copyright protection. In accordance with this constraint, the 1976 Copyright Act provides that "[c]opyright protection subsists . . . in original works of authorship fixed in any tangible medium of expression . . . ,"[49] and that, furthermore, "[c]opyright in a work protected under this title vests initially in the author or authors of the work."[50] The Act, just like the Constitution, envisages copyright protection only for authors, a view that also been confirmed by courts and legal scholars alike.[51]

Clifford, *Intellectual Property in the Era of the Creative Computer Program*, 71 TUL. L. REV. 1675, 1700 (1997) ("[T]he Constitution requires that patents and copyright be extended for a limited time, only to 'authors' or 'inventors,' and only for proper purposes.").

[48] Alternatively, we could formulate the Constitutional Constraint in terms of 'works of authorship' instead of 'authors.' I prefer the 'author' formulation in the present context. But not much hangs on this distinction here.

[49] 17 U.S.C. § 102(a).

[50] 17 U.S.C. § 201(a).

[51] Interpreting § 102(a) of the Act, the Eleventh Circuit stated that, "[a]s this provision makes clear, 'authorship' is central to the statutory scheme. Only 'original works of authorship' are eligible for copyright protection." Code Revision Comm'n ex rel. Gen. Assembly of Ga. v. Public.Resource.org, Inc., 906 F.3d 1229, 1236 (11th Cir. 2018). *See also* Lesley v. Spike TV, 241 F. App'x 357, 358 (9th Cir. 2007) ("Copyright protection is available only for 'original works of authorship.'"); We Shall Overcome Found. v. Richmond Org., 221 F. Supp. 3d 396, 407 (S.D.N.Y. 2016) ("If they are not the authors, the Defendants cannot claim copyright protection."); Vernor v. Autodesk, Inc., 621 F.3d 1102, 1106 (9th Cir. 2010) ("Copyright is a federal law protection provided to the authors of 'original works of authorship' . . . ."). Scholars have made the same point. *See* Bruce E. Boyden, *Emergent Works*, 39 COLUM. J.L. & ARTS 377, 379 (2016) ("The Copyright Act of 1976, like the copyright acts that preceded it, implements the constitutional grant by providing exclusive rights only to works created by authors."); Robert Yu, *The Machine Author: What Level of Copyright Protection Is Appropriate for Fully Independent*

The Constitutional Constraint and its implementation in the Copyright Act are fundamental to how we determine who owns copyright in AI-generated works. It is essential to note that the Constitutional Constraint entails that, before we can determine who should have a copyright in such work, we need to know who the actual author of the work is. Consequently, it would be pointless to ask normative questions about whether an entity "should" have copyright in a work if that entity, as a matter of fact, is not an actual author.

Elementary as it may look, this observation concerning the order of inquiry (first we need to determine who the actual author is, and then we can decide the copyright ownership issue) seems to have eluded a number of commentators, who sometimes speak as if the one and only question is one of policy, namely who (among the programmer, the AI itself, the data owner, the user, or some combination of these) *should* have copyright in the work.[52] For example, Samantha Hedrick has summed up part of the debate among theorists as follows:

> Previous scholarship has focused primarily on the push and pull between the claims of the AI and the claims of the humans by exploring arguments that would support a claim that the AI itself should be deemed the author of computer-generated works. In discussing the claims of the human actors, the debate has centered around which human *should* 'win' the copyright instead. . . . When discussing computer-generated works, many scholars have focused on whether the algorithm itself *ought* to be recognized as the author of an AI-generated work.[53]

Computer-Generated Works?, 165 U. Pa. L. Rev. 1245, 1253 (2017) ("[O]nly the author is eligible for copyright protection").

[52] *See* Samantha Fink Hedrick, *I "Think," Therefore I Create: Claiming Copyright in the Outputs of Algorithms*, 8 N.Y.U. J. Intell. Prop. & Ent. L. 324, 329 (2019).

[53] *Id.* at 328, 333 (emphasis added). I do not want to attribute this sort of approach to Hedrick herself.

Conceived in these terms, the debate over copyright in AI works is entirely wrong-headed. It doesn't matter who "should be" the author or who "ought to be" the author according to whatever copyright policies we end up adopting. What matters is who actually *is* the author, because only that entity can receive copyright protection. To begin the inquiry by asking normative questions like the ones in the quoted passage is to miss the point of the Constitutional Constraint.[54]

That said, there is one statutory provision that, at least *prima facie*, seems to be in violation of the Constitutional Constraint, namely the grant of authorship status to employers in the context of works made for hire in § 201(b) of the Copyright Act.[55] Section 101 of the Copyright Act defines the term 'work made for hire' as:

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[54] This practice appears to be ubiquitous in legal scholarship. *See* Arthur R. Miller, *Copyright Protection for Computer Programs, Databases, and Computer-Generated Works: Is Anything New Since CONTU?*, 106 HARV. L. REV. 977, 1058 (1993) ("Although commentators have differed as to who should be considered the author of a computer-generated work, they seem to agree that it should be a human being or legal entity . . . ."); Kalin Hristov, *Artificial Intelligence and the Copyright Dilemma*, 57 INTELL. PROP. L. REV. 431, 443 (2017) ("There are three possible parties which may have claims to the copyright of AI generated works: AI programmers; owners (large companies and financial investors in the AI sector); and end users. When determining the best possible author, it is necessary to consider the overall social benefit of the copyright attribution process."); James Grimmelmann, *There's No Such Thing as a Computer-Authored Work - And It's a Good Thing, Too*, 39 COLUM. J.L. & ARTS 403, 404 (2016) ("My view is that the idea of computer-*authored* works responds to perceived problems of deciding who should be considered the authors of computer-*generated* works."); Ana Ramalho, *Will Robots Rule the (Artistic) World? A Proposed Model for the Legal Status of Creations by Artificial Intelligence Systems*, 21 J. INTERNET L. 12, 18 (2017) ("In other words, the AIs [sic] is the author in factual terms, but should it be the author in legal terms?"); Atilla Kasap, *Copyright and Creative Artificial Intelligence (AI) Systems: A Twenty-First Century Approach to Authorship of AI-Generated Works in the United States*, 19 WAKE FOREST INTELL. PROP. L.J. 335, 338 (2019) ("The final section proposes a solution to who should be accepted as the author of Al-generated works that better serves constitutional purposes . . . .").

[55] 17 U.S.C. § 201(b).

(1) a work prepared by an employee within the scope of his or her employment; or

(2) a work specially ordered or commissioned for use as a contribution to a collective work, as a part of a motion picture or other audiovisual work, as a translation, as a supplementary work, as a compilation, as an instructional text, as a test, as answer material for a test, or as an atlas, if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire.[56]

Importantly for our discussion, the Act further stipulates that "[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."[57] This provision gives the copyright directly to a non-author (either the employer, or the person for whom the work was made), thereby appearing to violate the Constitutional Constraint. Therefore, it might be argued that, should it turn out that data owners or AI programmers are not actually authors of an AI-produced work, we need not worry. Rather, we could decide to give them copyright in the work anyway, since the work-for-hire provision shows that non-authors can also be vested with initial copyright.

This argument may be understood in two ways. First, the argument may be that, even if AI-produced works are not works for hire, § 201(b) serves as an example of the general premise that it is permissible, as an exception to the Constitutional Constraint, to vest copyright in non-authors. After all, if non-authors can have copyright under the work-for-hire doctrine, why not also in the case of AI-produced works? Alternatively, some commentators have suggested that AI-produced works should be considered works for

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[56] 17 U.S.C. § 101.
[57] 17 U.S.C. § 201(b).

hire.[58] According to this suggestion, we need not fashion another exception to the Constitutional Constraint: we are only applying the work-for-hire doctrine to a new type of works. Neither of these views is appealing. To see why, we need to address the constitutionality of the work-for-hire provisions of the 1976 Copyright Act. The next section is dedicated to this discussion, while the following section responds directly to the two arguments discussed above.

B. The Constitutionality of § 201(b) of the Copyright Act

The constitutional credentials of § 201(b) of the Copyright Act are dubious. Granting authorship status to non-authors has been universally described by the Supreme Court, lower federal courts, and commentators as an exception to the principle that only authors are protected by copyright.[59] How to justify this departure from the constitutional mandate is far from straightforward, however. In his dissent in *Scherr v.*

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[58] *See* Shlomit Yanisky-Ravid, *Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era—The Human-like Authors are Already Here—A New Model*, 2017 MICH. ST. L. REV. 659, 707-13 (2017); Annemarie Bridy, *Coding Creativity: Copyright and the Artificially Intelligent Author*, 5 STAN. TECH. L. REV. 1, 24-27 (2012); Hristov, *supra* note 54, at 445-47.

[59] Cmty. for Creative Non-Violence v. Reid, 490 U.S. 730, 737 (1989) ("As a general rule, the author is the party who actually creates the work, that is, the person who translates an idea into a fixed, tangible expression entitled to copyright protection. § 102. The Act carves out an important exception, however, for works made for hire."); Vaad L'Hafotzas Sichos, Inc. v. Krinsky, 133 F. Supp. 3d 527, 533 (E.D.N.Y. 2015) ("The work-for-hire doctrine is universally described as an exception to the usual rule of authorship."); Horror Inc. v. Miller, 15 F.4th 232, 241 (2d Cir. 2021) ("Because a 'work made for hire' is a statutory exception to the general rule of author-ownership of copyright, the party claiming the exception bears the burden of proving that the exception applies."); Lulirama Ltd. v. Axcess Broad. Services, 128 F.3d 872, 876 (5th Cir. 1997) ("However, the Act creates an exception to this general rule that authorship vests in the creator for 'works made for hire.'"); Yanisky-Ravid, *supra* note 58, at 708; Ryan Vacca, *Work Made For Hire – Analyzing the Multifactor Balancing Test*, 42 FLA. ST. U. L. REV. 197, 198 (2017).

Universal Match Corporation,[60] Judge Friendly expressed concern that a blanket grant of copyright to employers (as opposed to the real authors) may not be constitutional.[61] The issue in the case was whether the copyright in a statue created by two soldiers while in the army belonged to the U.S. Government or to the actual creators.[62] The majority held that the copyright belonged to the U.S. Government under the work-for-hire doctrine.[63] In dissent, Judge Friendly observed that, although there are situations in which the employer owning the copyright is consistent with the policies underlying the Copyright Act, that may not *always* be the case: "[T]he Constitution, Art. I, § 8, authorizes only the enactment of legislation securing 'authors' the exclusive right to their writings. It would thus be quite doubtful that Congress could grant employers the exclusive right to the writings of employees regardless of the circumstances."[64]

According to Judge Friendly, this particular case could not be squared with the policies underlying the work-for-hire doctrine because the Government was not the creative force behind the production of the statue (in which case the Government could rightly have been considered the author of the statue).[65] Nor did it act as an employer in a way comparable to a music publisher hiring someone to write songs while the publisher retains copyright in the songs, or a company hiring an independent contractor to produce a work on the understanding that the purchaser of the contractor's services will retain copyright in the work (in which case the parties could be understood to have agreed that the purchaser will own the copyright through contractual bargaining).[66] In Judge Friendly's view, the case of two soldiers who happen to

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[60] 417 F.2d 497 (2d Cir. 1969). The case was decided under the 1909 Copyright Act, which specified that "the word 'author' shall include an employer in the case of works made for hire." Copyright Act of 1909, Pub. L. No. 60-349, § 26, 35 Stat. 1075 (1909).

[61] 417 F.2d at 502.

[62] *Id.* at 498.

[63] *Id.* at 500.

[64] *Id.* at 502 (Friendly, J., dissenting).

[65] *Id.*

[66] *Id.*

be good at building clay models of statues and end up building a real statue on commission by the army, but where (i) nobody envisioned their services to be so employed at the time of joining the army, (ii) nobody considered the issue of copyright at all when the soldiers started their army service, and (iii) the only pay they received was "nothing more than meager military pay," cannot be compared by the court to an artist selling his services to an employer with full knowledge of the fact that she is being hired to create a work, and that the copyright will belong to the employer.[67] Why then should the Government automatically be considered the "author" (as the Copyright Act provides) of the statue in such a case?

If Judge Friendly is correct in his analysis, then § 201(b)—in making the employer the author of the work[68] and giving her the copyright in seemingly all circumstances—sits under a constitutional cloud.

Moreover, even the work-for-hire cases that Judge Friendly found unproblematic (such as when someone purchases artistic works or services from an artist) need more doctrinal support than merely observing that they are consistent with the policy aims of the Copyright Act. In all fairness, Judge Friendly cites a potential doctrinal justification, coming from David Nimmer's copyright treatise,[69] to which we now turn.

In more recent editions of the treatise, Nimmer takes up Judge Friendly's challenge and agrees with him up to a point: "If Congress may 'deem' an employer to be the 'author,' then

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[67] *See id.* at 502-03.

[68] Hristov points out that "under the provisions of the made for hire doctrine, the employer is not the actual author of the work, but is only considered as such to satisfy requirements of the law." Hristov, *supra* note 54, at 447. Clifford makes the same point. *See* Clifford, *supra* note 47, at 1683 ("Congress was careful to indicate that the employer is not the author-in-fact, but is only 'considered' to be the author by law."). This observation is correct, but unhelpful in explaining why the Act grants a non-author (the employer) copyright in the first place, in a *prima facie* violation of the Constitution.

[69] *Scherr*, 417 F.2d at 502.

there would seem to be no limit to the other classes of persons (besides the true author) who may be the recipient of Congressional beneficence . . . . To that extent, Judge Friendly's critique holds water."[70] But, according to Nimmer, there is a way out of this conundrum. The solution is to interpret § 201(b) of the Copyright Act as creating an *implied* assignment of rights from the actual author (the employee) to the employer.[71] In other words, it is as if the actual author was initially vested with copyright in her works (just as the Constitution mandates), but then implicitly transferred these rights to the employer by operation of the statute. This implicit assignment creates a presumption of copyright ownership by the employer, but the presumption is rebuttable, should the parties agree otherwise in writing.[72]

This interpretation of the statute comports with judicial practice, which has always recognized employment contracts transferring copyright from an employee to the employer.[73] It has been said that, "[t]he work-for-hire statute has the same effect as prior private contractual provisions vesting copyright ownership in the employer, except that it saves the employer from having to add express contract language regarding transfer of copyright ownership."[74]

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[70] NIMMER, *supra* note 47, at § 1.06[C].

[71] *Id.*

[72] 17 U.S.C. § 201(b). *See also* NIMMER, *supra* note 47, at § 5.03[D] ("If such presumption were not rebuttable, a serious issue of constitutional validity would be raised."). Note that the parties cannot agree that a work which is, as a matter of fact, a work for hire is not a work for hire, and vice versa.

[73] *See* Suzanna Sherry & Paul J. Heald, *Implied Limits on the Legislative Power: The Intellectual Property Clause as an Absolute Constraint on Congress*, 2000 U. ILL. L. REV. 1119, 1190 (2000).

[74] *Id.*; *see also* H. COMM. ON THE JUDICIARY, 87TH CONG., 1ST SESS., COPYRIGHT LAW REVISION: REPORT OF THE REGISTER OF COPYRIGHT ON THE GENERAL REVISION OF THE U.S. COPYRIGHT LAW 85 (1961) [hereinafter "1961 Report"] ("The rule has long been established, both under the common law and under the statute, that the rights in a work produced by an employee in the course of his employment are vested in the employer. This rule has been based on several grounds: (1) the work is produced on behalf of the employer and under his direction; (2) the employee is paid for the work; and (3) the employer, since he pays all the costs and bears all the risks of loss, should reap any gain.").

But does this solve the problem of the constitutionality of § 201(b)? Perhaps, but there is one final snag: the employee irrefutably remains the author of the work. Copyright *ownership* may be transferable from the employee to the employer, but *authorship* stays with the employee.[75] There are legal consequences that flow from being the *author* of a work for hire (e.g., consequences regarding the duration of copyright, or termination of transfers rights) which are over and above copyright *ownership*. Those consequences cannot be altered by agreement between the parties.[76] The question, therefore, is whether or not this statutory arrangement is constitutional, given that the presumption of employee authorship cannot be rebutted.[77] Nimmer's reply is, "Probably not, as the employer is not thereby favored over the employee regardless of the intent of the parties."[78] However, Nimmer does not see a problem here because (i) the parties can agree on copyright ownership, and (ii) as for the un-modifiable legal consequences of authorship status, they do not favor the employer over the employee.[79]

I do not find this convincing. First, the statutory provisions on duration and termination of transfers[80] appear to depend on whether a work is made for hire, not on who is deemed to be the work's author.[81] If so, it is not clear what is achieved by

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[75] *See* NIMMER, *supra* note 47, at § 1.06[C].

[76] *Id.*

[77] The fact that employers are considered authors does not directly contradict my formulation of the Constitutional Constraint. But it does contradict the implication of the Constraint (as discussed in the previous Section) that only *actual* authors (i.e., actual creators, not employers or the like) are candidates for initial copyright in the work.

[78] *Id.*

[79] *Id.*

[80] *See* 17 U.S.C. §§ 203, 302, 304.

[81] The 1961 Report noted that the 1909 Copyright Act provision in § 26 that "author" includes employers in the case of works for hire had been criticized on precisely the ground that employers are not actually authors. The Report therefore suggested that employers should not be designated as "authors," but that copyright *ownership* should vest in them. The suggestion was later rejected owing to the "great advantages of

deeming the employer the "author" of the work for hire. Second, Nimmer's treatise itself recognizes that "[t]he same results could have been achieved even if the employee rather than the employer were deemed the 'author.'"[82] But it is hardly apparent why the ends render the means constitutional. And third, Rochelle Cooper Dreyfuss has pointed out that Nimmer's focus on copyright duration and on termination of transfer rights (i.e., "who gets how much for how long"[83]) seems to assume that only financial matters are relevant to the constitutional question, when in fact "furthering the constitutional goal requires more than a focus on the purely remunerative components of copyright ownership."[84] If one agrees with Dreyfuss, there may be aspects of authorship that are not measurable monetarily, and which we might want to preserve for actual authors, as opposed to employers. In that case, it is not true that (as Nimmer claims) being deemed an 'author' by the statute does not favor one party over the other.[85]

For these reasons, I argue, the matter of the constitutionality of § 201(b) of the Copyright Act remains controversial. It appears that courts have not yet addressed this issue head on, and in the very limited number of instances where the question arose, courts have not been too illuminating. The Second Circuit, for example, after rejecting Judge Friendly's justification of the work-for-hire doctrine, said only the following in dicta: "Though the United States is perhaps the only country that confers 'authorship' status on

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convenience and simplicity" of considering employers to be authors (what the great advantages are is left as an exercise for the reader to figure out), and also because of worries that "failure to identify the employer as 'author' might have unintended consequences as, for example, with respect to the protection of motion pictures in foreign countries." H. COMM. ON THE JUDICIARY, 89TH CONG., 1ST SESS., SUPPLEMENTARY REPORT OF THE REGISTER OF COPYRIGHT ON THE GENERAL REVISION OF THE U.S. COPYRIGHT LAW 66 (1965).

[82] NIMMER, *supra* note 47, at § 1.06[C].

[83] Rochelle Cooper Dreyfuss, *The Creative Employee and the Copyright Act of 1976*, 54 U. CHI. L. REV. 590, 604 (1987).

[84] *Id.*

[85] Professor Dreyfuss herself advocates for a limitation of the work-for-hire doctrine to the bounds prescribed by Judge Friendly. *See id.* at 638.

the employer of the creator of a work made for hire . . . its decision to do so is not constitutionally suspect."[86] The court provided no further explanation of the matter. In general, and without addressing the constitutional issue directly, courts have taken up (and often cited) Nimmer's view that § 201(b) (or its predecessor, § 26 of the 1909 Copyright Act) creates a presumption of copyright *ownership* in favor of the employer, which can be rebutted by contrary evidence that the parties agreed otherwise.[87] This, however, does not explain why it is constitutional that the Act deems the employer to be the *author* in all circumstances, without authorship being negotiable in the way that ownership is.

Let's take stock. We have seen that the Constitution imposes a restriction on who can have initial copyright in works of authorship. Under the Constitution, only authors can have initial copyright in a work. In this Section, we have considered the work-for-hire doctrine, which seems to represent a *prima facie* exception to the constitutional limitation of copyright to authors. The analysis of the work-for-hire statutory provisions has led us to the conclusion that constitutional problems persist, and that Judge Friendly's worries in *Scherr* have not been answered satisfactorily. Now we can turn to the idea that the work-for-hire doctrine could circumvent the Constitutional Constraint to afford copyright to entities who turn out not to be the actual authors of the respective works (such as programmers or data owners). I discuss two ways of understanding this view and show why they do not work.

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[86] Childress v. Taylor, 945 F.2d 500, 507 n.5 (2d Cir. 1991) (internal citation omitted).

[87] *See, e.g.*, Warren v. Fox Family Worldwide, Inc., 171 F. Supp. 2d 1057, 1071 n.38 (C.D. Cal. 2001); May v. Morganelli-Heumann Assocs., 618 F.2d 1363, 1368 (9th Cir. 1980); Brattleboro Publ'g Co. v. Winmill Publ'g Corp., 369 F.2d 565, 567 (2d Cir. 1966). *See generally* NIMMER, *supra* note 47, at § 5.03[D] (citing cases). Insofar as the cases cited in *Nimmer* either explicitly cite Nimmer's treatise or can be traced back to Nimmer's treatise, their reasoning can only be as strong as Nimmer's.

C. Circumventing the Constitutional Constraint?

As I laid out in Section II.A *supra*, the first way to use the work-for-hire doctrine to get around the Constitutional Constraint is to suggest that, just as the work-for-hire doctrine is an exception to the Constitutional Constraint in that it deems non-authors (namely, employers) to be authors for purposes of the Copyright Act, we can likewise fashion another exception for non-authors (this time, programmers, data owners, users, or what have you) that we could nonetheless deem authors. In other words, the work-for-hire doctrine functions as precedent, showing that actual authors are not always legal authors as well.

This will not work. Given that serious doubts persist as to the constitutionality of the work-for-hire doctrine,[88] it would not be wise to create yet another exception for non-authors just because it seems convenient to solve the problems generated by AI. Here, novelty does not necessitate a change in our interpretation of the law. As Judge Friendly noted long ago, in both the Constitution and the Copyright Act "the emphasis is on protecting the 'author' and . . . any principle depriving him of copyright and vesting this in another without his express assent must thus be narrowly confined."[89]

Indeed, while the work-for-hire exception is at least grounded in the long-standing practice of artists contractually granting copyright in their works to employers in return for monetary gain, there would be no such historical basis for an AI-focused variant of the exception. The Copyright Act, as we have seen, can be interpreted as effecting an implied assignment of rights to the employer, which can be rebutted by an express agreement otherwise. But a new exception

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[88] As discussed *supra* in Section II.B.

[89] Scherr v. Universal Match Corp., 417 F.2d 497, 502 (2d Cir. 1969) (Friendly, J., dissenting). One might object that we do not need to worry about the constitutionality of the work-for-hire doctrine at all, because Congress might have enacted 17 U.S.C. § 201(b) not under the Copyright Clause powers, but instead under the Commerce Clause, for instance. This objection is a non-starter, as the scholarly consensus (supported by case law) is that Congress cannot circumvent constitutional limitations by merely citing the Commerce Clause. *See* Sherry & Heald, *supra* note 73, at 1120 n.7.

fashioned for non-authors of AI-generated works—here, programmers and data owners, among others—would not fit the implied assignment model. Simply put, such an exception lacks the justificatory weight that supports the work-for-hire doctrine.

The second way to try to circumvent the Constitutional Constraint suggests that, since the work-for-hire doctrine is already firmly established in the law, we might as well use it to solve the puzzles of AI-generated artwork. Professor Annemarie Bridy, for instance, is very explicit that this is the path forward.[90] As she correctly points out, "[t]he [work-for-hire] doctrine is a legal fiction that effectuates a policy choice to bypass the author-in-fact to vest copyright elsewhere."[91] Accordingly, Bridy proposes that, in the case of works actually authored by AI, we should consider the programmer to be the employer under the work-for-hire doctrine.[92] That way, we can avoid vesting copyright in a machine, thereby ascribing to a machine the ability to respond to incentives.[93]

But this solution is unsatisfactory for several reasons. As I have already noted, the work-for-hire doctrine has been adopted to acknowledge the fact that authors often make contracts whereby they assigned their rights in the work to an employer who hired them to create the work. Stretching the doctrine to cover AI-generated works is pushing matters too far. With AI, there is no relationship between an employer and an employee hired to produce a work: the AI was not hired by the programmer to make art. Neither could the AI have refused to assign its rights in the work to the

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[90] Bridy, *supra* note 58, at 26 ("The work made for hire doctrine is a more fitting framework within which to situate the problem of AI authorship because it represents an existing mechanism for directly vesting ownership of a copyright in a legal person who is not the author-in-fact of the work in question.").

[91] *Id.*

[92] *Id.*

[93] *Id.*

programmer.[94] There is no contractual bargaining of the sort that the work-for-hire doctrine was meant to protect. Consequently, there is no clear sense in which we can map the employer-employee relationship onto to the programmer-AI relationship.[95] Bridy acknowledges that the work for hire provisions would have to be modified to accommodate her approach, because, as written, they are not applicable to AI-generated works.[96] She therefore suggests that the definition of "work made for hire" in § 101 be amended to include "a work generated by a computer in circumstances such that there is no human author of the work."[97] Section 201(b) would then, un-amended, vest copyright ownership in the programmer or in another person, depending on the details of the case.[98]

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[94] Recall Nimmer's remarks, discussed *supra* in Section II.B, that a non-rebuttable presumption of authorship vesting in the employer would be problematic from a constitutional standpoint. Unlike a human being, AI that is actually the author of a work does not have the power to oppose its presumptive "employer" (the programmer, say) and keep its copyright rights by contractual agreement.

[95] It would make as much sense to vest copyright in the programmer as it would to vest copyright for works created by children in the children's parents. After all, why not treat parents as "employers" until children reach a certain age, thereby avoiding problems associated with minor-created works (like the accidental release of private or confidential information during the application process with the U.S. Copyright Office)? Of course, there is no reason to do either of these things. Currently, minors can claim copyright. *See* U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 405.2 (3d ed. 2021).

[96] Bridy, *supra* note 58, at 27.

[97] *Id.*

[98] *Id.* Bridy points out that the United Kingdom and New Zealand have adopted statutes that vest copyright in computer-generated works in "the person by whom the arrangements necessary for the creation of the work are undertaken," who is also deemed the "author" of the work. *Id.* Nevertheless, the United Kingdom and New Zealand, unlike the United States, do not have to work around a constitutional limitation like the Copyright Clause of the U.S. Constitution. *See also* Miller, *supra* note 54, at 1053 ("The United States may not have as clean a slate upon which to write legislation as does the United Kingdom. This country's Constitution permits the federal government to exercise only those powers expressly delegated to it by the instrument. Thus, the national government's copyright power is circumscribed by the Copyright Clause, one provision

But why go to all this trouble of extending the work-for-hire doctrine to a context that it was not meant for? The problems supposedly averted by this maneuver are more imaginary than real. First, Bridy acknowledges that various non-human entities have been endowed with legal personality, such as corporations, government entities, or ships (in admiralty law).[99] So, recognizing AI systems as legal persons would not be much of a stretch. Furthermore, Bridy does not explain why amending the work-for-hire doctrine is superior to the view that no one is entitled to copyright in the case of AI-generated works. Why does anyone at all have to have copyright in these works, and why isn't the public domain solution a viable option? A defense of a Bridy-type view needs to provide arguments for choosing this theory over alternatives, particularly over the public-domain view.[100]

Similar concerns apply to Bridy's second worry, namely that it does not make sense to vest copyright in the AI itself because the AI does not need any incentives to create. This is true, but this is only a problem if we presume that *someone* must have copyright in AI-generated works. If AI-generated works fall into the public domain as soon as they are created, then the fact that AI does not respond to incentives is entirely irrelevant.[101]

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of which limits Congress's ability to bestow copyright protection to 'Authors.'").

[99] Bridy, *supra* note 58, at 21 n.157.

[100] I will return to the public domain question later. For further criticism of Bridy's view, to the effect that treating AI as authors may ultimately end up eroding the concept of authorship, see Carys Craig & Ian Kerr, *The Death of the AI Author*, 52 OTTAWA L. REV. 33, 61-62 (2021).

[101] The considerations adduced in this Section against Bridy's view also apply to similar proposals that have been made in the literature. Kalin Hristov, for example, has suggested that we re-interpret the words "employer" and "employee" in the work-for-hire provisions so that an employer is "someone who employs the services of another entity in order to achieve a goal or complete a task." Hristov, *supra* note 54, at 446. According to Hristov, this would enable us to deem AI developers "employers," and the AI itself would be an "employee." The idea behind this view is to incentivize developers to create new useful AI. Note,

To conclude, the attempts at circumventing the Constitutional Constraint by means of the work-for-hire doctrine are not particularly persuasive. We cannot bypass a constitutional requirement by creating new legal exceptions or by conveniently extending current exceptions to suit problematic cases. Therefore, any account of AI-generated works must consider the Constitutional Constraint and thereby limit copyright in such works to their actual authors. Part III addresses the issue of what an author is, according to current law.

III. The Law of Authorship

Now that we have determined that only authors are entitled to copyright protection, let us turn to the question of who exactly counts as an author, according to the law. The 1976 Copyright Act does not define "author," so we need to look at how this concept has been interpreted by courts.

The concept of authorship throughout much of copyright law, as reflected in early court decisions, originates in the Romantic notion of the author as the creator of original works of imagination.[102] This conception of the 'author' is a fairly recent creation, going back to the eighteenth century.[103] Before then, the author was conceived more as a craftsman

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however, that a straightforward reading of Hristov's definition of "employer" would yield the result that the *user* is in fact the "employer," not the *developers*. It is the user who employs the services of the AI to create short stories and other art. At the very least, the user's claim to employer status does not seem less viable, *prima facie*, than that of the developers'.

[102] *See* Peter Jaszi, *Toward a Theory of Copyright: The Metamorphoses of "Authorship"*, 1991 DUKE L.J. 455, 459, 480-81 (1991).*See generally* Martha Woodmansee, *The Genius and the Copyright: Economic and Legal Conditions of the Emergence of the 'Author'*, 17 EIGHTEENTH-CENTURY STUD. 425 (1984) [hereinafter Woodmansee, *Genius and Copyright*] (discussing the Romantic notion of authorship); Martha Woodmansee, *On the Author Effect: Recovering Collectivity*, 10 CARDOZO ARTS & ENT. L.J. 279, 279-80 (1997) (same).

[103] *See* Woodmansee, *Genius and Copyright*, *supra* note 102, at 426. Other historians place the origin of the author as originator of the work and owner of rights in it as early as the thirteenth century. *See* Daniel Gervais, *The Machine as Author*, 105 IOWA L. REV. 2053, 2073 (2020).

who merely applied pre-established rules to create new works, or as someone inspired by divinity to produce artistic masterpieces.[104] In other words, before the beginning of the Romantic period, the author was not conceptualized as someone who might own rights in her intellectual productions.[105] But once Romanticism popularized the image of the author as demiurge, it was here to stay.[106]

This notion of the author as all-powerful creator can be detected in the foundational pronouncement of the U.S. Supreme Court in the area of copyright authorship, *Burrow-Giles Lithographic Co. v. Sarony*.[107] The suit was occasioned by a dispute between Napoleon Sarony, a celebrity photographer, and Burrow-Giles, a lithographic company.[108] Sarony had been sought out by Oscar Wilde for several publicity photographs to be used on Wilde's tour of the United States. Sarony took more than twenty pictures of Wilde and registered them with the Copyright Office.[109] Later, Burrow-Giles Lithographic sold 85,000 copies of one of Sarony's photos, 'Oscar Wilde No. 18', without Sarony's authorization, sparking the suit.[110] Sarony won in federal

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[104] Woodmansee, *Genius and Copyright*, *supra* note 102, at 426-27.

[105] *See* Mark Rose, *The Author as Proprietor:* Donaldson v. Becket *and the Genealogy of Modern Authorship*, 23 REPRESENTATIONS 51, 54 (1988) ("The distinguishing characteristic of the modern author . . . is that he is a proprietor, that he is conceived as the originator and therefore the owner of a special kind of commodity, the 'work.' And a crucial institutional embodiment of the author-work relation is copyright . . . . Copyright had traditionally been a publisher's not an author's right."); Gervais, *supra* note 103, at 2076 ("Starting early in the sixteenth century and until the Statute of Anne, English law protected publishers, not authors.").

[106] For the various vicissitudes of the Romantic author in U.S. copyright law, see generally Jaszi, *supra* note102.*Seealso* Peter Jaszi, *On the Author Effect: Contemporary Copyright and Collective Creativity*, 10 CARDOZO ARTS & ENT. L.J. 293-320 (1992).

[107] 111 U.S. 53 (1884).

[108] SHL Imaging, Inc. v. Artisan House, Inc., 117 F. Supp. 2d 301, 307 (S.D.N.Y. 2000) (discussing background of *Burrow-Giles Lithographic Co. v. Sarony*).

[109] *Id.* at 308.

[110] *Burrow-Giles*, 111 U.S. at 54.

district court,[111] and Burrow-Giles thereafter challenged the constitutionality of Congress's power to protect photographs and their negatives by copyright.[112]

The Supreme Court ruled in favor of Sarony, noting that the first Congress, convening "immediately after the formation of the Constitution," had already protected any "author or authors of any map, chart, book or books," and that a later statute extended protection to authors of engravings, etchings, and other sorts of prints.[113] Surely, the Court reasoned, these statutes adopted by individuals contemporary with the Constitution cannot be taken to be misconstruing it.[114] Accordingly, the words "writings" and "authors" in the Constitution cannot be given a narrow meaning, restricting copyright protection only to authors of books.[115] Since "writings" was interpreted by the Founders to cover etchings, engravings, maps and the like, the Court saw no reason why photographs should be treated any differently.[116] Likewise, the word "authors" should not be read restrictively as applying only to authors of books.[117] In the more general sense intended by the Constitution, "[a]n author . . . is he to whom anything owes its origin; originator; maker; one who completes a work of science or literature."[118]

One of the counterarguments the Court considered was that "the photograph is the mere mechanical reproduction of 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."[119] Consequently, it was argued that photographs in general did not deserve protection, as they involved no originality or artistic choice on

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[111] *Id.*
[112] *Id.* at 55.
[113] *Id.* at 56-57.
[114] *Id.* at 57.
[115] *Id.*
[116] *Id.*
[117] *Id.* at 57-58.
[118] *Id.* at 58 (internal quotation marks omitted).
[119] *Id.* at 59.

the part of the artist.[120] In response, the Court gave credit to the findings of fact in the court below, which had noted that Sarony had indeed exercised creative choices in taking the picture by posing Oscar Wilde for the picture, selecting the costume and accessories, arranging the light and shade, obtaining the desired expression, and so on.[121] These artistic choices endowed the photograph with originality and made it "the product of plaintiff's intellectual invention, of which plaintiff is the author."[122]

The Court bolstered its position on the issue of authorship by citing to the then-recent Queen's Bench decision in *Nottage v. Jackson*.[123] In that case, the issue was whether the author of a photograph was the person who had taken the actual negative or plaintiffs, the people who had commissioned him to do so.[124] After expressing some qualms as to the Parliament's use of the word "author" in the Fine Arts Copyright Act, 1862,[125] Justice Brett concluded as follows:

> The nearest I can come to is that [the author] is the person who effectively is as near as he can be, the cause of the picture which is produced; that is, the person who has superintended the arrangement, who has actually formed the picture by putting the persons in position, and arranging the place where the people are to

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[120] *Id*. Photography was said to be merely the mechanical operation of transferring the representation of an object from nature onto a plate. *Id*.

[121] *Id*. at 60.

[122] *Id*.

[123] *Id.* at 60-61 (citing [1883] 11 Q.B. 627 (Eng.)).

[124] *Id.*; *see also* Jaszi, *supra* note 102, at 486.

[125] The Act extended copyright protection to paintings, drawings, and photographs. *See* Ronan Deazley, *Commentary on Fine Arts Copyright Act 1862*, *in* Primary Sources on Copyright (1450-1900) (Lionel Bently & Martin Kretschmer eds.).

be—the man who is the effective cause of that.[126]

The British court, accordingly, rejected plaintiffs' claim, on the basis that they were not the authors of the photographs.[127] The *Burrow-Giles* Court likewise recorded the view of Lord Justice Cotton, for whom the term "author" "involves originating, making, producing, as the inventive or master mind, the thing which is to be protected, whether it be a drawing, or a painting, or a photograph."[128]

There are two essential features of authorship that the discussion of the Court in *Burrow-Giles* brings to the fore.[129] First, an author is identified as that entity which is the primary cause of the work coming into existence. An author is not merely a but-for cause of the work among others (like the photons hitting a photographic plate, or the molecular forces keeping the photographic paper together and preventing it from disintegrating), but rather the person who actually brings the work into existence. In other words, the person who creates it. It is "he to whom anything owes its origin; originator; maker . . . ."[130] This conception of authorship has been echoed numerous times by lower courts,[131] and has

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[126] *Burrow-Giles*, 111 U.S. at 61 (quoting *Nottage*, 11 Q.B. 627 (Eng.)). *See also* Jaszi, *supra* note 102, at 486.

[127] Jaszi, *supra* note 102, at 486.

[128] *Burrow-Giles*, 111 U.S. at 61.

[129] Some commentators consider that the Court's pronouncements on authorship in *Burrow-Giles* are dicta. *See* Russ VerSteeg, *Defining 'Author' for Purposes of Copyright*, 1996 AM. U. L. REV. 1323, 1326. However, the heavy reliance of both the Supreme Court and other federal courts on the language in *Burrow-Giles* seems to belie this assessment. *See, e.g.*, Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 346 (1991); Goldstein v. California, 412 U.S. 546, 561 (1973); N.Y. Mercantile v. Intercontinental, 497 F.3d 109, 115 (2d Cir. 2007); Sherry Mfg. Co. v. Towel King of Fla., 753 F.2d 1565, 1568 (11th Cir. 1985) (citing *Nimmer on Copyright*).

[130] *Burrow-Giles*, 111 U.S. at 58.

[131] *See supra* note 129. *See also* Rodrigue v. Rodrigue, 218 F.3d 432, 436 n.17 (5th Cir. 2000); Imperial Homes Corp. v. Lamont, 458 F.2d 895, 897 (5th Cir. 1972); Respect v. Comm. on the Status of Women, 815 F. Supp. 1112, 1120 (N.D. Ill. 1993); Vaad L'Hafotzas Sichos, Inc. v. Krinsky, 133 F. Supp. 3d 527, 532 (E.D.N.Y. 2015); Garcia v. Google, Inc., 743 F.3d 1258, 1264 n.5 (9th Cir. 2014).

become part of the established legal wisdom concerning authorship. We can call this the 'basic conception of authorship', as it stresses the fundamental fact that an author is the causal origin of the work. While the basic conception is useful for handling problems of authorship, it can sometimes be too coarse-grained to capture the nuances inherent in more complicated authorship situations.

This is where the second characterization of authors in *Burrow-Giles* comes in. The Court also described an author as the one who oversees the creation process and arranges for its coming to fruition.[132] This sense of 'author' depends on the degree of control exercised over the creation of the final product. Let's call this the 'overseer conception' of the author.[133] In *Burrow-Giles*, the photographer who made the arrangements and artistic choices for the photograph was also the person who took the picture, so the basic conception did not diverge from the overseer conception. But things get trickier the further we get from straightforward cases like *Burrow-Giles*. Sometimes, there are several agents who contribute to the creation of a work, and it may not be clear who the actual creator or the originator of the work is. To determine authorship in those situations, courts have relied on characterizations of authorship that closely track the overseer conception of the 'author'.

For instance, as the Third Circuit pointed out in *Andrien v. Southern Ocean City Chamber of Commerce*,[134] there is a distinction between fixing a work into a tangible medium and

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[132] *See* the quote from *Nottage v. Jackson* in the text accompanying note 126, *supra*.

[133] Samantha Hedrick dubs this the "mastermind doctrine" and credits it to *Lindsay v. The Wrecked & Abandoned Vessel R.M.S. Titanic*, 52 U.S.P.Q.2d 1609 (S.D.N.Y. 1999) and *Aalmuhammed v. Lee*, 202 F.3d 1227 (9th Cir. 2000). *See* Hedrick, *supra* note 52, at 340, 340 nn.77-78. But the roots of the idea, as we can see, go back as far as *Nottage v. Jackson* and *Burrow-Giles*. In fact, the "master mind" language that appears in *Aalmuhammed v. Lee* is straight out of *Nottage v. Jackson*, via *Burrow-Giles*. *See Burrow-Giles*, 111 U.S. at 61 (quoting Lord Justice Cotton).

[134] 927 F.2d 132 (3d Cir. 1991).

being the author of that work, insofar as "[p]oets, essayists, novelists, and the like may have copyright even if they do not . . . perform with their own hands the mechanical tasks of putting the material into the form distributed to the public."[135] In that case, the plaintiff closely oversaw the creation of a new map of Long Beach Island, although he did not personally perform the operations required to bring the map into existence.[136] The court observed that the Copyright Act allows for a work to be manufactured not only by the author herself, but also by someone else "under the authority of the author."[137] So, although under the basic conception of authorship one may be tempted to assign authorship to the person who actually creates an embodiment of the work, for copyright purposes the author is whoever exercises control over the embodiment process.[138] Accordingly, summary judgment was found to be inappropriate. It was sufficient that the plaintiff supervised the process to such an extent that none of the activities of the printing company employee who made the map "in any way intellectually modified or technically enhanced the concept articulated by [the plaintiff]

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[135] *Id*. at 135.

[136] *Id*. at 134-36.

[137] *Id*. at 134.

[138] Incidentally, the discussion of the court in *Andrien* bars any straightforward reading of the Supreme Court's apparent conflation of authorship and fixation in *Community for Creative Non-Violence v. Reid*, 490 U.S. 730 (1989), where the Court declared that the author was "the party who actually creates the work, that is, the person who translates an idea into a fixed, tangible expression entitled to copyright protection." 490 U.S. at 737. If by "translates" we understand the performance of the actual fixation process, then the Court was wrong, as authors are not always the ones who perform the fixation of their works. Since this would appear to be the most straightforward meaning of "translates" here, to make more sense of the Court's proposition some non-standard meaning would instead have to be assigned to the word. For similar criticism of the *Reid* decision, see also Jay F. Dougherty, *Not a Spike Lee Joint? Issues in the Authorship of Motion Pictures Under U.S. Copyright Law*, UCLA L. REV. 225, 241 (2001). For more on the distinction between authorship and fixation, see generally VerSteeg, *supra* note 129 (exploring the various definition of "author" for purposes of copyright protection).

other than to arrange it in a form that could be photographed as part of the embodiment process."[139]

Similarly, in *Lindsay v. The Wrecked and Abandoned Vessel R.M.S. Titanic*, plaintiff Alexander Lindsay was held to have sufficiently alleged to be the author of underwater footage of the Titanic to survive a 12(b)(6) motion to dismiss, even though he had not himself operated the underwater cameras that captured the images on film.[140] In a dispute over who owned copyright over the footage, Lindsay claimed that he had created storyboards which included specific camera angles and shooting sequences, that he had designed underwater light towers for shooting the film, that he had directed, produced, and been the cinematographer for the film, and that he had coordinated planning sessions with the crew of the submarine used to transport the shooting equipment and the camera operators to the wreck site.[141] The court recognized that, intuitively, the author of film footage is the person who actually took the pictures.[142] In this case, that would have been the photographers who had taken the underwater pictures. However, due to the amount of control Lindsay had over the filming, the court held that he could be considered the author:

> All else being equal, where a plaintiff alleges that he exercised such a high degree of control over a film operation—including the type and amount of lighting used, the specific camera angles to be employed, and other detail-intensive artistic elements of a film—such that the final product duplicates his conceptions and visions of what the film should look like, the

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[139] *Andrien*, 927 F.2d at 135. The discussion in *Andrien* does not mean that fixation may not often be seen as a "reliable indicator of authorship." Annemarie Bridy, *The Evolution of Authorship: Work Made by Code*, 39 Colum. J.L.& Arts 395, 400 (2016).

[140] 52 U.S.P.Q.2d 1609 (S.D.N.Y. 1999).

[141] *Id.* at 1611.

[142] *Id.* at 1612.

plaintiff may be said "author" within the meaning of the Copyright Act.[143]

As Jay Dougherty correctly notes, the type of control that was decisive for the *Lindsay* court in establishing authorship was *actual* control over shooting process, not merely the *right* to control the shooting.[144] In particular, it was not just the fact that Lindsay had general control over the film content, but rather the fact that he exercised this control by giving specific instructions concerning camera angles and other content which decided the issue for the court.[145]

This overseer conception of authorship was extended, more controversially, to a dispute between co-authors in *Aalmuhammed v. Lee*,[146] which concerned the 1992 production of the film *Malcolm X* by Spike Lee.[147] Jeffri Aalmuhammed (acting as consultant to actor Denzel Washington), presented evidence that he had made extensive contributions to the film, such as reviewing the shooting script and suggesting revisions, directing Denzel Washington and other actors on set, creating at least two scenes with new characters, selecting the right Muslim prayers and religious behavior for the characters, supplying voice-over content, and translating Arabic into English for subtitles.[148] Based on these facts, Aalmuhammed claimed that the film was a joint work and that he was a co-author of the entire film.[149] After losing on summary judgment in the district court, he appealed.[150]

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[143] *Id*. at 1613.

[144] *See* Dougherty, *supra* note 138, at 248.

[145] *Id*.

[146] 202 F.3d 1227 (9th Cir. 2000).

[147] *Id*. at 1229.

[148] *Id*. at 1230.

[149] *Id*. The Copyright Act defines a joint work as "a work 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. According to the House Report, "[t]he touchstone here is the intention, at the time the writing is done, that the parts be absorbed or combined into an integrated unit, although the parts themselves may be either 'inseparable' (as in the case of a novel or painting) or 'interdependent' (as in the case of a motion picture, opera, or the words and music of a song)" H.R. REP. NO. 94-1476, at 120 (1976).

[150] *Aalmuhammed*, 202 F. 3d at 1230.

The Ninth Circuit acknowledged Aalmuhammed's contributions to *Malcolm X*, but held that "authorship is not the same thing as making a valuable and copyrightable contribution."[151] The court correctly pointed out that the basic conception of authorship, while fairly straightforwardly applicable to novels and other similar works, is not sufficient to address the more crowded world of motion pictures: "as the number of contributors grows and the work itself becomes less the product of one or two individuals who create it without much help, the word ['author'] is harder to apply."[152] Relying on *Burrow-Giles*, the court ultimately adopted the overseer conception of the author as the person "who superintended the whole work, the 'master mind'," and held that, in films, only "someone who has artistic control" (like the producer, the director, the star of the movie, or the screenwriter) can qualify.[153] Since Aalmuhammed did not have control over the film, and did not superintend the making of the film in the required sense, he could not be a co-author of the film as a joint work.[154]

The extension of the reasoning in *Burrow-Giles* to cases of co-authorship like the one in *Aalmuhammed* has been questioned.[155] We need not settle the matter here, but it is worth noting the difference between *Lindsay* and *Aalmuhammed*. In *Lindsay*, there was no claim of co-authorship, as the issue was not whether the underwater footage was a collaborative or joint work. Rather, the issue was whether someone could be an author despite not having held the camera and shot the film himself. The court determined that he could, because he oversaw the shooting process in detail, and the persons who handled the cameras

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[151] *Id.* at 1232.
[152] *Id.*
[153] *Id.* at 1233.
[154] *Id.* at 1235.
[155] *See* Dougherty, *supra* note 138, at 276-81. *See also* NIMMER, *supra* note 47, at § 6.07[B][3][c]; Berman v. Johnson, 518 F. Supp. 2d 791, 797 (E.D. Va. 2007) (arguing that the requirement of control over the work in order to qualify for co-authorship is liable to manipulation).

were merely following his directions. In *Aalmuhammed*, the court applied this overseer conception to determine that a person who claims to be a co-author needs to have actual control over the entire work, otherwise their claim will fail. The problem is no longer (as in *Lindsay*) how to distinguish between a master mind and an amanuensis (or someone who merely executes directions), but to adjudicate claims of authorship between parties who have *each* made original contributions to a work.

Our discussion can be summed up as follows: An author is the causal origin of a work who brings the work into existence. But, in more complex cases, where several agents play a causal role in the bringing about of the work, the author is that agent who exercises the required amount of control over the creation of the work.

One clarification is in order. This Article assumes that the works under discussion meet the minimum threshold of originality that is required for copyright to attach, as held by the Supreme Court in *Feist Publications, Inc. v. Rural Telephone Service Co., Inc.*[156] Some commentators take originality to be an essential part of an analysis of authorship,[157] whereas, arguably, it is better seen as a characteristic of works, not of authors. If, to be an author, one were required to be original, then non-original works would not be entitled to copyright because they would be authorless, which seems incorrect.[158] But even granted that originality is an essential characteristic of authorship, originality does not

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[156] 499 U.S. 340, 346 (1991) ("Originality is a constitutional requirement.").

[157] *See* NIMMER, *supra* note 47, at § 1.06[A] ("[O]riginality is the essence of authorship."); Shlomit Yanisky-Ravid & Luis A. Velez-Hernandez, *Copyrightability of Artworks Produced by Creative Robots and Originality: The Formality-Objective Model*, 19 MINN. J.L. SCI. & TECH. 1, 18 (2018). ("In order to decide who is the author and if a creative robot can be an author, one must first address the question of originality."). *But see also* NIMMER, *supra* note 47, at § 8D.06[C][5] (2021) (attributing originality to works).

[158] The Court in *Feist Publications, Inc. v. Rural Telephone Service Co.* talks throughout most of the decision as if the originality requirement applies to works, but does at one point cite to Nimmer's assertion that "a work is not the product of an author unless the work is original." 499 U.S. at 352-53.

exhaust the concept of authorship. The focus in the Part that follows will be on the *creative* aspect of authorship, as that is most relevant to the AI debate. In this context, the question is not so much whether the AI is an original author, but rather 'Who is the creative agent behind the work?' In other words, 'Who exactly brought the work into existence?'

IV. Will the Real Author Please Stand up?

In this Part, I argue that the actual author of the type of AI-generated works we are interested in is the AI itself. I discuss several reasons for that conclusion below and address proposals in the literature that authorship should instead be allocated to programmers.

A. The AI Author

Who is the author of *The Forgotten Melody*, the story at the beginning of this Article? There are several candidates: the AI itself (ChatGPT), the programmers, the owner of the data on which the AI was trained (which could be Microsoft or some other business entity), or the users of ChatGPT (here, the author of this Article). As I pointed out in the discussion of the Constitutional Constraint *supra* in Part II, we are interested in the *actual* author of *The Forgotten Melody*, not who *should* be the author according to policy considerations. The Constitution entitles only actual authors to copyright. As a result, we can discard the latter two candidates: I am not the actual author of the story, and neither is the data owner.

This does not mean that users can *never* be authors in the required sense; only that, for much AI-generated art, they are not. Compare ChatGPT with word-processing software like Microsoft Word or Grammarly, or cameras where the user is uncontroversially the author of the output. In these cases, the technology is manipulated and controlled by a human agent to create a work (for example, a picture, a Word document, or a song). The agent controls the component elements and the structure of the work. A photographer controls what the object of a picture will be, in what light and with what kind of

lens to shoot it, and so on. Likewise, a musician is in control of selecting and arranging the component notes of a musical piece performed on a synthesizer, just as a writer chooses the words and sentences that make up a short story written in Word.[159] However, with more recent advances in AI such as ChatGPT or DeepBach, the user may only provide a prompt, and the AI comes up with a short story, a chorale, or some other artistic production.[160] As data owners are even more removed from the whole process than users, their claim to authorship can be discounted as well.

We are thus left with the AI itself and the programmers or designers of the AI as the most plausible candidates for

[159] Interesting questions may arise with art that employs a mixture of control and randomness. For instance, in a 2016 work commissioned for the Guggenheim, Sun Yuan and Peng Yu placed a robotic arm on whose extremity they installed a shovel on the floor of an enclosed space, where the robot's job is to contain red liquid spread on the floor within a certain area. In shoveling away at the liquid, the mechanism leaves stains on the floor and splashes on the walls. *See* Xiaoyu Weng, *Sun Yuan and Peng Yu, Can't Help Myself*, GUGGENHEIM, https://www.guggenheim.org/artwork/34812 [https://perma.cc/3DT9-X43T]. In this case, Sun and Peng are the authors of the entire installation. But they do not have control over the splashes or the stains, so it might be argued that that part of the work is not copyrightable. Nevertheless, the more likely result is that a court would count the two artists as owners of the splash patterns as well. Whatever turns out to be the best way to handle this and similar cases, note that the products of ChatGPT that have been the focus of the discussion here (e.g., stories like *The Forgotten Melody*) do not exhibit this degree of randomness, but are, on the contrary, highly structured. Perhaps paradoxically when compared to randomness-based art, that feature renders programmers' and users' claims to authorship less, not more, plausible. For the impact of incorporating randomness into artworks on copyright law, see generally Alan R. Durham, *The Random Muse: Authorship and Indeterminacy*, 44 WM. & MARY L. REV. 569 (2002) (discussing several well-known instances of the use of random elements in art in the twentieth century).

[160] Perhaps the imagery brought about by users in certain video games may qualify as user-authored. *See* Jane Ginsburg & Luke Ali Budiardjo, *Authors and Machines*, 34 BERKELEY TECH. L.J. 343, 377-78 n.125 (2019) (noting that some recent video games are not confined to a fixed set of visual sequences that the users simply reproduce when they play, but instead push user interaction so far as to make it extremely unlikely that the same sequences will be generated by two different games). For more on users, see the discussion of the *Zarya of the Dawn* case, *infra*.

authorship status. As previously discussed, there are two important conceptions of authorship that are deployed by courts: the 'basic' conception, and the 'overseer' conception. The issue before us is to determine who better fits these conceptions, and therefore can be properly deemed the author of the work and thereby the owner of the copyright in the work.

We can start with the basic conception of authorship. Under this conception, the author is simply that entity who brings the work into existence, in other words who creates it. Who created *The Forgotten Melody* on this view? The most plausible answer is, I believe, ChatGPT itself. Recalling the words of Justice Brett in *Nottage v. Jackson*, cited approvingly by the Court in *Burrow-Giles*, the author is "the person who effectively is as near as he can be[,] the cause of the picture which is produced . . . ."[161] In the causal chain leading up to the appearance of the short story on my computer screen, the AI is the most salient agent. In getting ChatGPT to write a short story, I addressed myself to the program itself, not to its designers. As the story was being typed by ChatGPT, none of ChatGPT's designers contributed anything to the outcome, as they were not even aware that the story was being written. Since the story obviously had a cause (in the sense that it was not a random event), and we already eliminated the possibility that the user is the cause of the story coming into existence, the only other source of the story can be the AI itself.

It is a virtue of this account of the authorship of *The Forgotten Melody* and other AI-generated works that it coheres well with the way we approach issues of authorship in everyday life and in ordinary speech. Thus, an utterance of 'I got ChatGPT to write me a short story the other day' would be judged true by an overwhelming majority of English speakers.[162] But it is hard to say the same about alternative

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[161] Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53, 61 (1884).

[162] This sentence implies that the driving force behind the creation of the story was ChatGPT.

utterances focusing on the user or the programmers. Consider, for instance, the following two sentences, uttered in the context that we are currently discussing:

(1) I (the user of ChatGPT) wrote the short story *The Forgotten Melody*.

(2) The programmers of ChatGPT wrote *The Forgotten Melody*.

Both statements would likely be judged false by most English speakers. And rightly so: neither the user nor the programmers wrote anything; they did not engage in the act of writing short stories at all.[163] In fact, if the user or the programmers were to submit *The Forgotten Melody* to a short story competition, they would most certainly be disqualified, just like, should the programmers of ChatGPT sit for the bar exam and submit the answers of a GPT-based chatbot as their own, they would not be getting their license any time soon. The actual author in these cases is the AI.[164]

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[163] It might be objected that an utterance of "I used ChatGPT to write the short story *The Forgotten Melody*" may not be judged false by English speakers, and that such an utterance entails or implies that I am the author of the story. However, while it is true that such an utterance seems to imply that I am the author, that is precisely the reason why it would be judged false, or at best misleading, on the facts in this Article. The sentence we are considering is very different from a sentence like "I used Microsoft Word to write this short story." In the latter case, the software is a mere instrument, and I did all of the work in actually composing the story. In the former case, I did none of the work in writing the story, so it is not clear how it could be truly said that I used ChatGPT to write *The Forgotten Melody*.

[164] In response, one might raise the example of digital artist Jason M. Allen, whose work entitled *Théâtre D'opéra Spatial* won first prize at the Colorado State Fair art competition. *See* Kevin Rose, *An A.I.-Generated Picture Won an Art Prize. Artists Aren't Happy*, N.Y. TIMES (Sept. 2, 2022), https://www.nytimes.com/2022/09/02/technology/ai-artificial-intelligence-artists.html [https://perma.cc/THW3-Z7DM]; Dorian Batycka, *An A.I.-Generated Artwork Won First Prize at a Colorado State Fair. Human Artists Are Infuriated*, ARTNET (Sept. 1, 2022), https://news.artnet.com/art-world/colorado-artists-mad-ai-art-competition-2168495 [https://perma.cc/MWM9-JSHJ]. Allen used a software called Midjourney (which I will discuss shortly) to generate the digital picture that ultimately won the prize at the Colorado State Fair. But this does not constitute a counterexample to the point I am making in the main text.

These considerations are important because the conceptual apparatus of copyright law (including the concept of 'author') cannot be detached from the way we use concepts in non-legal contexts. Copyright law, at least in part, systematizes a series of norms and practices occurring outside the legal context, and provides solutions to various problems that arise out of these practices. It is for this reason that the Copyright Act and the courts, in deploying concepts like 'author,' 'originality,' or 'work of authorship,' have stuck fairly close to the way these concepts are used in ordinary life. There are exceptions, of course,[165] but they should not become the rule, otherwise the law will be in danger of losing touch with the actual human behavior it is supposed to regulate.[166]

The reporting on this event makes it clear that this sort of occurrence is unusual. As both Rose and Batycka point out, the fact that such a work won the prize caused negative reactions from other artists, some of whom accused Allen of cheating (even though Allen had disclosed the way in which his proposal for the art contest had been generated). That shows that our everyday attributions of authorship do not generally align well with the idea that users are the authors of works designed largely by AI. Moreover, it bears re-emphasizing that it is not my contention that users may *never* be authors of works to which AI has some contribution. That may happen, but it is not true in the case of *The Forgotten Melody* or (arguably) of Allen's *Théâtre D'opéra Spatial*. Allen's work was denied copyright protection by the U.S. Copyright Office in large part for lack of human authorship. *See* U.S. Copyright Office, *Decision Letter Re: Second Request for Reconsideration for Refusal to Register Théâtre D'opéra Spatial* (Sept. 5, 2023), https://www.copyright.gov/rulings-filings/review-board/docs/Theatre-Dopera-Spatial.pdf [https://perma.cc/TJP7-Y43Y].

[165] They are usually mentioned expressly in the statute. One such exception, as we have seen, is the grant of authorship to employers, who are not the actual authors. Another exception is exemplified by the drafting of the definition of the term "literary work," which makes room for computer software. *See* 17 U.S.C. § 101; Oracle Am., Inc. v. Google Inc., 750 F.3d 1339, 1354 (Fed. Cir. 2014); Whelan Assocs. v. Jaslow Dental Lab'y, 797 F.2d 1222, 1234 (3d Cir. 1986).

[166] For a similar assessment, see Lionel Bently & Laura Biron, *Discontinuities Between Legal Conceptions of Authorship and Social Practices. What, if Anything, Is to be Done?*, *in* THE WORK OF AUTHORSHIP 237, 263 (Mireille van Eechoud ed., 2014) ("[S]omething

Applying the overseer conception of authorship does not change the analysis. Under that conception, the author is whoever has actual control over the production process. The AI is the most plausible candidate on this view of authorship as well, as it is the entity that actually generated the work. Unlike the *Lindsay* or *Andrien* cases, we do not even need to worry about intermediaries between the AI and the work: ChatGPT made up *The Forgotten Melody* all by itself, upon being prompted by the user.

This result is confirmed by the analysis of the Copyright Office in a recent decision concerning a comic book entitled *Zarya of the Dawn*.[167] In that case, the artist Kristina Kashtanova registered the comic book with the Copyright Office.[168] To create the images that were part of the comic, Kashtanova had made use of an tool provided by the AI platform Midjourney.[169] Due to that fact, the Copyright Office subsequently restricted copyright coverage to only certain elements of the work (namely, the text and the selection, coordination, and arrangement of the work's text and images), while denying coverage to the AI-generated images themselves.[170]

To understand the denial of copyright to the AI-generated images, it is worthwhile to examine the Copyright Office's description of the way in which Midjourney functions. When connected to Midjourney, users may enter bits of text which

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important is at stake in this failure to align copyright's concept of authorship with the understandings of authorship evinced in many– perhaps most–social practices. What is at stake is the credibility and legitimacy of copyright law itself. . . . That legitimacy lies in the idea that copyright law promotes cultural flourishing, by giving the weight of law to ideas that artistic and cultural activities warrant recognition, respect and reward. In turn, it is important that different social operators feel a reasonable correspondence between the social norms that underpin their practices and legal norms embodied in copyright law.").

[167] *See* U.S. Copyright Office, *Decision Letter Re: Zarya of the Dawn (Registration # VAu001480196)* (Feb. 21, 2023) [hereinafter "the Kashtanova Letter"], https://www.copyright.gov/docs/zarya-of-the-dawn.pdf [https://perma.cc/NT9T-DJBY].

[168] *Id*. at 1.

[169] *Id*. at 1-3.

[170] *Id*. at 1.

are then used by the AI software as prompts to generate virtual images.[171] For example, a user's entry of the textual description 'white bunny with low ears, rainbow background, love, cute, happy' resulted in the AI generating four virtual images of bunnies matching the description in the text.[172] Together with the textual instructions, users can include URLs of other images to influence the result generated by Midjourney, as well as other technical directions (such as what aspect ratio the resulting image should have).[173] Midjourney usually generates four virtual images in response to users' textual prompts, and users then have the option of asking Midjourney to refine the resulting images in various ways, or to create another four images from scratch.[174]

Significantly, Midjourney does not process the text bits it receives from users in the same way that humans would, as it does not have a human understanding of grammar, sentence structure, or words.[175] What it does instead is convert phrases and words into smaller bits called 'tokens,' which it then compares to its training data in order to generate images.[176] It starts out with "a field of visual noise, like television static" and generates initial image grids, to which it then applies an algorithm to fashion the field into recognizable images.[177]

Kristina Kashtanova started the process of creating images to represent Zarya (the heroine of *Zarya of the Dawn*) by feeding Midjourney prompts such as 'dark skin hands holding an old photograph,' but in order to arrive at what she considered to be a satisfactory final image of Zarya, she had

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[171] *Id.* at 7.

[172] *Id.* at 6. The reader is invited to consult the Kashtanova Letter for the exact images, which the Letter reproduces.

[173] *Id.* at 7.

[174] *Id.*

[175] *Id.*

[176] *Id.*

[177] *Id.* at 7-8 (quoting *Seeds*, MIDJOURNEY, https://docs.midjourney.com/docs/seeds [https://perma.cc/QEZ6-7BSE]).

to provide hundreds or thousands of further descriptive prompts to Midjourney.[178]

The Copyright Office stressed that while the user may influence the images produced by Midjourney, they do not control the images because the user cannot anticipate what Midjourney will create.[179] The images generated by the AI are unpredictable, and all users can do is keep feeding the AI more prompts in order to ultimately bring the images in line with their vision.

In denying copyright coverage to the AI-generated images in the comic book, the Copyright Office explicitly acknowledged that the AI was the actual author of the images, stating that "the process described in the Kashtanova Letter makes clear that it was Midjourney—not Kashtanova—that originated the 'traditional elements of authorship' in the images."[180] Applying the overseer (or "master mind") conception of authorship, the Copyright Office noted that the person who provides prompts to the AI cannot be the master mind behind the work, as she lacks sufficient control over the resulting images.[181] Control is lacking precisely because the generated images are only weakly responsive to users' prompts, rendering the creation process error-prone and time-consuming.[182]

It is noteworthy that, given the Copyright Office's analysis in the *Zarya* matter, users who spend weeks or months

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[178] *Id*. at 8.

[179] *Id*. at 8-9.

[180] *Id.* at 8.

[181] *Id.* at 9 ("Because of the significant distance between what a user may direct Midjourney to create and the visual material Midjourney actually produces, Midjourney users lack sufficient control over generated images to be treated as the 'master mind' behind them."). Note the "distance" metaphor employed by the Copyright Office, bringing to mind Justice Brett's definition of the author, in *Nottage v. Jackson*, as "the person who effectively is as near as he can be." (quoted in Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53, 61 (1884)). Control is a matter of degree, and the closer one is to the actual process of creation, the more control one is deemed to have.

[182] Kashtanova Letter, at 9 ("It is therefore understandable that users like Ms. Kashtanova may take 'over a year from conception to creation' of images matching what the user had in mind because they may need to generate 'hundreds of intermediate images.'").

feeding prompts to the AI do not count as authors. Thus, there is no question that programmers, who at that point have long ceased to interact with the AI, do not count either. The Copyright Office was crystal clear that the actual author of the work was the AI, thereby rejecting any notion that the programmers or users of the AI could claim authorship for the works.[183]

One may object to the Copyright Office's analysis by pointing to the fact that, in cases like *Lindsay*, the director of the underwater footage of the Titanic, just like Kashtanova, also provided a lot of instructions to the people who actually shot the sequences. If Lindsay's numerous instructions to the crew were sufficient to make Lindsay the author of the underwater footage, why are Kashtanova's prompts to Midjourney not sufficient to render her the author of the images generated by Midjourney?[184]

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[183] The analysis of the Copyright Office in the Kashtanova Letter provides additional authority against views like Professor Samuelson's, according to whom, "[s]ince it is the user of a generator program who most immediately and directly causes music or a story to be generated, the user would seem to have the strongest claim to owning what is produced by his instruction." Pamela Samuelson, *Allocating Ownership Rights in Computer-Generated Works*, 47 U. PITT. L. REV. 1185, 1202 (1986). As the Copyright Office pointed out, "[i]f Ms. Kashtanova had commissioned a visual artist to produce an image containing 'a holographic elderly white woman named Raya,' where '[R]aya is having curly hair and she is inside a spaceship,' with directions that the image have a similar mood or style to a 'Star Trek spaceship,' 'a hologram,' an 'octane render,' 'unreal engine,' and be 'cinematic' and 'hyper detailed,' Ms. Kashtanova would not be the author of that image." Kashtanova Letter, at 10. Surely, if these instructions are not sufficient for authorship, my directions to ChatGPT, whereby I specified none of the content of the story, does not make me the author of *The Forgotten Melody*. The user is actually the entity that provided the least significant contribution to creating the story, far less than the programmers or the AI itself. For another user-centered view that is similarly vulnerable to these observations, see generally Robert C. Denicola, *Ex Machina: Copyright Protection for Computer-Generated Works*, 69 RUTGERS U. L. REV.251 (2016).

[184] Thanks to *YJoLT* editor Elliot Ping for pressing this point.

To begin addressing this concern, let us note that, since the overseer conception of authorship is a matter of control, and control comes in degrees, it would be possible in principle for Kashtanova to exercise so much control over Midjourney that Kashtanova is in fact the author. Nevertheless, here, the Copyright Office concluded otherwise, and based on the description of the creative process in the Kashtanova Letter, the decision appears to be correct.

If we stop to consider for a moment what Kashtanova was trying to achieve, the conclusion of the Copyright Office is even more natural. Kashtanova was effectively trying to create a visual work of art by using only bits of text. The only steps she took toward producing the visual effects she wanted were to feed more and more text into Midjourney. But going from text to visual information is a huge leap, and it seems counterintuitive to assign authorship to an actor who relies merely on text to produce images.

Lindsay, on the other hand, relied not only on textual information when communicating with his crew, but also on visual information, in the form of storyboards, designs of light towers, and very likely a lot of auxiliary drawings, images, charts, and other similar visual content.[185] In fact, communication between Lindsay and his crew took place along several dimensions: visual, verbal, auditory, gestural, and so on. As is obvious, several perceptual modalities were involved in this interaction between Lindsay and the crew. To that we can add non-perceptual communication, such as direct communication of ideas, thoughts, feelings, or emotions. Almost none of that occurred in the interaction between Kashtanova and Midjourney, because Midjourney only responds to text it receives as input. It should be apparent, even from these brief considerations, that Lindsay and his crew shared a social world, which allowed for streamlined communication, while Kashtanova and Midjourney did not. It should therefore come as no surprise that Lindsay was deemed by the court to have exercised such a high degree of control over the underwater footage that he was an author,

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[185] *Lindsay*, 52 U.S.P.Q.2d 1609, 1611 (S.D.N.Y. 1999).

while Kashtanova was denied authorship status by the Copyright Office.

Another significant difference between *Lindsay* and the *Zarya* matter is that, in the former case, the director was familiar with the mechanism of underwater shooting. He knew what such shooting involves and what the crew members would be doing when following his instructions. In contrast, Kashtanova has no clue as to what goes on inside Midjourney when it produces the visual images she is looking for. She is merely feeding text into a black box, with images coming out the other end. Kashtanova does not have any knowledge of the internal mechanism by which Midjourney constructs the images, whereas Lindsay presumably possessed a lot of technical knowledge of how the visual product would be obtained in his case.[186] In these circumstances, a finding of sufficient control is understandable in Lindsay's case, but not in Kashtanova's.[187]

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[186] One may object that an author does not need that level of understanding of the internal mechanisms of the tool she is using in order to count as an author. For example, when taking a picture, the photographer need not be familiar with the inner workings of the camera. This is true, but the degree of technical knowledge of the person who manipulates an instrument may still be one relevant factor, among others, in determining the degree of control over the outcome, and thereby in adjudicating some authorship claims. In general, the more knowledgeable one is about the way in which an instrument works, the more control over the output of the instrument one has. Therefore, the fact that Kashtanova's knowledge of the workings of Midjourney was extremely limited, although it may not defeat her claim, does seem to weaken it. In fact, Kashtanova was arguably in a worse position than that of a photographer who does not know the inner workings of a camera, because the latter does ordinarily have some idea about how to alter the camera settings, what filters to use, what kind of lighting and shooting angles to use, etc. in order to obtain the desired result. Kashtanova was limited to feeding text into the program and waiting to see the largely random outcome.

[187] It might be pointed out that, on this line of argument, it would follow that, if Lindsay had been more limited in the way he communicated with his crew (for instance, being limited solely to email communication), Lindsay would have had less control over the outcome of the shooting,

Finally, the more advances accumulate in the field of AI, the more reasons we will have for attributing authorship to AI systems themselves. The natural trend in the development of AI is toward ever-increasing autonomy, meaning that the agency aspect of AI will gain prominence, while the merely tool-like aspect will diminish. At some point, even critics who are not convinced that the days of AI authors are already upon us will have to acknowledge the fact that AI is no longer usefully lumped together with screwdrivers, loudspeakers, or word processors, but is more like a rational agent.

The arguments offered in this Section establish that ChatGPT is the author of *The Forgotten Melody*, and that, in relevantly similar cases of AI-generated works, the author is the AI itself. The conclusion to be drawn from this is straightforward: since the Constitutional Constraint mandates

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and thereby less of a claim to authorship. Similarly, if Lindsay's crew had been bad at following his instructions, his control of the shooting would have been affected. These observations are correct, but do not constitute objections to the arguments in the main text. The notion of control at work in considerations of authorship does indeed have these consequences, but they are by no means counterintuitive. It is unremarkable that states of affairs which are obstacles to potential authorship claims (such as limitations in the manner of communication between a putative author and persons executing the author's commands, or the ineptitude of such persons in implementing said commands) will dilute the amount of control ultimately exercised over the final output. In cases such as these, the connection between the putative author's commands and the result of those commands is diminished, and the more this connection is loosened, the more problematic will become the attribution of the end product to the author of the initial commands. In this regard, consider a hypothetical world in which J. K. Rowling commanded Warner Bros. to shoot a series of films based on her *Harry Potter* novels, the only instructions on the shooting being the text of the novels themselves. Supposing that Warner Bros. generated something similar to the actual *Harry Potter* films, it is very unlikely that J. K. Rowling would count as the author of the films, merely because she wrote the novels. One of the main reasons impeding such an attribution of authorship to J. K. Rowling is that the connection between pure textual information and a movie picture is too loose. Texts, unlike images, are notoriously incomplete as to the amount of detail they are able to convey, so, as a rule, it is going to be hard to base the authorship of audiovisual works on the generation of texts. Something like this may have been part of the background reasoning in the *Zarya* decision.

that only authors are entitled to copyright protection, the only entity entitled to have copyright in the AI-generated work is the AI itself. Irrespective of any policy considerations, it would be unconstitutional to give copyright protection to non-authors.

It also follows from the discussion thus far that programmers, developers, and, more generally, persons responsible for the construction of AI systems cannot claim authorship for AI-generated work. However, since programmers have been seriously advanced by scholars as the best candidates for copyright protection, the next Section will present additional arguments against this view.

B. Why Programmers are not Authors

Jane Ginsburg and Luke Budiardjo (hereinafter, "G&B") have argued that machines cannot be authors because "[a]ny apparent 'creativity' in a machine's output is directly attributable either to the code written by the programmers who designed and trained the machine, or to the instructions provided by the users who operate the machine."[188] On this view, even if the machine's output is surprising and unpredictable, that output is still "the direct result of the machine's *process*, which, in turn, is inevitably the brainchild of some human developer or user."[189] Accordingly, machines are simply tools of the programmers or of the users, "incapable of embarking upon 'frolics of their own.'"[190]

But G&B's view fails to distinguish between creating the necessary pre-conditions for some event X and creating or giving rise to X itself. No one denies that programmers and

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[188] Ginsburg & Budiardjo, *supra* note 160, at 398.

[189] *Id.*

[190] *Id.* at 399. The phrase "frolic of their own" is common in agency law. *See, e.g.*, Abbott Lab'ys v. McLaren Gen. Hosp., 919 F.2d 49, 52 (6th Cir. 1990) ("If the agent is off on a frolic of its own, in a situation where the principal has neither given the agent authority to act for it nor done anything to suggest to others that the agent has such authority, and in the absence of ratification, courts do not ordinarily treat the act of the agent as the act of the principal.").

developers are necessary for the AI to function, and that human beings are making various significant choices during the AI's training process. However, that only means that humans play a causal role in creating the pre-conditions for the AI's creation of artworks. It does not render the humans authors of the works. The claim that an AI's output is 'directly attributable' to the programmers behind it is unclear. Is a player's touchdown 'directly attributable' to the coach's strategy, thereby making the coach the 'author' of the touchdown? Are a child's actions 'directly attributable' to its parents, given that the parents provided the necessary DNA to create the child?

Of course, these examples involve intentional agents (players or children) that may be said to disrupt the control exercised by entities up the causal chain (coaches or parents) over the resulting action. And G&B deny that AI systems are intentional agents, since AI does not have intentional states, like beliefs and desires, and lacks judgment, imagination, and self-criticism.[191] But even if this description of AI today is correct, G&B do not explain why these types of mental features are necessary for an AI to break away from the programmers' control and go on a 'frolic of its own.' G&B's claim that every step of the machine is "the product of the precise articulation of commands by a human programmer"[192] may be true in some sense, but, clearly, no programmer provided any specific commands to ChatGPT relative to the creation of *The Forgotten Melody*. What the programmers provided was a number of parameters and guidelines that the machine considered when learning to analyze the data on which it was being trained. Getting from that to being the author of *The Forgotten Melody* is a big step.[193]

Contrary to G&B's view, what is remarkable about AI-generated works is how *little* guidance from programmers or

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[191] Ginsburg & Budiardjo, *supra* note 160, at 399 n.229.

[192] *Id*. at 399.

[193] As Bridy pointed out, "[o]ne could simply cut out the middle-machine and argue that . . . Harold Cohen 'really' painted the pictures composed by AARON, but to do so would miss something very important about the nature of these works and the process by which they are produced." Bridy, *supra* note 58, at 22.

developers the AI receives in the process of creating those works. G&B make it sound as if AI systems are being guided at every step by pre-existing instructions from the programmers. But that is far from being the case: the programmers may have implemented powerful mathematical and statistical models into the AI as a pre-condition for the creation of new art, but the programmers themselves had little clue as to what would be the output in such-and-such concrete case. As we already saw in Section IV.A, the position of the Copyright Office is that minimal commands like 'Write a short story,' or 'Compose a sonata' do not suffice to make one an author of the work.

G&B claim that programmers need not understand the exact workings of the AI to use the AI as tools, in the same way that Jackson Pollock did not have to understand the workings of gravity and inertia to be the author of his drip paintings.[194] This claim is certainly correct as far as it goes. However, note that programmers not only do not understand the exact inner workings of ChatGPT or Midjourney. They also do not know what works these tools produce and have no intention (at the time of designing the AI) of causing these works to come into being.[195] Therefore, it is hard to see in what sense programmers can be said to be using AI to create works. Up until the moment that I asked ChatGPT to create a story, no programmer was using ChatGPT to create *The Forgotten Melody*.

The case against programmer authorship is also strengthened by the fact that, to create a work, one needs to control at least some of its aesthetic properties. For instance, *The Forgotten Melody* has a character and a plot. So, whoever authored the short story must have created the character and plot of the story. But it is implausible that programmers created either since they never conceived of either. In general, many AI-generated works have artistic properties that are not

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[194] Ginsburg & Budiardjo, *supra* note 160, at 403.
[195] Ginsburg and Budiardjo reject the view that intent to create is a pre-requisite of authorship. *Id*. at 399 n.229.

the result of the mental processes of the developers, so the latter cannot be said to be the authors of those works. Authorship requires a direct connection between the mental states of the author and the resulting properties of the work. In other words, the fact that *X* does *something* that ultimately results in a work *W* with aesthetic properties that were never within the contemplation of *X* does not make *X* the author of *W*.

G&B's position is further challenged by a 1986 Report of the Congressional Office of Technology Assessment (OTA), entitled *Intellectual Property Rights in an Age of Electronics and Information*.[196] The 1986 Report came about because the OTA took issue with the conclusions of the National Commission on New Technological Uses (CONTU) in its 1978 Report, where CONTU, like G&B, adopted the view that computers are mere inert instruments in the hands of programmers.[197] According to the OTA Report:

> It is misleading . . . to think of programs as inert tools of creation, in the sense that cameras, typewriters, or any other tools of creation are inert. Moreover, CONTU's comparison of a computer to other instruments of creation begs the question of whether interactive computing employs the computer as cocreator, rather than as an instrument of creation. It is still an open question whether the programmed computer is unlike other tools of creation.[198]

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[196] *See* OFFICE OF TECH. ASSESSMENT, INTELLECTUAL PROPERTY RIGHTS IN AN AGE OF ELECTRONICS AND INFORMATION (Apr.1986) [hereinafter "OTA Report"].

[197] *See* NAT'L COMM'N ON NEW TECH. USES OF COPYRIGHTED WORKS (CONTU), FINAL REPORT OF THE NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS 44 (1978) ("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.").

[198] OTA Report, *supra* note 196, at 72.

If this was true in 1986, it is even more true today, almost forty years later, when AI can do much more than a typical computer.

The examples of instruments in the CONTU Report (typewriters and cameras) involve cases where the aesthetic properties of the resulting work are transparent to the author. Thus, when using a camera or a typewriter, the author ordinarily has a pretty good idea of what the resulting photograph or text will be like. But the aesthetic features of *The Forgotten Melody*, or similar outputs, were opaque to the programmers. Even when an author includes elements of randomness into their work, the author still has some conception of the result,[199] unlike AI programmers. Surely, the knowledge that the AI will produce 'some story or other,' or 'some painting or other' at some point, given the fact that the programmer has no sense of the features of those future works, is not sufficient to render a programmer an author of that very work.[200]

An analogy between ChatGPT and similar AI systems in other areas confirms our analysis. Consider, for example, AlphaZero, a deep-learning algorithm employed, among other things, to play chess.[201] AlphaZero was trained just by playing itself (no chess-games database was incorporated into

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[199] *See* Ginsburg & Budiardjo, *supra* note 160, at 361-62 (mentioning artists like Jackson Pollock and Max Ernst, and acknowledging that "copyright theory tolerates some degree of randomness in a work's execution . . . "). Ginsburg & Budiardjo are in agreement regarding the control that an author must exercise over the work, yet (strangely) conclude that programmers are authors.

[200] That said, I do not endorse a definition of authorship in terms of foreseeability alone. Bruce Boyden has proposed foreseeability as a necessary condition of authorship, but sometimes he seems to be claiming that authorship is also a sufficient condition for authorship. Bruce E. Boyden, *supra* note 51, at 394 ("The test for authorship should be whether the putative author foreseeably communicated that meaning to the audience"). I reject the latter view.

[201] *See* David Silver et al., *Mastering Chess and Shogi by Self-Play with a General Reinforcement Learning Algorithm*, ARXIV 1-2 (Dec. 5, 2017), https://arxiv.org/abs/1712.01815 [https://perma.cc/M79N-KJE6].

its training).[202] After four hours of self-play starting from scratch, AlphaZero was able to convincingly defeat *Stockfish*, one of the best chess engines in existence, and far superior to any human player.[203] Now, given the extremely high level of chess performance by AlphaZero, outstripping the ability of any humans, it would not do to ascribe authorship of AlphaZero's moves to its programmers. Indeed, no actual human could be the author of the moves. But, apart from differences in the mathematical details relating to the implementation of AlphaZero or ChatGPT, the two algorithms are just instances of AI, who bear the same relationships to their respective programmers and end-users. Therefore, if AlphaZero's programmers cannot possibly be the authors of AlphaZero's moves, then ChatGPT's programmers cannot be the authors of ChatGPT's output.

Furthermore, it is possible for conflicts to occur between the mental states of the programmers and the decisions of the machine. For example, AlphaZero's programmers may believe that King f8 is the best move in a certain chess position, while AlphaZero's assessment may that Knight c4 is the best move. Consequently, it is hard to see how the programmers can be the authors of a move they believe is sub-optimal. This puzzle applies to many situations where decisions are entrusted to AI systems. For example, it is possible that the human programmer of a self-driving vehicle would affect a left turn in each traffic situation, while the vehicle itself effects a right turn instead.[204] Or that the

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[202] *Id.* at 2-3. AlphaZero was, of course, provided with the rules of chess. For the type of learning models that AlphaZero is based on, see the overviews in Li Y., *Deep Reinforcement Learning: An Overview*, ARXIV (Nov. 26, 2018), https://arxiv.org/pdf/1701.07274.pdf[https://perma.cc/U3XT-TVBS], and M. Z. Alom et al., *A State-of-the-Art Survey on Deep Learning Theory and Architectures*, 8 ELECTRONICS 292 (2019).

[203] *See* Silver et al., *supra* note 201, at 4. On Stockfish, see *What Makes Stockfish Chess the Best AI Engine?*, SQUARE OFF NOW (Sept. 7, 2022), https://squareoffnow.com/blog/stockfish-chess-engine [https://perma.cc/RP6T-MTQX].

[204] *See, e.g.*, Harry Surden &Mary-Anne Williams, *Technological Opacity, Predictability, and Self-Driving Cars*, 38 CARDOZO L. REV. 121 (2016) (describing how self-driving vehicles operate).

programmers of ChatGPT disagree with the AI's choices as to how to continue a story or what adjective to use in some poem. When assessing these hypotheticals, it is essential to remember that we are interested in who the *actual* author is, not in who should be *considered* the author for policy purposes.[205] From that perspective, it seems that we have only two options: either the programmers are authors but act irrationally (since they sometimes believe one thing but do another), or the programmers are not authors. The latter option is by far preferable, as the first would involve imputing gratuitous irrationality to human beings.

To sum up, there are serious arguments against the view that programmers or developers are the authors of much of the artistic output of current AI models. In particular, this Section has rejected Ginsburg and Budiardjo's proposal in favor of programmer/developer authorship. Together with the arguments in the previous section, this should be sufficient to dispel any remaining appeal of that view and lay it to rest.

V. The Received View on Non-Human Authorship

In what follows, I discuss the Copyright Office's position that current law prohibits copyright protection of works generated by non-human authors. I first examine the Copyright Office's arguments that this prohibition follows from the Supreme Court decisions in *Burrow-Giles* and the *Trade-Mark Cases*, as well as from the statutory history of the 1976 Copyright Act. I conclude that the Office's arguments are unconvincing. Next, I survey the cases involving non-human authorship that the Copyright Office has recently relied on in *Thaler v. Perlmutter* and show that they only partially support the Office's view. I conclude that there is only limited authority that non-human authorship is entirely prohibited by current law.

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[205] So, in the case of self-driving cars, the question would be "Who actually made the right turn?," not "Who should be held responsible for the vehicle's making a right turn?."

A. Nineteenth-Century Precedent and Statutory History

The Copyright Office's present position is that human authorship is a necessary condition for copyright registration. Thus, the Copyright Office Compendium states in no uncertain terms that no protection is afforded to works that are not created by a human author:

> The U.S. Copyright Office will register an original work of authorship, provided that the work was created by a human being.

> The copyright law only protects "the fruits of intellectual labor" that "are founded in the creative powers of the mind." *Trade-Mark Cases*, 100 U.S. 82, 94 (1879). 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. *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 58 (1884).[206]

In accordance with this policy, examples of works that do not qualify for registration are "[a] mural painted by an elephant," "driftwood that has been shaped and smoothed by the ocean," "cut marks, defects, and other qualities found in natural stone," works generated by "a mechanical weaving process that randomly produces irregular shapes in the fabric without any discernible pattern," as well as "works produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author."[207]

This position on non-human authors has been recently re-asserted by the Copyright Office in the District Court of D.C.

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[206] U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 306 (3d ed. 2021). It is clear that the Copyright Office accepts that there can be *actual* authors that are not human. What the Office is denying is that those non-human actual authors are also legal authors, in the sense that they can the subjects of copyright protection.
[207] *Id*. § 313.2.

case *Thaler v. Perlmutter*.[208] In *Thaler*, the plaintiff attempted to register a work of visual art that he claimed had been created by a computer program.[209] In its response to Thaler's summary judgment motion, the Copyright Office claimed that "the human authorship requirement is a longstanding requirement of copyright law."[210] Part of the reason the Office offered in support of this claim is the language in *Burrow-Giles* and the *Trade-Mark Cases*. However, neither supports the Office's position.

When the Court, in *Burrow-Giles*, concluded that photographs are copyrightable insofar as "they are representatives of original intellectual conceptions of the author," it was responding to the argument that photographs are not authored writings because they are merely "reproduction[s] on paper of the exact features of some natural object or of some person."[211] The issue in *Burrow-Giles* had no connection to the question of human versus non-human authorship. It had to do with whether the photographs involved mere mechanical processes exhibiting none of the "novelty, invention, [and] originality" required for copyright protection, or whether photographs did exhibit such features.[212] The real contrast at work in *Burrow-Giles* is not between machines and humans, but between a person using the mechanical processes of photograph-making in an entirely rote and unoriginal manner, and a person using the same processes in a manner exhibiting originality and novelty. In both cases, we have a human being operating a mechanism that gives rise to a work.

Accordingly, the Court never considered the issue of whether the photography machinery somehow generated the

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[208] Thaler v. Perlmutter, No. 22-cv-01564, 2023 WL 5333236 (D.D.C. Aug. 18, 2023).
[209] *Id.*
[210] Defendant's Response to Plaintiff's Motion for Summary Judgment and Cross Motion for Summary Judgment at 19, Thaler v. Perlmutter, No. 22-cv-01564, 2023 WL 2889578 (D.D.C. Feb. 2, 2023).
[211] Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53, 56, 58 (1884).
[212] *Id.* at 59.

photograph in the same way in which AI could be said to generate a work. The question was only whether the machinery *as used by a human* left enough room for human creativity. That is made clear by the Court in its account of the plaintiff's position that photography was "the manual operation, by the use of these instruments and preparations, of transferring to the plate the visible representation of some existing object . . . ."[213] The Court declined to decide whether the outcome of the technical process of photography production (as described by the plaintiff) warranted copyright protection as a general rule,[214] but held that, in the case of the Oscar Wilde photograph, the elements of novelty and originality were satisfied.[215]

A correct understanding of the context in *Burrow-Giles* therefore shows that the question of whether non-humans can be protected by copyright was not on the table for the Court. Therefore, the Copyright Office's reliance on *Burrow-Giles* to support its view on non-human authorship is misplaced. Since the Court did not frame the issue in the same terms that we use when discussing AI (or other non-human) authorship, extrapolating from *Burrow-Giles* a general rule barring copyright protection for non-human authors is inadvisable.[216]

The language in the *Trade-Mark Cases* is even less apposite for drawing such sweeping conclusions about non-human authorship. In *In re Trade-Mark Cases*, when distinguishing trademarks from copyrightable matter, the Court noted that "[t]he writings which are to be protected are the fruits of intellectual labor, embodied in the form of books,

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[213] *Id.*

[214] *Id.*

[215] *Id.* at 60.

[216] Professor Arthur R. Miller, a CONTU Commissioner, is in agreement with this analysis. *See* Miller, *supra* note 54, at 1062 ("[I]t is implausible that the Court was considering that question in these isolated passages, let alone answering it. The Justices were dealing with the technology of the nineteenth century, and hardly with the question of whether a machine might be capable of 'intellectual conceptions.' There are limits to literal reading. By making references to 'he' and 'man,' the Court was no more excluding machines from eligibility for authorship than it was excluding women. There simply is less than meets the eye in the language of the opinion.").

prints, engravings, and the like."[217] The basic contrast the Court drew was that, unlike writings (the subject of copyright protection), trademarks do not require originality and do not depend on "any work of the brain," on "fancy or imagination."[218] Clearly, the Court was referring to human beings when discussing the "fruits of intellectual labor," because, in the nineteenth century, only human beings could be envisioned as authors. But, just as in *Burrow-Giles*, the issue under discussion was different from the human versus machine question we are facing in the twenty-first century. We should not take the Court, more than one hundred years ago, to be answering a question that was not before it at the time, especially when its pronouncements clearly addressed an entirely unrelated issue.

The Copyright Office's statutory arguments fare no better. The Office pointed out that the 1909 Copyright Act provided that only a "person" could "secure copyright for his work,"[219] and that, furthermore, "[i]n enacting the 1976 Act, Congress did not intend to change the standards for copyright authorship."[220] Specifically, the Copyright Office asserted that Congress intended to incorporate the "original work of authorship" standard under the 1909 Act.[221]

Leaving aside the not-exactly-straightforward logical connection between deciding to incorporate the 1909 originality standard and the concept of "person" as used in the 1909 Act, other important questions remain. For instance, why did the 1976 Act drop the "person" language in the 1909

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[217] United States v. Steffens, 100 U.S. 82, 94 (1879).

[218] *Id.*

[219] Defendant's Response to Plaintiff's Motion for Summary Judgment and Cross Motion for Summary Judgment at 13, Thaler v. Perlmutter, No. 22-cv-01564, 2023 WL 2889578 (D.D.C. Feb. 2, 2023).

[220] *Id.*

[221] *Id.* The House Report actually reads as follows: "The phrase 'original works of authorship,' which is purposely left undefined, is intended to incorporate without change the standard of originality established by the courts under the present copyright statute." H.R. Rep. No. 94-1476, at 51 (1976).

Act? The Copyright Office does not provide an answer. The decisive consideration against the Copyright Office's position is that Congress could have made it clear in the 1976 Copyright Act that only humans qualify for copyright protection, but it did not. In fact, the Register of Copyrights was faced with the problem of computer authorship as early as the 1960s, and it brought the matter to the attention of the Librarian of Congress in its 1965Sixty-Eighth Annual Report.[222] Ten years later, when the 1976 Copyright Act was adopted, the Act remained silent on the issue. A reasonable conclusion to draw from this silence is that Congress was not prepared, at the time, to rule out the possibility of copyright protection for works generated by non-humans.

To sum up, neither nineteenth century Supreme Court precedent, nor statutory history mandates the conclusion that current law imposes a blanket prohibition on copyrighting works produced by non-humans.

B. Current Case Law on Non-Human Authors

In its response to Thaler's motion for summary judgment, the Copyright Office also invoked several contemporary cases to support its position. However, a close look at these decisions offers at best partial support for the Office's conclusions.

(1) In *Urantia Foundation v. Maaherra*,[223] the Ninth Circuit addressed the issue of the copyrightability of a book containing what both parties agreed were "the words of celestial beings rather than human beings,"[224] relayed to humanity through the patient of a Chicago psychiatrist.[225] The court noted that "[t]he copyright laws, of course, do not expressly require 'human' authorship,"[226] but agreed with the

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[222] *See* REGISTER OF COPYRIGHTS, SIXTY-EIGHTH ANNUAL REPORT OF THE REGISTER OF COPYRIGHTS 5 (1966). Note that the Register of Copyrights did not rely on *Burrow-Giles* or the *Trade-Mark Cases* to infer that the requirement of human authorship was already established in case law. On the contrary, the Register raised the issue of computer authorship as a *bona fide* new problem for established copyright law.

[223] 114 F.3d 955 (9th Cir. 1997).

[224] *Id*. at 958.

[225] *Id*. at 957.

[226] *Id*. at 958.

defendant that copyright law was not intended to protect the creations of divine beings.[227] Therefore, "in this case" some amount of human creativity was required for the book to be copyrightable.[228] According to the court, "[a]t the very least, for a worldly entity to be guilty of infringing a copyright, that entity must have copied something created by another worldly entity."[229]

Note the three layers of precaution the court is taking here. First, the court acknowledged that human authorship is nowhere expressly required by copyright law. Next, the court limited its holding to "this case," meaning the exceptional situation in which a supposed extraterrestrial being is claimed to be the author of the work. Finally, the court placed a restriction on liability for copyright infringement, namely that liability is premised on copying something from a worldly entity (as opposed to some spiritual entity). These precautions are all consistent with AI being author of artistic works, as AI systems are entities that exist in the natural universe. In fact, the court explicitly acknowledged that "considerable controversy has arisen in recent years over the copyrightability of computer-generated works," and takes care not to extend its holding to those cases.[230]

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[227] *Id.*

[228] *Id.*

[229] *Id.*

[230] *Id.* Ultimately, the court determined that, whether or not the book was actually authored by celestial beings, the book was copyrightable as a compilation of revelations, and that the human beings who "compiled, selected, coordinated and arranged" those revelations are entitled to copyright protection. *Id.* at 958-59. So, even on the supposition that the actual authors of the revelations were celestial beings, the human beings who wrote those revelations down were the actual authors of the compilation of revelations, due to the fact that they selected and arranged the revelations in the exact form they took in the book. The court pointed out that an earlier case, *Oliver v. Saint Germain Foundation*, 41 F. Supp. 296 (S.D. Cal. 1941), found no copyright infringement in a book purportedly authored by a spiritual being and transcribed by a human being, where what had been copied was not the selection and arrangement of the revelations, but the subject matter of the revelations themselves. *Id.*

(2) In *Naruto v. Slater*,[231] the Ninth Circuit held that, although a monkey has Article III standing to sue for copyright infringement under the Constitution, it does not have statutory standing to sue under the Copyright Act.[232] The case concerned a monkey (Naruto) in a wildlife reserve who took a number of selfies with a camera left unattended by a photographer.[233] The photographer later published the photographs, and together with the publisher, claimed copyright ownership in the selfies.[234] The court relied on its own precedent in *Cetacean Community v. Bush*[235] to hold that, since the Copyright Act does not expressly grant animals standing to sue, Naruto did not have statutory standing.[236] The Court's conclusion that the Copyright Act does not permit animal-initiated lawsuits was strengthened by the fact that the Act provides for inheritance rights for an author's "children," refers to an author's "grandchildren" or "widow," and uses terms such as "widower" or "legitimate."[237] All these terms refer to human beings, meaning that it was not within the contemplation of Congress to allow animals to sue under the Copyright Act.[238]

This decision may provide some indirect support for the view advocated by the Copyright Office, namely that authors of works need to be human. Nevertheless, the Ninth Circuit in

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at 959. The *Oliver* court does state at one point that "[t]he law deals with realities and does not recognize communication with and the conveyances of legal rights by the spiritual world as the basis for its judgment." 41 F. Supp. 296 at 299. Just as with the *Urantia* decision, this assertion is not equivalent to conditioning copyright protection on human authorship, but at best on this-worldly authorship (and AI systems, as noted in the main text, are natural entities, not supernatural ones).

[231] 888 F.3d 418 (9th Cir. 2018).

[232] *Id*. at 424-27.

[233] *Id*. at 420.

[234] *Id*.

[235] 386 F.3d 1169 (9th Cir. 2004).

[236] *Naruto*, 888 F.3d at 426. The rule the Ninth Circuit had fashioned in *Cetacean* is summarized by the *Naruto* court as follows: "if an Act of Congress plainly states that animals have statutory standing, then animals have statutory standing. If the statute does not so plainly state, then animals do not have statutory standing." *Id*.

[237] *Id*.

[238] *Id*.

Naruto only decided the standing issue and did not address the copyright authorship or ownership of animals at all. Moreover, the connection between the decision in *Naruto* and the Copyright Office's refusal to grant copyright protection in *Thaler* is not obvious. Thaler claimed that he was the copyright owner of the work authored by the AI he designed, either because he owned the AI, or because the output of the AI was a work for hire.[239] Even if the reasoning in *Naruto* applies to AI cases, the most that *Naruto* can be taken to establish is that an AI cannot sue. But Thaler himself did not care whether the AI had standing. He wanted to register the AI-generated work and be the owner of the copyright. The Copyright Office does not explain how we get from the premise that the AI cannot sue to the conclusion that Thaler cannot get registration based on either of his two theories. It could very well be the case that (i) the AI cannot sue, (ii) the AI is the author of the work, and (iii) Thaler owns the copyright in the AI-generated work because the latter can be deemed a work for hire. The discussion in *Naruto* does not seem to prohibit statements (i) through (iii) from being true.[240]

The court's observation that the language of the Copyright Act, which includes terms like "children," "grandchildren," or "widower," applies only to human beings lends some support to the Copyright Office's position, but we need to remember that corporations can also be authors under the work-for-hire provisions of the Act, although they cannot bear children or be widowers. As Nina Brown has noted, "the Copyright Act [also] permits these non-human entities [corporations and

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[239] *See* Thaler v. Perlmutter, No. 22-cv-01564, 2023 WL 5333236 at *3 (D.D.C. Aug. 18, 2023).

[240] *See also* Denicola, *supra* note 183, at 274-75 ("Th[e] holding [in *Naruto*] . . . does not necessarily compel the conclusion that a monkey—or a computer—cannot create a copyrightable work that is owned by a human author.").

unincorporated associations] to apply for, own, and bring suit—without express authorization."[241]

Unlike the Ninth Circuit, the district court in *Naruto v. Slater* explicitly addressed the authorship question and determined that "Naruto is not an 'author' within the meaning of the Copyright Act."[242] This is a much stronger stance than the Ninth Circuit's, and this view, if applied to AI cases, could indeed do away with claims of AI authorship. However, in the context of our discussion, the district court's position is insufficiently supported. The court notes that "the Copyright Act does not 'plainly' extend the concept of authorship or statutory standing to animals. To the contrary, there is no mention of animals anywhere in the Act."[243] But the requirement that a statute "plainly extend" coverage to a certain category of entities relates to standing, not to authorship.[244]

Apart from the claim about plain extension, the district court also cites the Copyright Office's position, as well as *Urantia Foundation v. Maaherra*,[245] *Aalmuhammed v. Lee*,[246] and *Community for Creative Non-Violence v. Reid.*[247] I have already responded to the Copyright Office's argument.[248] As for the case law, the district court noted that the three cases spoke in terms of "human beings" or "persons" when

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[241] Nina I. Brown, *Artificial Authors: A Case for Copyright in Computer-Generated Work*, 20 COLUM. SCI. & TECH. L. REV. 1, 31 (2018). Brown also observes that there is a conflict between the methodological approach of the Ninth Circuit in *Naruto* and in *Urantia*. *Id*. at 32.

[242] Naruto v. Slater, No. 15-cv-04324, 2016 WL 362231, at *6 (N.D. Cal. Jan. 28, 2016).

[243] *Id*. at *5.

[244] To that effect, the *Naruto* district court cited the *Cetacean* decision: "[t]he court held that 'if Congress and the President intended to take the extraordinary step of authorizing animals as well as people and legal entities to sue, they could, and should, have said so plainly.'" *Id*.

[245] 114 F.3d 955 (9th Cir. 1997).

[246] 202 F.3d 1227 (9th Cir. 2000).

[247] 490 U.S. 730 (1989).

[248] In other words, in determining whether or not the Copyright Office is correct, we cannot rely on a source (such as the district court in *Naruto*) that itself presupposes that the Copyright Office is correct.

discussing authorship under the Copyright Act.[249] However, as already discussed, the court in *Urantia* was very cautious in circumscribing its decision to the specific facts at issue. As for *Aalmuhammed* and *Reid*, while they did use the term "person[s]" to describe authors, they did not address the issue of non-human authorship at all, so it would not be advisable to extrapolate from their generic use of the term "person."

(3) In *Kelley v. Chicago Park District*,[250] the Seventh Circuit considered the copyrightability of *Wildflower Works*, a work advertised as "living art" and consisting of two large elliptical flower beds installed in Chicago's Grant Park that contained a variety of plant species.[251] Chapman Kelley, the artist, chose the wildflowers so that they "blossom sequentially, changing colors throughout the growing season and increasing in brightness towards the center of each eclipse."[252] But the court held *Wildflower Works* to be uncopyrightable because it lacked the requirements of authorship and fixation necessary for copyright protection.[253] The court cited *Patry on Copyright* to the effect that "authorship is an entirely human endeavor," and held that "[a]uthors of copyrightable works must be human; works owing their form to the forces of nature cannot be copyrighted."[254] The court then determined that Chapman Kelley was not the author of the living garden; instead, the garden owed its existence to nature.[255]

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[249] Naruto v. Slater, No. 15-cv-04324, 2016 WL 362231, at *5 (N.D. Cal. Jan. 28, 2016).

[250] 635 F.3d 290 (7th Cir. 2011).

[251] *Id*. at 292-93.

[252] *Id*. at 293.

[253] *Id*. at 303.

[254] *Id*. at 304. As Jonathan Siderits pointed out, at the time, the statement in *Patry* was not justified by the available evidence. *Patry* relied on the Copyright Office Compendium, which did not exclude human forces "entirely." *See* Jonathan Siderits, *The Case for Copyrighting Monkey Selfies*, 84 U. Cin. L. Rev. 340-41 (2018).

[255] *Id*. The court's holding is convincingly criticized by Professor McCutcheon. *See generally* Jani McCutcheon, *Natural Causes: When Author Meets Nature in Copyright Law and Art. Some Observations*

The explicit language in *Kelley* provides the strongest support in favor of the Copyright Office's position on the prohibition of non-human authorship. However, just as with the district court's opinion in *Naruto*, it is hard to shake the feeling that some sort of sleight of hand has been performed: on the human authorship issue, the Court relied on *Patry on Copyright*, which relied on the Copyright Office Compendium,[256] which ultimately relied on an a-contextual and incorrect interpretation of *Burrow-Giles* and the *Trade-Mark Cases*. Of course, in its response to Thaler's motion for summary judgment, the Office did not neglect to rely heavily on *Kelley*,[257] so there appears to be a kind of vicious bootstrapping at work here, insofar as courts rely on the Copyright Office's position without seriously investigating the Office's interpretation of precedent. Meanwhile, the Copyright Office gets to rely, in turn, on the very decisions that adopted its views. The criticism here is not that a court's reliance on the views of the Copyright Office is problematic *per se*. Rather, such reliance should, preferably, be accompanied by more rigorous scrutiny of the Copyright Office's reasoning when courts are confronted with novel and unusual situations such as the ones under discussion here, namely the copyright status of works created by animals or AI.

To conclude, some recent cases on non-human authorship (such as *Urantia* and the Ninth Circuit in *Naruto*) do not support the position of the Copyright Office, while others (the district court in *Naruto*, as well as *Kelley*) do—though the latter's methodological credentials are dubious at best. In the next Part, I argue that there are good policy reasons why works authored by AI systems should remain, at least for now, in the public domain. Thus, while I do not subscribe to

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Inspired by Kelley v. Chicago Park District, 86 U. CIN. L. REV. 707 (2018). *See also* Lily Ericsson, *Creative Quandary: The State of Copyrightability for Organic Works of Art*, 23 SETON HALL J. SPORTS & ENT. L. 359, 371-83 (2013).

[256] *See supra*, note 254.

[257] Defendant's Response to Plaintiff's Motion for Summary Judgment and Cross Motion for Summary Judgment at 18, Thaler v. Perlmutter, No. 22-cv-01564, 2023 WL 2889578 (D.D.C. Feb. 7, 2023).

the Office's justifications, I ultimately agree with its stance that AI-generated work should not be copyrighted. I rely on considerations distinct from those of the Copyright Office to reach this conclusion.

VI. Pseudo Art

AI-generated works should remain in the public domain, at least for now. I first briefly present two types of plausible arguments that have been made in the literature in support of this conclusion. I then argue that AI-generated works are fundamentally different from traditional art because of their a-historical and a-contextual character. Such works, I conclude, are best seen not as art, but as pseudo art, or simulacra. Their place, for the time being (and until more powerful AI becomes available), is in the public domain. I close by evaluating pseudo art from the perspective of the Constitution's Copyright Clause and conclude that pseudo art does not currently satisfy the requirements of the Clause.

A. *AI Works and the Incentive-Based Justification of Copyright Law*

The most radical argument for the view that AI-generated works should remain in the public domain challenges the incentive-based framework of copyright law itself. Professor Eric Johnson, relying on evidence from behavioral economics and social psychology, has argued that the view that IP rights (in particular, patent and copyright) are necessary to encourage creativity is, as a general matter, entirely on the wrong track.[258] According to Johnson, the empirical evidence simply does not support the incentive theory of IP rights. Johnson is not the only theorist who has emphasized the inefficiency of IP law in promoting innovation. While somewhat more cautious than Johnson, Professor Mark Lemley has also pointed out that empirical studies conducted

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[258] *See generally* Eric E. Johnson, *Intellectual Property and the Incentive Fallacy*, 39 FLA. ST. U. L. REV. 623, 632 (2012).

on various aspects of IP law are far from justifying the current IP regime.[259] Lemley notes the tendency of IP scholars and policymakers to resist empirical data when it does not conform to their theoretical preconceptions, thereby immunizing their preferred view from evidence-based criticism.[260] Michele Boldrin and David Levine are similarly skeptical of the relationship between IP rights and innovation in their book-length study dedicated to the topic.[261] The authors' analysis of statistical data concerning music production in the eighteenth and nineteenth centuries, as well as their surveys of national and cross-country economic studies on patent development in the nineteenth and twentieth centuries, and of various cases of simultaneous scientific discoveries, lead them to conclude "intellectual monopoly is absolutely not necessary for great inventions to take place."[262] Forceful challenges to the incentive theory as providing a complete justification of copyright law have also been advanced independently by Professors Rebecca Tushnet[263] and Diane Leenheer Zimmerman.[264]

This criticism needs to be taken seriously, as it shows that the current IP framework may lack justification. And naturally, in the absence of a similarly compelling foundation for IP law,[265] there is no reason for any IP regime at all to exist. Consequently, AI-generated works should fall into the public domain as soon as they are created. However, even

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[259] *See* Mark A. Lemley, *Faith-Based Intellectual Property*, 62 UCLA L. REV. 1328, 1334-35 (2015).

[260] *Id.* at 1335-37. Lemley plausibly identifies this retreat from empirical falsifiability as "a form of religious belief." *Id.* at 1337.

[261] MICHELE BOLDRIN & DAVID K. LEVINE, AGAINST INTELLECTUAL MONOPOLY (2008).

[262] *Id.* at 208.

[263] *See generally* Rebecca Tushnet, *Economies of Desire: Fair Use and Marketplace Assumptions*, 51 WM. & MARY L. REV. 513 (2009).

[264] *See generally* Diane Leenheer Zimmerman, *Copyrights as Incentives: Did We Just Imagine That?*, 12 THEORETICAL INQUIRIES IN LAW 29 (2011); *see also* Laura A. Heymann, *A Tale of (At Least) Two Authors: Focusing Copyright Law on Process Over Product*, 34 J. CORP. LAW 1009, 1010 (2009).

[265] For a rights-based justification for IP law, see, for example, ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY (2011).

assuming some version of the incentive theory is correct, providing protection to AI-generated works does not make a lot of sense. As I showed in Part IV, if anyone is entitled to copyright protection for these works, it is the AI itself. But, as Pamela Samuelson (among others) pointed out in her influential 1986 article, "it simply does not make any sense to allocate intellectual property rights to machines because they do not need to be given incentives to generate output."[266] Moreover, were one to be tempted to assign copyright in the AI-generated works to the AI developers, the programmers and developers are already protected by the copyright coverage afforded the underlying software running on the AI system, so there is no reason to extend copyright to the AI's products as well.[267] It is conceivable that some users may benefit from copyright protection in cases where it can be shown that they are the actual authors, but no blanket policy of rewarding users in this manner is workable, precisely because such a policy would be rewarding the wrong actors. As previously noted, the more advanced AI becomes, the less control users have over the output.

B. The Historicity of Artworks

The arguments in the previous section rely, respectively, on the incentive-based structure of copyright law and on the inefficiency of incentives for various entities potentially entitled to copyright (the AI and the programmers). However, scholars have overlooked arguments based on the features of AI-generated works themselves, which might ultimately tip the balance in favor of either copyright protection or the public domain. So far, commentators and policymakers have taken it for granted that AI-generated artworks are artworks in the same sense as traditional works in the history of art. ChatGPT's *The Forgotten Melody* is not

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[266] Samuelson, *supra* note 183, at 1199. *See also* OTA Report, *supra* note 196, at 76; Bridy, *supra* note 58, at 26; Hedrick, *supra* note 52, at 334.
[267] *See* Yu, *supra* note 51, at 1263-64. *See also* Ginsburg & Budiardjo, *supra* note 160, at 448. For a dissenting view, *see* Brown, *supra* note 241, at 22-23.

supposed be different in kind from Kafka's *In the Penal Colony*.[268] They are both short stories. Likewise, Midjourney's image outputs are not essentially different from those of Monet or Rothko. Given that AI-generated art is perceptually indistinguishable from traditional art, these conclusions seem natural and unsurprising.

However, the assumption that AI-generated art is essentially on the same ontological footing as traditional art is questionable. In what follows, I argue that AI-generated works lack an essential feature that is possessed by what we have traditionally regarded as works of art—namely, a history.

All works of art we have yet been acquainted with have a place in the history of art. In other words, they have a history. What I mean is not simply that they came into existence at some point in time. In that sense, everything has a history, including a pile of trash or volcano ash. But those objects are not art. Works of art have an aesthetic history, in the sense that it matters to their being art that they are positioned in a certain way to similar objects that came before them in the history of art. Artworks have a crucial and ineliminable historical dimension. As Arthur Danto put it in a seminal essay sixty years ago, "[t]o see something as art requires something the eye cannot decry—an atmosphere of artistic theory, a knowledge of the history of art: an artworld."[269]

The aesthetic puzzle at the center of Danto's outlook is showcased by numerous instances of modern art that seem to blur the distinction between reality and art. One example is the Brillo boxes of Andy Warhol. Warhol constructed objects made of wood and painted them to look like cardboard Brillo cartons.[270] If Warhol had made his boxes out of cardboard,

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[268] FRANZ KAFKA, *In the Penal Colony*, *in* THE METAMORPHOSIS, IN THE PENAL COLONY AND OTHER STORIES 189 (Joachim Neugroschel trans., 1995).

[269] Arthur Danto, *The Artworld*, 61 J. PHIL. 571, 580 (1964). Danto developed his views in ARTHUR C. DANTO, THE TRANSFIGURATION OF THE COMMONPLACE (1981).

[270] Danto*, supra* note 269, at 580. The real Brillo boxes contained soap pads.

they would still have been art.[271] But, while the Brillo company could have made their boxes out of wood, like Warhol, that would not have turned them into art.[272] Why is one object (e.g., a Brillo box) a mere object, and another (looking exactly like the first) art?[273] Danto's answer, which is a plausible solution to the puzzle, is that the work of art is art because of its place in an artistic context, which the mere object lacks. "What in the end makes the difference between a Brillo box and a work of art consisting of a Brillo Box is a certain theory of art. It is the theory that takes it up into the world of art and keeps it from collapsing into the real object which it is . . . ."[274] This theory of art must pre-date the appearance of the new artwork. It is precisely because this theory already exists that the new artwork can situate itself in the context of the theory (even if it rejects the theory) and thereby be a work of art and not a mere object.

Danto's view is vindicated by the way in which art critics conduct their discourse with respect to novel works of art. For instance, in connection with Marcel Duchamp's readymades (including the famous *Fountain*, a urinal Duchamp signed 'R. Mutt' and presented as a work of art),[275] it has been said that "[s]ome of the implications of Duchamp's conceptual revolution include the readymade's critique of art institutions, its relationship to painting, the connection between the art object and the industrial world, and the co-dependency of the

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[271] *Id.*

[272] *Id.*

[273] Another example discussed by Danto is a rhomboid bed created by Claes Oldenburg. *Id.* at 575. Since this work is not distinguishable from a real bed and could actually be used as a bed, what makes it art, and not a mere bed?

[274] *Id.* at 581.

[275] According to some assessments, Duchamp's *Fountain* is "widely considered the most influential artwork of the twentieth century." Robert Kirk Walker & Ben Depoorter, *Unavoidable Aesthetic Judgments in Copyright Law: A Community of Practice Standard*, 109 Nw. U. L. Rev. 343, 373 (2015).

visual and the linguistic."[276] These interpretations of Duchamp's readymade objects place them in a context where these objects raise questions about the concept of art and the social context in which art is produced and consumed. When Duchamp's urinal was sitting in its natural environment, it raised no questions of this sort. Once it was lifted from that environment and presented as an art object, it acquired a certain positioning with respect to the art that came before it, to other contemporary art objects, and to society in general. This shift in context, according to Danto, is what made it art.[277]

Some version of this view of artworks must be correct if we are to make sense of modern practices like readymades, conceptual art, pop art, and performance, and if we are to be able to explain how works as different as Bernini's *Bust of Costanza Bonarelli* and Duchamp's *Fountain* are both works of art.[278] It may not be easy to specify in detail the process through which a work of art emerges out of what were previously mere objects, but it is likely that the artist's intentions play a significant role. Thus, according to Jerrold Levinson, "a work of art is a thing intended for regard-as-a-work-of-art, regard in any of the ways works of art existing prior to it have been correctly regarded."[279] On Levinson's view, the artist needs to intend to place her creation in a certain historical context for it to count as art: "[f]or a thing to be art it must be linked by its creator to the repository of art existing at the time . . . ."[280] If the artist does not intend her

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[276] ADINA KAMIEN-KAZHDAN, REMAKING THE READYMADE: DUCHAMP, MAN RAY, AND THE CONUNDRUM OF THE REPLICA 71 (2018).

[277] *See* Danto, *supra* note 269, at 581.

[278] *See* Gian Lorenzo Bernini, *Bust of Constanza Bonarelli (Detail)*, 55 TAMPA REV. 52, 52 (2018); Walker & Depoorter, *supra* note 275, at 373.

[279] Jerrold Levinson, *Defining Art Historically*, *in* MUSIC, ART, AND METAPHYSICS 3, 6 (2011). This is only the first approximation of a definition of artworks, which Levinson refines over the course of his essay. But this is not the place to dwell on the details of his view.

[280] *Id*. at 7. *See also* Jerrold Levinson, *The Irreducible Historicality of the Concept of Art*, *in* CONTEMPLATING ART: ESSAYS IN AESTHETICS 13, 13 (2006) ("[O]ur present concept of art is *minimally historical* in the following sense: whether something is art now depends, and ineliminably, on what has been art in the past."); Christine Haight Farley, *Judging Art*,

product to occupy a certain position relative to what has historically been regarded as art, it becomes hard to see the artist's enterprise as making art at all.[281] Consider the example of a child dripping paint on a canvas while playing a game, as opposed to Jackson Pollock dripping paint on canvas to create a painting. The resulting patterns on the canvas may even be identical, but only Pollock has created art because he envisaged his enterprise as taking place within an art-historical context. The child may have given birth to a perceptually indistinguishable pattern of paint on canvas, but that does not make her production a work of art.

Under a historically-based theory of art, AI-generated works do not qualify as art. The AI systems currently in existence do not, as far as we know, have the sort of intentional apparatus required for them to be creators of works of art. ChatGPT did not intend for *The Forgotten Melody* to be regarded as previous works of art have been regarded, because ChatGPT did not intend anything, it just responded mechanically to commands.[282] While ChatGPT did author *The Forgotten Melody*, that production is very different from Henry James' *The Turn of the Screw*, and not merely because of its aesthetic value. *The Forgotten Melody* has the wrong kind of history to be considered alongside human-produced art. It is not the result of the required artistic intentions to count as what we have been traditionally calling 'short stories.' Rather, it is a simulacrum of a short story.

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79 Tul. L. Rev. 805, 853 (2005) ("Any art's claim to be art is relational to what has been already said about art and what has already been done by other artists."); T. J. Diffey, *On Defining Art*, 19 British J. Aesthetics 15, 18 ("[W]orks of art are identified not by philosophical definition but by history"). For one proposal as to how a historical definition of art may be applied by courts, see Glen Cheng, *The Aesthetics of Copyright Adjudication*, 19 UCLA Ent. L. Rev. 113, 151-58 (2012).

[281] Levinson, *supra* note 280, at 6.

[282] Perhaps we could ascribe to ChatGPT some minimal intention to create the story. But that is not the kind of artistic intention required to turn the story into art.

I call AI-generated works 'pseudo art', as they do not satisfy the historical conditions that define works of art as we know them, although they may be perceptually indistinguishable from actual artworks. Pseudo art is a-contextual and a-historical. The AI systems that are producing it are not responding to any problems or objectives arising from a certain historical and aesthetic context, like human artists are. Rather, these systems are responding to commands and are indifferent to whether they are asked to deliver a short story, a sonata, a newspaper article, or a prediction about the price of mini-corn futures in the next quarter. In contrast, here is how a well-known art critic describes the artistic problems facing Paul Cézanne, one of the foundational painters at the dawn of the modern age:

> In itself the problem was not new to art. We remember that the conquest of nature and the invention of perspective in the Italian *Quattrocento* had endangered the lucid arrangements of medieval paintings, and had created a problem which only Raphael's generation had been able to solve. Now the same question was repeated on a different plane. The dissolution of firm outlines in flickering light and the discovery of coloured shadows by the Impressionists had once again posed a new problem: how could these achievements be preserved without leading to a loss of clarity and order? To put it into simpler language: Impressionist pictures tended to be brilliant but messy. Cézanne abhorred messiness. Yet he did not want to return to the academic conventions of drawing and shading to create the illusion of solidity any more than he wanted to return to 'composed' landscapes to achieve harmonious designs. He was faced with an even more urgent issue when he pondered the right use of colour. Cézanne longed for strong, intense colours as much as he longed for lucid patterns. . . . The Impressionists had given up mixing the pigments on the palette and had

applied them separately on to the canvas in small dabs and dashes to render the flickering reflections of an 'open-air' scene. Their pictures were much brighter in tone than any of their predecessors but the result did not yet satisfy Cézanne. He wanted to convey the rich and unbroken tones that belong to nature under southern skies, but he found that a simple return to the painting of whole areas in pure primary colours endangered the illusion of reality. Pictures painted in this manner resemble flat patterns and fail to give the impression of depth. Thus Cézanne seemed to be caught up in contradictions all round.[283]

As we can see, the critic formulates the problems that Cézanne was attempting to solve as belonging to an art-historical tradition that had provided different answers to these problems over the course of the history of painting, answers which did not satisfy Cézanne. The complexity of the artistic issues confronting Cézanne cannot be brushed aside as belonging merely to the genesis of Cézanne's paintings, which could otherwise be understood on their own merits, once in existence. The passage suggests that, in the absence of these problems that Cézanne had to solve, we would have no clue how to assess what the painter was doing, let alone evaluate his paintings.[284]

No such analysis can be performed with respect to an AI-generated work: the work is a-contextual. The AI was not

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[283] E. H. GOMBRICH, THE STORY OF ART 406 (6th ed. 1954).

[284] *See also* Graham McFee, *The Historicity of Art*, 38 J. AESTHETICS & ART CRITICISM 307, 312 (1980) ("Understanding a work of art is, in part, understanding how that work was created (the artist's theory), the artist's intentions or projects, the artist's problems."). In a similar vein, and as part of their proposal of a 'Community of Practice' standard to be adopted for the adjudication of aesthetic questions, Walker and Depoorter require that "the community be an accurate reflection of the aesthetic norms and traditions that informed the works." Walker & Depoorter, *supra* note 275, at 376.

trying to solve any artistic problems, because it is not capable of such reasoning. It lacks not only the necessary connection to an art-historical context, but also an embodied life, which may plausibly be thought to be an essential factor when it comes to human creativity. Human artists, as opposed to AI, have complex relationships with their physical and social environments. Their mental make-up (beliefs, desires, hopes, plans, emotions) is influenced by these relationships, and it is unclear how the interactions between these environments and humans could be modeled in the architecture of an AI. The literature on AI intentionality cannot rescue pseudo art in this connection, as that literature is barely in its infancy, and disagreement about the very possibility of intentionality in AI systems abounds.[285] It is noteworthy, however, that no one has yet suggested that any AI today has acquired the rich conceptual and intentional apparatus that, according to historical views of art, is necessary to actually produce art.

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[285] For skepticism about machine learning in this connection, see, for example, GARY MARCUS & ERNEST DAVIS, REBOOTING AI: BUILDING ARTIFICIAL INTELLIGENCE WE CAN TRUST 64, 66 (2019) ("Deep learning is a very different beast from a human mind. At best, deep learning is a kind of idiot savant, with miraculous perceptual abilities, but very little overall comprehension. . . . For real intelligence you also need reasoning, language, and analogy, none of which is nearly so well handled by current technology. . . . What we need is not just 'deeper' learning, in the sense of having more layers in a neural network, but *deeper understanding*. We need systems that can truly reason about the complex interplay of entities that causally relate to one another in an ever-changing world."). For partial reviews of the issues at stake in the area of AI intentionality, see, for example, Drew McDermott, *Artificial Intelligence and Consciousness*, *in* THE CAMBRIDGE HANDBOOK OF CONSCIOUSNESS 117 (Philip David Zelazo, Morris Moscovitch & Evan Thompson eds., 2007); William S. Robinson, *Philosophical Challenges*, *in* THE CAMBRIDGE HANDBOOK OF ARTIFICIAL INTELLIGENCE 64 (Keith Frankish & William M. Ramsey eds., 2014); Will Bridewell, *Taking the Intentional Stance Seriously, or "Intending" to Improve Cognitive Systems*, ARXIV (Nov. 8, 2022), https://arxiv.org/abs/2209.11764 [https://perma.cc/P54M-XPLP]; Zhu Jichen & D. Harrell, *System Intentionality and the Artificial Intelligence Hermeneutic Network: the Role of Intentional Vocabulary*, U.C. IRVINE: DIGITAL ARTS & CULTURE (Dec. 12, 2009), https://escholarship.org/uc/item/3rd2s695 [https://perma.cc/W8VC-FY7P]; Deborah G. Johnson & Mario Verdicchio, *AI, Agency and Responsibility: The VW Fraud Case and Beyond*, 34 A.I. & SOC'y 639 (2019).

C. *Interpreting and Evaluating Works of Art*

So far, I have focused on the way that pseudo art differs from traditional art because it has a different type of genesis: one that, based on plausible and influential views about what constitutes an artwork, does not warrant inclusion of pseudo art within the category of art as we know it. But, apart from the different processes involved in the creation of art and of pseudo art, the fundamental dissimilarity between the two is perhaps best revealed through interpretation. Works of art are objects of interpretation, as they invite consumers to assign meaning or significance to them.[286] But interpreting a work of art is a highly contextual enterprise, and it is precisely that context which is missing in the case of pseudo works. To illustrate this contrast, consider Borges' famous short story *Pierre Menard, Author of the Quixote*, in which the main character, drawing on his own experience in the twentieth century, strives to re-create word for word and without copying the text of Miguel de Cervantes' *Don Quixote*.[287] As the narrator points out, although the two texts (the original *Don Quixote* and Pierre Menard's *Quixote*) are completely identical, they invite different interpretations. The narrator exemplifies this with the following passage, which appears in both texts:

> . . . truth, whose mother is history, rival of time, depository of deeds, witness of the past,

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[286] *See* Robert Stecker, *Interpretation*, *in* THE ROUTLEDGE COMPANION TO AESTHETICS 309, 309 (Berys Gaut & Dominic McIver Lopes eds., 2013) ("When we interpret works of art and literature we are seeking to understand or to appreciate them. We do this by attempting to discover or ascribe on some basis, a meaning in or to the work in question, or to determine what significance the work has for us."); Peter Lamarque, *Objects of Interpretation*, *in* WORK AND OBJECT: EXPLORATIONS IN METAPHYSICS OF ART 153, 171 (2010) ("[Works] are objects of interpretation . . . in the sense that they are the kinds of entities that conventionally invite (and, in the case of works of art, reward) interpretation.").

[287] *See* Jorge Luis Borges, *Pierre Menard, Author of the Quixote*, *in* COLLECTED FICTIONS 88, 89 (1998).

exemplar and adviser to the present, and the future's counselor.[288]

As part of Cervantes' novel, the passage invites the following perfunctory analysis: "This catalog of attributes, written in the seventeenth century, and written by the 'ingenious layman' Miguel de Cervantes, is mere rhetorical praise of history."[289] On the other hand, written by Pierre Menard in the twentieth century, the exact same words take on a much richer meaning, infused with the pragmatism of William James:

> History, the *mother* of truth!—the idea is staggering. Menard, a contemporary of William James, defines history not as a delving into reality but as the very *fount* of reality. Historical truth, for Menard, is not 'what happened'; it is what we *believe* happened. The final phrases—*exemplar and adviser to the present, and the future's counselor*—are brazenly pragmatic.[290]

Borges' example exhibits the fundamental dependence of interpretation on context. But it is exactly this context which AI-generated works lack. Take ChatGPT's *The Forgotten Melody*, the short story we started with. It is hard to get a grip on anything more substantial than the explicit content of the story. As soon as we try to go beyond the dictionary meaning of the words in the story, we are left without any contextual support. Because of the story's a-historical character, any serious attempt at interpretation will be severely impacted. It is impossible, for instance, to specify the category of short story that *The Forgotten Melody* exemplifies. Given the inanity and triteness of the story, is it some sort of pastiche or parody of a fairy tale, using worn-out phrases like "sleepy town nestled by the sea" and "the depths of the forgotten past" to ironic effect? Is it a religious allegory (where the "sleepy town" is meant to symbolize people's loss of faith, to be re-awakened by Lily acting as the prophet of a newly-

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[288] *Id.* at 94.
[289] *Id.*
[290] *Id.*

discovered faith, represented in turn by the piano melody)? Or is it just a *bona fide*, badly written fairy tale? Since the story was produced by ChatGPT, we don't know. But if we do not know the type of short story we are reading, how can we interpret it at all?[291]

At this point, one might object that AI-generated works do not prohibit all interpretive activities. In *The Forgotten Melody*, for instance, we can identify a plot and perhaps a moral of the story: that one can find beauty in surprising and forgotten places. There are at least two replies to this objection: a radical reply, and a more moderate reply. According to the radical reply, *The Forgotten Melody* is mere gibberish. It is an illusion that *The Forgotten Melody* is a short story, when in fact it does not even use language, but rather a simulacrum of language. Although it may sound strange at first, this view needs to be taken seriously, because it follows from two plausible assumptions, namely (i) that the meaning of a work of art (such as a short story) depends on the intentions of the creator, and (ii) that current AI systems do not have the complex intentional apparatus required to create art. I have already noted that the second assumption is a plausible view, given what we know about the AI that have been built so far. And the first assumption has been defended by Steven Knapp and Walter Benn Michaels by showing that its alternative (namely, the view there can be intention-less meaning) is highly counterintuitive. Knapp and Michaels ask

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[291] Compare that scenario to Stecker's remarks on the meaning of William Blake's poem *The Sick Rose*: "'The Sick Rose' cannot be fully understood outside the context of the poems that accompany it in the *Songs of Innocence and Experience*, of its historical period and so on. An example of this is the choice of the rose as the sick flower. The rose had a conventional significance in Blake's poetic tradition as, for example, a symbol of fragile, transient beauty, but this hardly exhausts its significance in Blake's poetry, which can only be determined contextually." Stecker, *supra* note 286, at 315-16. *See also* Harold Rosenberg, *The American Action Painters*, ART NEWS, Dec. 1952, at 49 ("You cannot explain Mondrian's painting to people who don't know anything about Vermeer, but you can easily explain the social importance of admiring Mondrian and forgetting about Vermeer.").

us to consider a hypothetical situation in which, while walking on a beach, we observe what looks like a stanza from William Wordsworth written in the sand.[292] When reading the words in the sand, we can easily identify them as words and assign a meaning to them, "without thinking of anyone's intention."[293] This might make it look as if ascribing meaning to a text does not involve ascribing intentional activity to anyone behind the text. However, suppose we later observe a sea wave washing up on the shore and leaving behind, carved in the sand, the following lines, which look exactly like the continuation of the Wordsworth poem:

> No motion has she now, no force;
> She neither hears nor sees,
> Rolled round in earth's diurnal course
> With rocks, and stones, and trees.[294]

Given that this is just a random pattern of marks left by a wave, the question is whether these are even words we are reading. Knapp and Michaels' answer is "[c]learly not. They will merely seem to *resemble* words. . . . [Y]ou're amazed to discover that what you thought was poetry turns out not to be poetry at all. It isn't poetry because it isn't language; that's what it means to call it an accident."[295] The second stanza, created by the wave, alerts us to the fact that the only reason we were willing to assign meaning to the first stanza was that we tacitly assumed an intentional author behind it. But the moment we realize that the supposed author is just a wave of the sea, we revise our view and hold both passages to be meaningless accidents produced by the forces of nature. As Knapp and Michaels point out, "to deprive [the lines] of an author is to convert them into accidental likenesses of language. They are not, after all, an example of intention-less

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[292] Steven Knapp & Walter Benn Michaels, *The Impossibility of Intentionless Meaning*, in INTENTION AND INTERPRETATION 51, 54 (Gary Iseminger ed., 1992). The Wordsworth stanza runs as follows: "A slumber did my spirit seal;/I had no human fears:/She seemed a thing that could not feel/The touch of earthly years." *Id.*

[293] *Id.*

[294] *Id.*

[295] *Id.* at 55.

meaning; as soon as they become intention-less they become meaningless as well."[296]

If Knapp and Michaels are correct that ascriptions of meaning crucially involve referring to intentions, and if contemporary AI does not yet possess the intentional capacities to create artistic works, then pseudo art is entirely meaningless. *The Forgotten Melody*, Midjourney's creations, the new AI-created portrait in the style of Rembrandt, DeepBach's compositions, and so on, are all meaningless simulacra, having exactly the same artistic status as "driftwood that has been shaped and smoothed by the ocean," which the Copyright Office has clearly stated is not copyrightable.[297]

The second, moderate, reply to the objection concerning the possibility of interpreting pseudo works grants the assumption that pseudo works are meaningful, but draws attention to the fact that such works are interpretationally thin. That is, if the only possible interpretations of such works are based exclusively on their explicit content, without appeal to any further context, these interpretations will be seriously incomplete and will lack the interpretational depth afforded by traditional works. As already noted, without external context we cannot determine what genre or category a work belongs to, which impacts our interpretation of it. So, even if we can point to specific happenings in *The Forgotten Melody*, it is unclear how to interpret these events any further. If the work were a religious allegory, they would mean one thing; if the work were a pastiche, they would mean something totally different. We are at a loss to go any deeper into the work, as we would with an ordinary work of art.

Admittedly, this reply may not be sufficiently convincing on its own to carry the day in favor of the public domain solution for AI-generated works. Once we grant that *The Forgotten Melody* is a meaningful short story like any other,

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[296] *Id.*

[297] U.S. COPYRIGHT OFFICE, *supra* note 95, at § 306.

why should it not be copyrightable, irrespective of how interpretationally thin it is?

If the only concern about what I have been calling 'pseudo art' is that it is interpretationally thin, this retort may have a point. But the thin character of pseudo art is only one among several issues with AI-generated works. We need to consider all these problems together as seriously chipping away at the works' potential copyrightability. We have seen that AI-generated works do not have a history in the same sense that traditional works have histories. Furthermore, there are serious arguments to the effect that their lack of history renders them not only non-art, but also meaningless. Finally, our evaluation of AI-generated works also suffers because of their a-contextual nature. Value judgments are an essential part of our engagement with artworks, and some theorists have plausibly suggested that approaching works of art *qua* art would be impossible in the absence of evaluation.[298]

One significant type of artistic value possessed by many non-AI artworks is originality. All else being equal, we tend to evaluate an original work more highly than a non-original work. But evaluating originality always takes place with respect to an artistic tradition. If we dig up an ancient amphora somewhere, to evaluate its originality as a work of art (assuming we take it to be art) we need to situate it in a certain tradition. Our evaluation might have a very different outcome depending on whether we are dealing with a Greek amphora or a Roman amphora, for instance. Similarly, we judge the originality of James Joyce's *Ulysses* with reference to the preceding tradition of Victorian and post-Victorian

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[298] *See* Stein Haugom Olsen, *Value-Judgments in Criticism*, *in* THE END OF LITERARY THEORY 138, 146 (1990) ("[L]iterature does not exist as a 'field' or a body of texts, but as a list of works roughly graded according to their value. Literary value is a partial criterion for the inclusion of a work on this list. . . . The concept of literature is learned with reference to the works on this list, and to master the concept of literature is to master the rough discriminations of which the literary canon is an expression."). *See also* ANTHONY SAVILLE, THE TEST OF TIME 194 (1985) ("[W]e cannot hope to arrive at a complete understanding of any art in the absence of an assessment of its worth").

literature.[299] As we have seen previously, artists work within historical traditions and set out to solve certain problems. It is essential, when evaluating artworks in terms of originality, to take this context into account. Moreover, as some commentators have pointed out, problem-solving value is itself part of the artistic value of a work, and not merely a pre-requisite for evaluation.[300]

From this perspective, the problem for pseudo art is that, due to its a-historical character, it cannot be placed within a tradition, so it is not clear how to evaluate whether it is original, or how original it is. Are we to evaluate a poem produced by ChatGPT with reference to the structures of Elizabethan poetry, or, instead, to those of William Carlos Williams'? We don't even know how to start answering this question. We have absolutely no reason to choose one tradition over another as a starting point for our evaluative judgments, because there is no sense in which a ChatGPT-generated poem is the artistic continuator of one artistic tradition rather than another.

The a-contextual character of pseudo art also severely impacts another important artistic value that we care about in artworks, namely, in Jerrold Levinson's terminology, influence-value. 'Influence value' refers to the positive impact a certain work has on the future course of art.[301] Levinson illustrates the concept of influence value with works from the sphere of music: "Beethoven's 'Eroica' Symphony, Debussy's 'Prelude to the Afternoon of a Faun', Schoenberg's Piano Pieces, Op. 23, and Stravinsky's *Rite of Spring*."[302] The value

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[299] *See, e.g.*, Melanie M. Steele, *The Pinnacle Development of the Stream-of-Consciousness Technique as Demonstrated in James Joyce's* Ulysses, 3 U. WIS.-SUPERIOR MCNAIR SCHOLARS J. 155 (2002).

[300] *See* Jerrold Levinson, *Evaluating Music*, *in* CONTEMPLATING ART 184, 194 (2006); Stephen Davies, *Musical Understanding and Musical Kinds*, 52 J. AESTHETICS & ART CRITICISM 69, 78 (1994) ("A grasp of the conventions with and against which Mozart worked is crucial if one is to appreciate not only the successes, but also some of the failures.").

[301] *See* Levinson, *supra* note 300, at 192.

[302] *Id.*

of all these compositions has a significant influence-value component, because they are works that had a strong impact on the course of music history.

Currently, no influence-value can be claimed for any AI-generated work. This is partly because AI works are still in their infancy. However, the previous considerations concerning the a-historicity of these works suggest that the problem lies deeper than that. If it is impossible to situate these works intelligibly within an artistic tradition, then they likely cannot have any influence value on future art. The reason is straightforward: these works do not engage with the history of art in the same way that traditional works do, and AI does not set out to solve artistic problems in the same way that human artists do. So, AI-generated works cannot have influence on a tradition to which they do not belong— although they may be perceptually indistinguishable from works that do belong to that tradition.

Aside from originality and influence value, there is an accumulating body of empirical evidence showing that, generally, aesthetic appreciation of artworks is enhanced when works are accompanied by contextual information. Thus, one study found that, upon exposure to exactly the same series of paintings by Surrealist painter Max Ernst, a group of subjects who had received context-specific information about Ernst's painting technique and about elements in Ernst's biography that had influenced him responded more favorably in their appreciation of the paintings than subjects that had received no information about the paintings, or subjects that had only received generic information about the Surrealist movement in art.[303] Other studies showed that manipulating subjects' art-historical knowledge had an effect on their aesthetic experience. For instance, believing that a poem or painting took more time and effort to produce resulted in the works being higher rated

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[303] *See* Viren Swami, *Context Matters: Investigating the Impact of Contextual Information on Aesthetic Appreciation of Paintings by Max Ernst and Pablo Picasso*, 7 PSYCH. AESTHETICS, CREATIVITY & ARTS 285, 288 (2013). Similar results were obtained for Picasso's abstract paintings. *Id.* at 289-91.

for quality, value and liking.[304] Similarly, telling subjects that some of the paintings they were seeing were on loan from a famous art gallery, while others were artificially constructed by the examiners using Photoshop, induced a higher liking response for the former category of artworks.[305] In another study, background information on artworks in the form of commentaries by the author and by an art critic resulted in an increase in subjective aesthetic ratings of the artworks.[306] Knowledge of artists' intentions in creating artworks is also relevant to aesthetic appreciation.[307]

Evidence of this sort strongly suggests that "explaining the appreciator's sensitivity to art-historical contexts is crucial to any account of art appreciation."[308] The practice of critical discourse bears this out. For example, here is one critic's evaluation of Barnett Newman's painting *Dionysius*:

> Anticipation not only lingers but explodes in the figure of *Dionysus*. In the rich green of this painting, the vertical zips joining heaven and earth become horizontal lines, which, like Mondrian's incomplete square, stretch beyond the canvas to encompass the surrounding world.

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[304] *Id*. at 286 (citing the results of Justin Kruger et al., *The Effort Heuristic*, 40 J. EXPERIMENTAL SOC. PSYCH. 91, 97 (2004)).

[305] *See* Martin Skov & Ulrich Kirk, *Aesthetic Liking Is Not Only Driven by Object Properties, But Also by Your Expectations*, *in* BRAIN, BEAUTY & ART. ESSAYS BRINGING NEUROAESTHETICS IN FOCUS 139 (Anjan Chatterjee & Eileen R. Cardillo eds., 2022). *See also* Maya Bar-Hillel et al., *A Rose by Any Other Name: A Social-Cognitive Perspective on Poets and Poetry*, 7 JUDGMENT & DECISION MAKING 149, 150-53 (2012) (finding that knowing that the author of a poem is famous has an impact on the evaluation of a poem).

[306] Seongmin A. Park, Kyongsik Yun, Jaeseung Jeong, *Reappraising Abstract Paintings After Exposure to Background Information*, 10 PLOS ONE, May 6, 2015, at 1, 11-12.

[307] *See generally* J.-L. Jucker et al., *"I Just Don't Get it": Perceived Artists' Intentions Affect Art Evaluations*, 32 EMPIRICAL STUD. ARTS 149 (2014).

[308] Nicolas J. Bullot & Rolf Reber, *The Artful Mind Meets Art History: Toward a Psycho-Historical Framework for the Science of Art Appreciation*, 36 BEHAV. & BRAIN SCI. 123, 126 (2013).

This Dionysian "image" suggests what Hegel describes as the "bacchanalian revel in which no member is sober."[309]

In evaluating the painting in a positive manner, the critic notes not only its intrinsic properties, but, as Alan Goldman points out in discussing this passage, "contrasts its formal characteristics to those of other Newman paintings, likens them to those in earlier works of other artists (Mondrian), and attributes to them a rich symbolic and philosophical significance."[310]

Such rich and historically informed evaluations are not available for pseudo art. It is not clear what other contextual information we can provide for a better appreciation of such works apart from the fact that they were produced by ChatGPT, Midjourney, DeepBach, or some other AI.[311] Given the importance of context in the evaluation of traditional artworks, this is a big strike against the copyrightability of pseudo art.

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[309] ALAN GOLDMAN, AESTHETIC VALUE 167 (1995) (quoting critic Marc C. Taylor in MARK C. TAYLOR, DISFIGURING 274 (1993)).

[310] *Id.* Goldman observes that the critic "might also have located the work further within the modern formalist and expressionist history that Newman continued." *Id.* at 167.

[311] One might suggest that humans may place AI in a historical context by means of instructing the AI to imitate or create artworks in the style of various artists. I am skeptical of such claims because, in those cases, the artistic impulse to create would not be coming organically from the AI, but would be imposed from the outside. The AI would basically be in the position of an art forger, whose goal is not to contribute to the history of art, but is simply mimetic (and that is partly why we do not assign significant aesthetic value to forgeries). Furthermore, the suggestion cannot get around the fact that AI does not currently have the necessary intentional apparatus for creating art. The more the required intentions and goals are supplied from the outside, the more it will look like it is the humans who are doing the actual artistic work, and the AI is a mere instrument. That is certainly a possibility. But then, just like we hold photographers and filmmakers accountable for the art they produce, and not the cameras they are using, in cases where the entire intentional and historical background is supplied by the AI user or programmer, that user or programmer will be the actual artist who makes the significant artistic decisions.

Arguably, AI-generated works are already beginning to be appreciated by consumers, and the art market seems to be incorporating AI outputs just as it does human artifacts. For example, a *Portrait of Edmond Belamy*, generated by an AI called "the Generative Adversarial Network" (GAN) sold for $432,500 at Christie's.[312] However, we do not have enough information yet to determine that this work is valued for its *aesthetic* value, as opposed to its value as a curiosity. The fact that there was an auction for the work and that money was exchanged is at least consistent with the hypothesis that this work is appreciated not so much for its aesthetic qualities, but rather for its novelty because it was produced by an AI.

Moreover, even if the GAN-produced portrait possesses aesthetic qualities and is appreciated for them, the fact that AI-generated works can be subjects of aesthetic appreciation in *some* respects does not entail that, all things considered, they should be entitled to copyrightability. Whether these works are copyrightable artworks will ultimately depend on whether we are able and willing to integrate them into the art practices that we have developed so far. If the arguments in Part VI of this Article are on the right track, there are reasons to believe that such an integration of pseudo art into our aesthetic practices remains problematic. At any rate, the general solution to this problem will not be essentially affected by isolated events such as the sale at Christie's. The solution must account for multiple aspects of our art-historical practices, as well as the properties of AI-generated works, and, as discussed further in the section that follows, will depend on what we consider the purpose of copyright law.

D. Pseudo Art and the Copyright Clause of the Constitution

It is useful to think of the challenges to pseudo art copyrightability that I have examined throughout Part VI in the context of the Copyright Clause in the Constitution. As will be recalled, Section 8 of Article I reads, in part, as

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[312] *See* Craig & Kerr, *supra* note 100, at 39.

follows: "The Congress shall have Power . . . [t]o 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."[313]

The Clause expressly states that the purpose of copyright law is "[t]o promote the Progress of Science."[314] In the context of artworks, the normativity inherent in the notion of progress requires that copyright law be aimed at promoting works that are aesthetically valuable, however we end up defining aesthetic value. Thus, on a straightforward reading of the Copyright Clause, it makes no sense to think of copyright law outside of some standard of value which is promoted by the artworks that are ultimately afforded copyright protection. The requirement that artworks be evaluated according to an aesthetic norm is already implicit in the practice of courts: not just any artwork, simply in virtue of being an artwork, is copyrightable. The Supreme Court in *Feist Publications, Inc. v. Rural Telephone Service Co.*, for instance, held that works need to exhibit "a modicum of creativity" to qualify for copyright protection.[315] Creativity, together with independent creation, is an ingredient of originality.[316] And originality, as previously discussed, is an evaluative concept which is partly determinative of the value of a work of art.

The Copyright Clause in the Constitution is far from superfluous. Recent scholarship has shown that the Framers intended it as a limitation on Congress' intellectual property power.[317] At the time of the adoption of the Constitution,

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[313] U.S. CONST. art. I, § 8, cl. 8.

[314] The 'useful Arts' language is in reference to patents, not copyright. *See* Lawrence B. Solum, *Congress's Power to Promote the Progress of Science*: Eldred v. Ashcroft, 36 LOY. L.A. L. REV. 1, 12, 51 (2002).

[315] Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 346 (1991). The Court in *Feist*, following *In re Trade-Mark Cases*, found originality to be a requirement implicit in the 'Writings' language of the Constitution. Even though it did not rely on the Copyright Clause, the *Feist* decision confirms that aesthetic normativity is essential in determining the scope of copyright protection.

[316] *Id.*

[317] *See generally* Oliar, *supra* note 44. *See also* Solum, *supra* note 314, at 12-25; Ned Snow, *The Regressing Progress Clause: Rethinking Constitutional Indifference to Harmful Content in Copyright*, 47 U.C. DAVIS L. REV. 1,

restriction of copyright protection to works that contribute to human progress was consistent with state copyright statutes that emphasized the "service to mankind," "the embellishment of human nature," or "the general good of mankind," which were to be furthered by the publication of writings.[318] Likewise, James Wilson, one of the Founders, remarked during the Convention that one of the main objectives of the government was the cultivation and improvement of the human mind.[319] Furthermore, the Copyright Act of 1790 was subtitled "[a]n Act for the encouragement of learning."[320] The grammatical structure of Section 8, on a close textual reading, has also been adduced as evidence for the restrictive role of the Copyright Clause.[321] Finally, the Supreme Court indicated that the Copyright Clause is not meaningless verbiage in patent cases.[322]

Together with the drawbacks of the "mere preamble" reading of the Copyright Clause,[323] the historical analysis of the intentions of the Framers, and the textual, judicial, and logical evidence support the conclusion that the best interpretation of the Copyright Clause is as a limitation on the power of Congress to legislate in the domain of copyright.[324] Hence, the way copyright law is ultimately structured must

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42-46 (2013). The interpretation that the Copyright Clause is a mere innocuous preamble "render[s] [the Copyright Clause] meaningless, the equivalent of mottos on license plates; that is contrary to the general theory of interpretation that insists on giving every word meaning" and that "[n]o clause in Article I, Section 8 has a preamble" Snow, *supra*, at 43 n.256 (citing WILLIAM F. PATRY, PATRY ON COPYRIGHT § 3:9 (2013)).

[318] Oliar, *supra*, note 44, at 1808 (referencing the Copyright Acts of Connecticut, Georgia, New York, and New Jersey).

[319] *Id.*

[320] *See* Solum, *supra* note 314, at 45.

[321] *Id*. at 13-20.

[322] *Id*. at 24 (citing Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141 (1989)).

[323] *Id*. at 21-25.

[324] Oliar, *supra*, note 44, at 1835.

consider the Copyright Clause. In particular, the law will have to "promote the Progress of Science."[325]

Since modern cases have extended the purposes of copyright law to encompass the creative arts (and not merely science or learning, narrowly conceived),[326] compliance with the Copyright Clause means that whatever creative works get to be protected had better promote artistic creativity, if not individually, then at least as a group. Current judicial doctrine holds that the ultimate beneficiary of the temporary monopolies granted through copyright law is the public. As the Supreme Court noted, "[t]he sole interest of the United States and the primary object in conferring the monopoly lie in the general benefits derived by the public from the labors of authors."[327]

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[325] U.S. CONST. art. I, § 8, cl. 8.

[326] *See* Sony Corp. v. Universal City Studios, Inc., 464 U.S. 417, 429 (1984) ("[The limited grant] is intended to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired."); Omega S.A. v. Costco Wholesale Corp., 776 F.3d 692, 698 (9th Cir. 2015) (Wardlaw, J., concurring) ("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 artistic creativity for the general public good." (quoting Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975)); Smithkline Beecham Consumer Healthcare, L.P. v. Watson Pharms., Inc., 211 F.3d 21, 29 (2d Cir. 2000). Professor Solum has argued against the extension of the Copyright Clause to cover artistic creativity, on the ground that such an extension would be anachronistic. *See* Solum, *supra* note 314, at 55-56. According to Solum, the meaning of "science" in the Copyright Clause is "learning or knowledge of enduring value." *Id.* at 53. However, it is not obvious why artistic creativity could not be subsumed under the broad label of "learning or knowledge of enduring value." On the contrary, works of art may very well have cognitive value, so that promoting artistic creativity may be a way of promoting learning and knowledge. For overviews concerning the relation between art and knowledge, see, for example, Eileen John, *Art and Knowledge*, *in* THE ROUTLEDGE COMPANION TO AESTHETICS 384 (Berys Gaut & Dominic McIver Lopes eds., 2013); and Cynthia A. Freeland, *Art and Moral Knowledge*, *in* AESTHETICS AND THE PHILOSOPHY OF ART: THE ANALYTIC TRADITION 295 (Peter Lamarque & Stein Haugom Olsen eds., 2019).

[327] Fox Film Corp. v. Doyal, 286 U.S. 123, 127 (1932). *See* Fogerty v. Fantasy, Inc., 510 U.S. 517, 524 (1994) ("The primary objective of the

Thus, the challenge presented by AI-generated works is whether they are sufficiently creative to warrant copyright protection under the Copyright Clause. We should not make the mistake of assuming that AI productions are merely more of the same kind of artworks as the traditional ones that we have been accustomed to throughout our cultural history. We are still at the beginning of our interaction with such products, and there is yet no firm evidence that people will care about these artworks in the same way they do about ordinary art. It is quite possible that, after a short period of surprise and wonder, we end up relegating these works to the dustbins of aesthetic insignificance. Should that happen, such works will not have met the requirements of the Copyright Clause, as they will not have been conducive to artistic progress.

In fact, the arguments discussed in Part VI of this Article do not warrant any optimism about AI-generated works. I have argued that these works are too different from what we currently consider art to be easily integrated into our cultural practices other than as mere curiosities. If these arguments are correct, then affording copyright protection to such works will not yield the public benefits that undergird copyright legislation. In such a case, AI products will not present sufficient aesthetic interest for humans to find it worth engaging with them. No particularly *artistic* (as opposed to, say, technological) progress will have been achieved by the coming into existence of what I am calling 'pseudo art'.

I cannot claim I have definitively proved that it is impossible for people to appreciate and interact with AI outputs in a way that would amount to aesthetic interaction. Rather, I have offered several arguments for why we should be skeptical of such an eventuality occurring, or that it has already occurred. The least that may be said is that our cultural practices with respect to AI are still not mature enough for us to be ready to make such a momentous decision

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Copyright Act is to encourage the production of original literary, artistic, and musical expression for the good of the public."); *see also* cases cited *supra* note 326.

as protecting AI works through copyright. In time, depending on advances in the study of AI and consciousness and on how human-like future generations of AIs are, it is possible that our attitudes may change and that we may ultimately accept AI products as *bona fide* artworks. That time, however, is not today.

Conclusion

AI is one of the most significant challenges currently facing humanity. As discussed in this Article, recent AI developments have led to the creation of artistic outputs that are perceptually indistinguishable from traditional human-created artworks. Since most governments have seen fit to protect human aesthetic productions by affording their authors temporary monopolies over their creations, one of the main questions raised by the new technology is whether and how to apply copyright entitlements to AI-generated works.

I have argued that, in the United States, there is a Constitutional Constraint on who is entitled to copyright protection for the works they produce. According to this Constraint, only the actual author of a work can be the initial owner of the copyright in the respective work. I have further argued that, in many cases of AI-generated artworks, the author of the work is the AI itself. Therefore, if anyone should be given copyright protection for the work, it is the AI program.

However, currently, the U.S. Copyright Office does not countenance protection of works that are authored by AI systems. Although I find the Copyright Office's arguments unconvincing, I have provided what I believe are more serious arguments to support the Office's position. In particular, the art produced by AI is too different from human-created art for it to play a similar part in our artistic and cultural practices. That is why AI productions are better seen, at least for the time being, as mere simulacra or 'pseudo art,' which should remain in the public domain. Since it is far from clear that pseudo art has or will have any contribution to the promotion of artistic creativity, skepticism about copyright protection of pseudo art appears to be the rational attitude to adopt at this time. For better or worse, the likes of

Commander Data and Roy Batty, not to mention their more advanced and artistically inclined progeny, are not among us yet.