

DO ANDROIDS DREAM OF COPYRIGHT?: EXAMINING AI COPYRIGHT OWNERSHIP

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I. INTRODUCTION

If Shakespeare were an android, would we care? Would it make his work less worthy of praise, or less important to society? If Shakespeare, reincarnated as an android by a clever programmer, published a new play today, would we deny that play copyright? As outlandish as this hypothetical may seem, these are immediate questions about the state of copyright for works generated by artistic artificial intelligence (AI). The U.S. Patent and Trademark Office (USPTO) is aware, but uncertain, of the role and copyrightability of AI works. Already, programmers and companies have been registering for copyright on works produced by generative AI¹ despite the recent imposition of a “human authorship requirement” in the Compendium of Copyright Practices.² Because the Copyright Office, which administers the registration and recording of copyright, only needs someone to claim that a work is theirs, companies and programmers have been taking advantage of the lax investigation into claims of ownership.³ But *Naruto v. Slater*⁴ and the newest issue of the Compendium show that if those copyrights were ever challenged, they would likely be invalidated. Scholarly arguments as to the best formal regime⁵ and a request by the USPTO for comments⁶ characterize, but not clarify, this uncertainty. As it stands now, there is a disparity between what companies are doing in practice and what the Copyright Office allows on paper.

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1. Dani Deahl, *The USPTO Wants to Know if Artificial Intelligence Can Own the Content it Creates*, THE VERGE (Nov. 13, 2019, 1:45 PM), <https://www.theverge.com/2019/11/13/20961788/us-government-ai-copyright-patent-trademark-office-notice-artificial-intelligence>.

2. U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 313.2 (3d ed. 2014).

3. See, e.g., *infra* note 35.

4. *Naruto v. Slater*, No. 15-cv-04324-WHO, 2016 U.S. Dist. LEXIS 11041, 2016 WL 362231 (N.D. Cal. Jan. 28, 2016), *aff'd*, 888 F.3d 418 (9th Cir. 2018).

5. See, e.g., Kalin Hristov, *Artificial Intelligence and the Copyright Dilemma*, 57 IDEA 431 (2017).

6. See Request for Comments on Intellectual Property Protection for Artificial Intelligence Innovation, 84 Fed. Reg. 58,141 (Oct. 30, 2019).

This Note looks particularly at how artistic works produced by AI should be protected and incentivized. As AI-as-an-industry grows and becomes more advanced, so do its issues surrounding copyright. Rather than banning AI-produced works to keep the existing regime unchanged, it is time to reexamine why copyright hinges on human authorship, rather than creativity. Copyright presents three distinct hurdles for a work to be copyrightable.⁷ The first is originality, which mandates that a work must be independently created or not copied.⁸ The next is creativity, which is used not to judge the aesthetic merit of the work, but to filter against function.⁹ This standard ensures that copyright protects the substance of a work, not its general idea or theme. Finally, and most important to this Note, is authorship, which is used to establish the creator and rights-holder of a copyrighted work.¹⁰ This hurdle is highest for AI generated works because traditionally, originality and authorship were so tied together that authorship implied creativity, and vice versa.¹¹ AI-generated art, as authorless creative works, breaks the standard “if it looks creative, it must have a human author” way of understanding authorship and confronts how non-human authorship has been and can be accommodated.¹² This Note clarifies how and why AI-generated creative works meet these hurdles, and how incentive-based rationales for copyright protections apply.

This Note seeks to elucidate the policy arguments underlying the copyright system that support or oppose the adoption of AI authorship of artistic works. These will be used to explain institutional changes that can best serve the producers, users, and the future of generative AI. To that end, this Note begins with a brief description of generative artificial intelligence, arguing that the way AIs are designed makes output inherently creative, rather than operating as a tool of the programmer. Next, Part II explores some of the case precedent and history on machine and non-human copyright. From there, Parts III and IV proceed through the elements of originality and authorship, distinguishing copyrightability from ownership and exploring the implications of applying copyright to artificial intelligence.

7. U.S. COPYRIGHT OFFICE, *supra* note 2, § 302.

8. *Id.* § 308.1.

9. *Id.* § 308.2; *see also* Dennis S. Karjalam, *Copyright and Creativity*, 15 UCLA ENT. L. REV. 169, 201 (2008) (arguing that creativity is a necessary, not sufficient condition for copyright such that functionality funnels works either into patent or copyright).

10. U.S. COPYRIGHT OFFICE, *supra* note 2, §§ 302, 404, 405.

11. *See infra* Part II (showing how legal jurisprudence that affects this area became entangled).

12. *See Artificial Intelligence: The Ins and Outs of Copyright and AI*, U.S. PATENT & TRADEMARK OFFICE (Jan. 31, 2019), <https://rev-vbrick.uspto.gov/#/videos/d6e591c3-64cf-4d74-ab35-9f387a2da4b2>.

Part V proposes a model of copyright ownership for artistic works by artificial intelligence. A brief overview of current scholarship shows that popular proposals are incomplete in their considerations of liability, incentive, and equitable return on investment. This Note advocates for a model that draws on the works made for hire doctrine and current U.K. law addressing computer-generated copyright. AI works would have specific provisions for term limits and authorship to achieve an equitable balance between effort and reward. AI would be treated as the author-in-fact and the programmer as the author-in-law to clearly indicate attribution of risks and benefits. This Note concludes with a call for a clear model that weighs current issues and upcoming technological advances, so that the future of copyright may ensure appropriate accountability and administrability for creative works by artistic AI.

A. WHAT IS ARTIFICIAL INTELLIGENCE?

Confusion about what AI is extends beyond the general public into the field itself. Scholars' and practitioners' definitions vary from broad to narrow and analogize from aspects of human functions that are also hard to define—such as the ability to learn, consciousness, and self-awareness.¹³ What is most generally accepted and has made its way into the Oxford English Dictionary is that AIs are “computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.”¹⁴ In traditional forms of simple AI, programmers write many specific instructions for the program to follow and hope that their instructions are the best way to achieve their end goal.¹⁵ Current modes of generative AI are more complex and independent.¹⁶ This Note focuses on deep learning and generative adversarial neural networks as the two dominant modes of generative AI.

Deep learning and neural networks seek to create programs that behave as though they are interconnected brain cells. Programmers create multiple layers of processing “neurons” to allow the AI to learn how to recognize a solution on its own by looking for signature patterns of appearance, behaviors, or features at varying scales.¹⁷ Each level of neurons provide insight and passes

13. Matthew U. Scherer, *Regulating Artificial Intelligent Systems: Risks, Challenges, Competencies, and Strategies*, 29 HARV. J.L. & TECH. 353, 360 (2016).

14. *Artificial Intelligence*, OXFORD ENGLISH DICTIONARY, https://en.oxforddictionaries.com/definition/artificial_intelligence (last visited Feb. 9, 2020).

15. Chris Rodley, *Deep Dinosaur*, CHRIS RODLEY (June 19, 2017), <https://chrisrodley.com/2017/06/19/dinosaur-flowers/>.

16. *Id.*

17. *Id.*

that information to the next, more senior level.¹⁸ After learning to recognize something based off of labeled data or supervised self-learning, deep learning programs can then apply that knowledge to recognize raw information and produce outcomes based on those understandings.¹⁹

Generative adversarial neural networks (GANs) set two neural networks against each other to improve the quality of the results. One generates imitations of the target material, and one evaluates whether or not the productions are forgeries. Learning in tandem, as the latter gets better at detecting forgeries, the former must become better at creating them.²⁰ In contrast to deep learning, GANs do not rely on a large amount of training data, as the interaction between the two networks itself creates a large amount of data from a limited source that continues to be cross-checked against each other.²¹

1. *Artistic and Creative Generative AI*

By their very design, deep learning and GANs (hereinafter generative AI) seek to imitate the process of human learning and creativity. Consequently, they produce creative works that are outside the control of the original programmer. Some scholars, including Professor Jane Ginsburg, dismiss the concept of AI authorship outright, claiming that AI is a mere tool, and its results are absolutely dependent on the inputs of the programmer.²² If this were the case, the extensive scholarship, debate, and calls for input by the USPTO would be moot; copyright already protects machine created works where there is creative input or intervention from a human author.²³ The issue at hand arises because the machines described here are generating works with an increasing level of independence from human intervention. And, as others have noted, the incorporation of randomness into a generative AI means it is only constrained to the same parameters as a human author—grammar,

18. See Simon Löfwander, *About Artificial Intelligence, Neural Networks, & Deep Learning*, AYIMA (Jan. 24, 2017), <https://www.ayima.com/blog/artificial-intelligence-neural-networks-deep-learning.html>.

19. *Id.*

20. Bernard Marr, *Artificial Intelligence Explained: What are Generative Adversarial Networks (GANs)?*, FORBES (June 12, 2019, 12:23 AM), <https://www.forbes.com/sites/bernardmarr/2019/06/12/artificial-intelligence-explained-what-are-generative-adversarial-networks-gans/#32aad65a7e00>.

21. *Id.*

22. Jane C. Ginsburg & Luke Ali Budiardjo, *Authors and Machines*, 34 BERKELEY TECH. L.J. 343, 396 (2019).

23. U.S. COPYRIGHT OFFICE, *supra* note 2, § 313.2.

cohesion, and genre-specific devices.²⁴ To that end, it could be said that in this context, the programmer has as much claim to an AI's work as Shakespeare does to any iteration of the star-crossed lovers narrative.²⁵

This Note specifically addresses artistic generative AI. These types of AI will consistently be referred to as “creative” or “artistic” as a way of reflecting the independent process of recognition, analysis, and generation that the AI undergoes to produce a unique work. The three below examples illustrate the generative AI referenced throughout this Note. The first, Chris Rodley’s “Deep Dinosaur” (Figure 1) produces novel and striking images by combining two sets of inputs—here, vintage flowers and dinosaurs.²⁶ Rodley and his Deep Dinosaurs are not the product of a large project like Google’s Deepmind, but an independent creative project undertaken by a PhD candidate at the University of Sydney.²⁷ Using a technique known as style transfer or deep style, the AI learns to recognize characteristics of images, then reproduce them, synthesizing the two characteristics to produce a recognizable amalgam.²⁸

24. See Annemarie Bridy, *Coding Creativity: Copyright and the Artificially Intelligent Author*, 2012 STAN. TECH. L. REV. 5, 12 (2012).

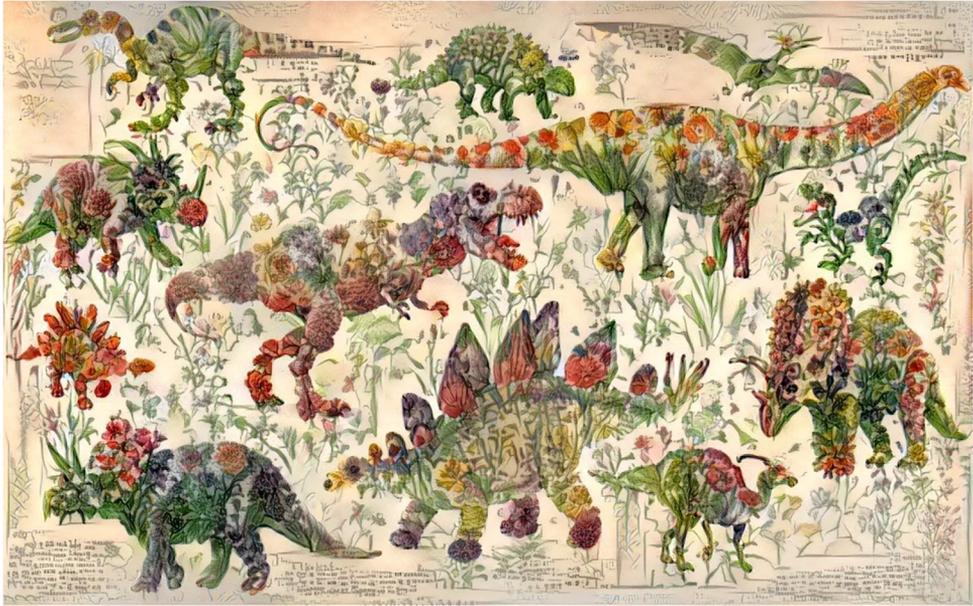
25. By this, I mean works like *High School Musical* (instead of feuding families, high-school cliques) and *West Side Story* (instead of feuding families, rival New York gangs) wherein the conceit is the same, but a court would likely not consider them derivative works of *Romeo and Juliet*. See also *Nichols v. Universal Pictures Corporation*, 45 F.2d 119 (2d Cir. 1930).

26. Rodley, *supra* note 15.

27. Chris Rodley, *Me*, CHRIS RODLEY, <https://chrisrodley.com/me/> (last visited Feb. 9, 2020).

28. Rodley, *supra* note 15.

Figure 1: Deep Dinosaur



The second is “Deep-speare,” a deep learning AI that writes sonnets (Figure 2).²⁹ Created by researchers for the 56th Annual Meeting of the Association for Computational Linguistics, Deep-speare was trained on the rules, structure, and elements of around 2,600 real sonnets.³⁰ From this data, Deep-speare was able to generate sonnet quatrains “nearly indistinguishable from published poems by humans” when read by the average person.³¹

29. Luke Dormehl, *Move Over, Shakespeare: This Sonnet-Writing A.I. is the Poet We Need*, DIGITAL TRENDS (July 30, 2018, 12:32 PM), <https://www.digitaltrends.com/cool-tech/ai-generates-shakespearean-sonnets/>.

30. Jey Han Lau, Trevor Cohn, Timothy Baldwin, Julian Brooke, and Adam Hammond, *Deep-speare: A Joint Neural Model of Poetic Language, Meter and Rhyme*, 56 PROC. ANN. MEETING ASS'N FOR COMPUTATIONAL LINGUISTICS 1948 (2018).

31. *Id.* (noting that a literature expert was not fooled—the stress, rhyme, and meter were all human-passable but the AI underperformed on readability and emotion).

Figure 2: Deep-speare Example Quatrain

“With joyous gambols gay and still array,
no longer when he ‘twas, while in his day
at first to pass in all delightful ways
around him, charming, and of all his days.”

The third is Endel, an app-based company that uses a generative algorithm to create “[p]ersonalized sound environments” for focus, relaxation, and sleep.³² In 2018, Endel partnered with Warner Music Group to produce and distribute these soundscapes on Apple Music and iTunes.³³ To monetize the songs, Warner needed to register them for copyright, and requested the songwriting credits for each. But besides creating the program itself, Endel as a company did nothing to generate the audio—the AI reacts to inputs like “rain” and creates the song entirely on its own.³⁴ Ultimately, the company “decided to list all six employees at Endel as the songwriters for all 600 tracks.”³⁵

The above examples do not begin cover the broad and fascinating world of generative AI. Rather, they serve as points of reference for thinking through specific aspects of AI copyright dilemmas. But before investigating how potential solutions for AI copyright ownership could apply to works like these, it is important to first understand how and why these issues arise out of the existing copyright regime.

II. LEGAL JURISPRUDENCE ON NON-HUMAN COPYRIGHT OWNERSHIP

Case precedent displays a grudging willingness to challenge traditional conceptions of copyrightability in order to accommodate mechanical and non-human copyright. The U.S. Constitution Article I, Section 8, authorizes

32. ENDEL, <https://endel.io/> (last visited Feb. 10, 2020).

33. *Endel to Release 20 Algorithm-Powered Albums to Help You Sleep, Focus & Relax*, ENDEL (Jan. 22, 2018), <https://endel.io/presskit/Endel-PressRelease-20MusicAlbums.pdf> [hereinafter *Endel.io*].

34. *See id.*; *Science*, ENDEL, <https://endel.io/science/> (last visited Feb. 10, 2020).

35. Dani Deahl, *We’ve Been Warned About AI And Music For Over 50 Years, But No One’s Prepared*, THE VERGE (Apr. 17, 2019, 10:30 AM), <https://www.theverge.com/2019/4/17/18299563/ai-algorithm-music-law-copyright-human>.

Congress “[t]o promote the [p]rogress of [s]cience and useful [a]rts, by securing for limited [t]imes to [a]uthors and [i]nventors the exclusive [r]ight to their respective [w]ritings and [d]iscoveries.”³⁶ This order, written intentionally broadly,³⁷ does not explicitly preclude non-human authors. However, the concept of “romantic authorship,” in which creativity can only stem from “an individual creative personality, a solitary originator of stylistically consistent works,” has long been the guiding concept for understanding how authorship and creativity interact.³⁸ As a result, disputes in the copyright field have developed over the scope of what constitutes “authors” and “writings” when it is not clear that the author was entirely human.

A. PHOTOGRAPHY AND *TORAH SOFT*—EXTENDING COPYRIGHT FROM MACHINE TO MAN

One of the first cases considering how machine-produced works could be copyrightable, *Burrow-Giles Lithographic Co. v. Sarony*,³⁹ established that works are copyrightable so long as they are “representatives of original intellectual conceptions of the author.”⁴⁰ In 1865, President Abraham Lincoln authorized a bill amending the Copyright Act to extend protection to photographs and photographic negatives, likely due in part to their “prominent role in bringing the horrors of the Civil War to the public.”⁴¹ Nearly twenty years later, this case tested the constitutionality of that 1865 legislation, a seemingly logical progression from maps, to sketchings and engravings, and now photography. In considering whether photographs, which were and are purely mechanical reproductions of their subjects, met the requisites of originality and creativity, the Court understood the concept of authorship could enable the product of a machine to be copyrightable.⁴² In concluding the case in favor of the photographer, Justice Miller commented that “photography is to be treated for the purposes of the act as an art,” such that the author uses the camera to

36. U.S. CONST. art. I, § 8, cl. 8.

37. *ArtI.S8.C8.1.1 Origins and Scope of the Power*, CONGRESS.GOV, https://constitution.congress.gov/browse/essay/I_8_8_1_1/ (last visited Feb. 11, 2020) (“Congress has broad leeway to determine how best to promote creativity and utility through temporary monopolies.”).

38. Bridy, *supra* note 24, at 4. See also ZACHARY LEADER, REVISION AND ROMANTIC AUTHORSHIP, 11 (1999) (“The Romantic author is often portrayed as spontaneous, extemporizing, otherworldly, and alone . . . Romantic attitudes to authorship profess a preference for what comes naturally, with a concomitant devaluing of secondary processes, including second thoughts.”).

39. 111 U.S. 53 (1884).

40. *Id.* at 58.

41. WILLIAM F. PATRY, COPYRIGHT LAW AND PRACTICE 244 (1996).

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

implement a creative idea.⁴³ To grant copyright, the Court extended the creative thought of the author through the camera, a logical inference from the control wielded by the photographer.⁴⁴

Notably, the Court in *Burrow-Giles* declined to establish whether unstaged photographs that had no active human author or human intervention in their composition could engender copyright.⁴⁵ However, the dicta implied that an unstaged photograph, since it did not include creative human participation, could not validly hold copyright.⁴⁶ Though not used explicitly in other cases, Professor Annemarie Bridy notes that the reasoning behind this dicta continued to perpetuate an unnecessary “dichotomy between creative and mechanical labor” in which automation is in opposition to creative authorship.⁴⁷ Because the case’s reasoning rested largely on Sarony’s involvement in setting up the photograph, later cases concluded that where mechanical creations arose, a human artist had to be substantially involved.⁴⁸

Following that dichotomy, the National Commission on New Technological Uses of Copyrighted Works (“Commission”)’s 1974 report expressed strong skepticism regarding precedent linking mechanical works to authorship.⁴⁹ Specifically directed to study the emergence of new, computer assisted works, the Commission declined to imagine the future implications of existing generative word processors.⁵⁰ Instead, they decided computers could only be “an inert instrument,” which, like the camera, functions solely as a creative tool that must be activated and directed by a human.⁵¹ The Commission thus advised Congress that no change should be made to accommodate automatic systems.⁵² This recommendation was challenged only ten years later by the Office of Technology Assessment (OTA).⁵³ The authors of the 1986 OTA report recognized that programs autonomously producing

43. *Id.* at 61.

44. *Id.* at 60 (deciding that the photograph is art on the basis that the photograph was given “visible form” by Sarony’s “desired expression”).

45. *Id.* at 59 (on the question of whether the ordinary production of a photograph without the photographer’s intervention, “we decide nothing”).

46. Bridy, *supra* note 24, at 5–6.

47. *Id.* at 6.

48. *See id.*

49. NAT’L COMM’N ON NEW TECH. USES OF COPYRIGHTED WORKS, FINAL REPORT OF THE NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS 4, 108–15 (1978).

50. *Id.*

51. *Id.* at 109.

52. *Id.*

53. U.S. OFFICE OF TECH. ASSESSMENT, INTELLECTUAL PROPERTY RIGHTS IN AN AGE OF ELECTRONICS AND INFORMATION (1986), 65–73.

text or musical works were a far cry from the word processing capabilities implied by the Commission.⁵⁴ In particular, the OTA report referenced the “blurring of the distinction between the copyrighted work and its product.”⁵⁵ The report concluded by suggesting that interactive computer programs, if not considered co-authors of the output produced, at least raised several troubling questions of copyright ownership and creativity requirements.⁵⁶

U.S. case law has not yet dealt with the copyrightability of an artistic work produced by AI.⁵⁷ However, a Southern District of New York case, *Torah Soft Ltd. v. Drosnin*,⁵⁸ comes within the realm of dealing with the output of an algorithm. Torah Soft, makers of a biblical-code-finding algorithm, sued over infringement of printouts of output generated by their computer program.⁵⁹ According to Bible code researchers, the Hebrew Bible is purported to be embedded with a code that is revealed by finding words and phrases which appear in the Bible at equidistant letter skips.⁶⁰ This software analyzed and found these code words and phrases.⁶¹ Interestingly, this court did not concern itself with authorship. The court suggested in passing that copyright protection afforded to the computer program may also extend to the output files. If the program does the “lion’s share of the work” in creating the output files and the end-user’s input is “marginal,” then it follows that the protection extends.⁶² Regardless, the court focused on whether the outputs contained protectable elements.⁶³ Because the software was made to comply with religious rules that were functional in nature, the court determined that the outputs were also functional and therefore not protectable.⁶⁴

54. *Id.*

55. *Id.*

56. *Id.*

57. This statement is accurate as of December 2019. *But see* BETA WRITER, LITHIUM-ION BATTERIES: A MACHINE-GENERATED SUMMARY OF CURRENT RESEARCH (2019) (a machine-generated book that claims copyright but is not registered in the U.S. Copyright Office’s Public Catalog); Leo Kelion, *AI system ‘should be recognised as inventor,’* BBC NEWS (Aug. 1, 2019), <https://www.bbc.com/news/technology-49191645> (“[T]wo professors from the University of Surrey have teamed up with the Missouri-based inventor of Dabus AI to file patents in the system’s name with the relevant authorities in the UK, Europe and US.”).

58. 136 F. Supp. 2d 276 (S.D.N.Y. 2001).

59. *Id.* at 280.

60. *Id.*

61. *Id.*

62. *Id.* at 283.

63. *Id.* at 283–84.

64. *Id.* at 287.

B. PSYCHOGRAPHY—GRANTING GOD COPYRIGHT

Another interesting line of cases that involve non-human works are those dealing with psychography, or automatic writing. Psychography is the production of writing or drawing supposedly by a spiritual agent, in which the human is merely a scribe.⁶⁵ Although parties seeking copyright protection in these cases claim that authorship actually lies with non-human, usually celestial or spiritual, beings, courts have found a sufficient nexus to human creativity to sustain copyright.⁶⁶

In each of these cases, courts apply *Feist Publications, Inc., v. Rural Telephone Service Co.*⁶⁷ to determine whether a compilation possesses the requisite originality for copyright protection. In *Feist*, the Court established that copyright demanded a minimal degree of creativity, which did not include an alphabetically arranged phonebook.⁶⁸ Nonetheless, compilations of facts may be copyrightable if arranged creatively, i.e., beyond a merely functional arrangement.⁶⁹ Referencing *Burrow-Giles*, the Court held that an author who claims infringement must prove the existence of “intellectual production, of thought, and conception.”⁷⁰ This showing can be demonstrated through active and intentional choices, where changes were not accidental or externally motivated.⁷¹ *Feist* thus sets a low bar for determining whether a work is creative or merely functional.

Along these lines, the Ninth Circuit in *Urantia Found. v. Maaberra*⁷² upheld a copyright granted on behalf of a “non-human” author.⁷³ There, the claimed work was dictated by a deity listed as “the Divine Counselor, the Chief of the Corps of Superuniverse Personalities, and the Chief of the Archangels of Nebadon.”⁷⁴ It was transcribed by the human whose name ended up on the copyright.⁷⁵ Pushing past the non-human element, the court found that the originality requirement necessary for a valid copyright was satisfied because the human beings who “compiled, selected, coordinated, and arranged” the

65. *Psychography*, OXFORD ENGLISH DICTIONARY, <https://en.oxforddictionaries.com/definition/psychography> (last visited Feb. 11, 2020).

66. Bridy, *supra* note 24, at 20.

67. 499 U.S. 340 (1991).

68. *Id.* at 362.

69. *Id.*

70. *Id.*

71. Bridy, *supra* note 24, at 8.

72. 114 F.3d 955 (9th Cir. 1997).

73. *Id.* at 964.

74. *Id.* at 957.

75. *Id.*

book did so “in such a way that the resulting work as a whole constitutes an original work of authorship.”⁷⁶

A similar case, *Penguin Books U.S.A., Inc. v. New Christian Church of Full Endeavor, Ltd*⁷⁷ held that, “[a]s a matter of law, dictation from a non-human source should not be a bar to copyright.”⁷⁸ There, a “Voice” the transcriber identified as Jesus dictated a manuscript and gave legal advice.⁷⁹ According to the author, Jesus advised that the copyright page should not have the author’s name in case people confused the copyright author with the actual author (Jesus and the Holy Spirit).⁸⁰ In a compromise, the copyright registration listed the work’s author as “[Anonymous](Helen Schucman).”⁸¹ The court held that, irrespective of independent editorial judgment in the process of recording the work, copyright could subsist in a non-human work so long as there is a sufficient human nexus. Helen’s acknowledgement of her involvement was sufficient.⁸²

C. *NARUTO V. SLATER*—THE MONKEY SELFIE THAT DROVE THE COPYRIGHT OFFICE BANANAS

As made clear in *Naruto v. Slater*, however, this liberal view of non-human authorship does not apply to animals.⁸³ Now widely known as the “Monkey Selfie Case,”⁸⁴ *Naruto v. Slater* dealt with whether Naruto, a crested macaque, had standing to state a claim under the Copyright Act over photographs of his own “independent, autonomous action.”⁸⁵ The dispute began when Slater—the wildlife photographer who set the cameras up and claimed ownership of the selfie—asked that the photos be taken off of Wikipedia. Wikipedia, in return, argued that the photo was uncopyrightable because it was taken by an

76. *Id.* at 958.

77. *Penguin Books U.S.A., Inc. v. New Christian Church of Full Endeavor, Ltd.*, 96 Civ. 4126 (RWS), 2000 U.S. Dist. LEXIS 10394 (S.D.N.Y. July 21, 2000).

78. *Id.* at *36.

79. *Id.* at *7–14 (“Schucman heard from the Voice that copyright registration should be sought for the Course.”).

80. *Id.* at *16.

81. *Id.* at *16–17.

82. *Id.* at *19, *32–33, *63–67.

83. *Naruto v. Slater*, No. 15-cv-04324-WHO, 2016 U.S. Dist. LEXIS 11041, 2016 WL 362231 (N.D. Cal. Jan. 28, 2016), *aff’d*, 888 F.3d 418 (9th Cir. 2018).

84. See, e.g., Joshua Berlinger, *PETA, Photographer Reach Settlement In ‘Monkey Selfie’ Case*, CNN (Sept. 12, 2017, 6:19 AM), <https://www.cnn.com/2017/09/12/asia/monkey-selfie-settlement/index.html>; Andres Guadamuz, *Can The Monkey Selfie Case Teach Us Anything About Copyright Law?*, WIPO MAG. (Feb. 2018), https://www.wipo.int/wipo_magazine/en/2018/01/article_0007.html.

85. *Naruto*, 2016 U.S. Dist. LEXIS 11041, at *3.

animal.⁸⁶ Seeing an opportunity to potentially strike a blow for animal rights, the People for the Ethical Treatment of Animals (PETA) filed a suit on behalf of Naruto as his “next friends.”⁸⁷ PETA alleged that Slater and the publishers of books containing the selfies violated Naruto’s copyright.⁸⁸

As this case was ongoing, the U.S. Copyright Office released an update to the Compendium Of U.S. Copyright Office Practices, which issued “The Human Authorship Requirement.”⁸⁹ Relying on citations from the *Trade-Mark Cases*⁹⁰ and *Burrow-Giles*,⁹¹ the Copyright Office concluded that it will only register an original work of authorship provided that the work was “created by a human being.”⁹² The requirement explicitly notes that a “photograph taken by a monkey” would not be considered an original work of authorship.⁹³ With this on the books, the court acknowledged and the Ninth Circuit affirmed that the Copyright Act does not confer standing upon animals like Naruto and dismissed the case.⁹⁴

Naruto’s holding that non-human entities cannot be considered “authors in law” leaves unanswered questions that have broad implications for ownership of non-human art. Slater’s active arrangement of the camera would seem to meet creativity standards under *Feist* and *Burrow-Giles*. However, unlike the psychography cases, the court did not address whether Slater would be able to enforce his own copyright on the photos.⁹⁵ Instead, Slater and PETA reached a settlement allowing Slater to continue to use the photos so long as he donates twenty-five percent of the revenue earned from them to a charity for crested macaques.⁹⁶ However, the ruling and the newest edition of the Compendium seem to suggest that the photos belong in the public domain. If that is the case, to what extent must a work be “created by a human being”?⁹⁷ How can those with financial interests in the output of non-human entities protect their investment? What sort of regime that protects non-human

86. *Id.* at *1–2.

87. *Id.*

88. *Id.* at *2.

89. U.S. COPYRIGHT OFFICE, *supra* note 2, § 306.

90. 100 U.S. 82 (1879).

91. 111 U.S. 53 (1884).

92. U.S. COPYRIGHT OFFICE, *supra* note 2, § 306.

93. *Id.* § 313.2.

94. *See* *Naruto v. Slater*, No. 15-cv-04324-WHO, 2016 U.S. Dist. LEXIS 11041, at *2, 2016 WL 362231, at *1 (N.D. Cal. Jan. 28, 2016), *aff’d*, 888 F.3d 418 (9th Cir. 2018).

95. *See generally* *Naruto v. Slater*, 888 F.3d 418 (9th Cir. 2018); *see supra* Section I.A.

96. Paulina Julia Perkal, *Monkey business finally settled: the ‘monkey selfie’ disputes*, KLUWER COPYRIGHT BLOG (Feb. 5, 2018), <http://copyrightblog.kluweriplaw.com/2018/02/05/monkey-business-finally-settled-monkey-selfie-disputes/>.

97. U.S. COPYRIGHT OFFICE, *supra* note 2, § 306.

creativity would best suit a tradition that inextricably intertwines the concepts of originality with authorship? This Note grapples with these questions to preclude a similar in-court outcome for AI generated works.

III. ORIGINALITY

The U.S. Compendium of Copyright Practices, citing *Feist*, states, “originality is ‘the bedrock principle of copyright’ and ‘the very premise of copyright law.’”⁹⁸ To qualify for copyright protection, a work must be original to the author, which means that the work must be “independently created by the author,” and it must possess “at least some minimal degree of creativity.”⁹⁹ This next Section shows that works by AI satisfy both elements by the nature of the process of output and by the underlying policies of copyright law.

A. INDEPENDENTLY CREATED

The threshold for independent creation is very low. Works are independently created so long as they are not literally copied.¹⁰⁰ A work of authorship may be original, even though it is not novel, inventive, or if “it closely resembles other works.”¹⁰¹ This low threshold allows a full gamut of protectable works while also setting parameters for infringement (direct copying).¹⁰² Generative AI’s purpose is to create novel outputs based on prompts, its learned process of recognition, and elements of randomness.¹⁰³ This process of generation usually means that each generated work can be considered independently derived. If the source material is not incorporated but is instead cut and pasted wholesale, the program is defective because it is not actually “generating” anything.¹⁰⁴

B. MODICUM OF CREATIVITY

Courts tend to distort the “modicum of creativity standard” as hinging on novelty or romantic abstraction. However, rather than artistic or inspired

98. U.S. COPYRIGHT OFFICE, *supra* note 2, § 308.

99. *Id.*

100. *Id.* § 308.1.

101. *Feist Publications, Inc. v. Rural Tel. Service Co.*, 499 U.S. 340, 345 (1991).

102. *Id.* (“The vast majority of works make the grade quite easily, [if] they possess some creative spark, ‘no matter how crude, humble or obvious it might be.’”).

103. *See* Rodley, *supra* note 15.

104. *See* Clark D. Asay, *Independent Creation in a World of AI*, FIU L. REV. (forthcoming 2020).

merit, the modicum of creativity requirement mainly functions as a bar to functional works.¹⁰⁵

Case law has traditionally considered creativity an individualistic and purely internal activity. Requisite creativity is characterized as the “fruits of intellectual labor” that “are founded in the creative powers of the mind”¹⁰⁶ and the “original intellectual conceptions of the author.”¹⁰⁷ This conception is rooted largely in the idea of the romantic Jeffersonian author who, through sheer intellect, creates original ideas out of nothing.¹⁰⁸ Works produced by a romantic author are by nature inherently original and creative, having sprung from a creative mind. Foucault scholars argue that this mythic figure is so central to our understanding about creativity that it obscures the collective and cumulative nature of creativity and misrepresents the “actual processes of cultural production.”¹⁰⁹ With this mythos on center stage, it becomes immeasurably difficult for courts and laypeople to detach the notion of creativity from popular representations. The image of the creative spark hitting the mind of the author like lightning such that words (or paint, sculpture, etc.) come pouring out like the final scene of Shakespeare in Love (1998) is ubiquitous and lauded.¹¹⁰ In actuality, Shakespeare should be considered the anti-romantic author, since few of his plots are original.¹¹¹ It is the reality of cumulative creativity, rather than the fantasy of the romantic author, that has driven art. But if creativity in copyright remains tied to the idea of romantic authorship, an AI work could not be considered original, since it is inherently algorithmic.

Another stream of cases presents the concept of originality as a stand-in for market value.¹¹² Setting aside artistic merit or romantic authorship, in 1839

105. See Karjalam, *supra* note 9, at 201; *Feist*, 499 U.S. at 346 (creating the standard that creativity is a low bar that works to filter out utilitarian works like an alphabetized phone book).

106. Trade-Mark Cases, 100 U.S. 82, 94 (1879).

107. Burrow-Giles Lithographic Co. v. Saronby, 111 U.S. 53, 58 (1884).

108. Oren Bracha, *The Ideology of Authorship Revisited: Authors, Markets, and Liberal Values in Early American Copyright*, 118 YALE L.J. 186, 188 (2008) (investigating the role of romantic authorship as a pervasive myth that is cyclically invoked or diminished depending on the interests at stake).

109. Bridy, *supra* note 24, at 4.

110. SHAKESPEARE IN LOVE (Universal Pictures 1998) (“A blank page. A hand is writing: TWELFTH NIGHT. We see Will sitting at his table . . . Will looks up from the table. ‘And her name will be . . . ‘Viola.’ He looks down at the paper, and writes: ‘Viola’”).

111. J. M. Pressley, *Shakespeare’s Source Material*, SHAKESPEARE RES. CTR., <http://www.bardweb.net/content/ac/sources.html> (last visited Dec. 13, 2019).

112. See Bracha, *supra* note 108, at 203 (In *Emerson v. Davies*, “Justice Story turned to the market as the sole arbiter of value”). See also Peter Jaszi, *Toward a Theory of Copyright: The*

and 1845 Justice Story decided cases based on a more practical understanding of the interdependent and cumulative nature of creativity.¹¹³ He relied on “the market as the only criterion for assessing value.”¹¹⁴ Justice Story saw that works imitate and build on each other. A work did not have to add anything new or culturally significant to be beneficial and protectable. If it was in demand, it was worthwhile.¹¹⁵

Justice Holmes was likewise unconcerned with romantic authorship. In *Bleistein v. Donaldson Lithographing*,¹¹⁶ Holmes affirmed that courts have no role in making aesthetic judgements. Using content neutrality and market value, the Court found that copyright had no threshold requirement of objective aesthetic value.¹¹⁷ Holmes focused not on the author or the merit of the advertisement, but on how the approval of the public eye and aesthetic elements placed them under statutory protection.¹¹⁸ *Bleistein* shows that works need not be particularly novel or skillful to be worthy of incentivization and protection.

As illustrated above, courts have competing views of originality. There remains a split on how and where creativity arises, and how important it is to copyright. Precedent like *Feist*, *Torab-Soft*, and Justice Story’s cases suggests AI-generated works meet the creativity bar. The demand for AI systems like Endel and Deep Dinosaur demonstrate enough market interest to satisfy Justice Story’s and Justice Holmes’ tests for creativity.¹¹⁹ Likewise, the choices AI systems make when generating content meet *Feist* and *Torab-Soft*’s standards for creativity in authorship.¹²⁰ Unlike an alphabetical phonebook or code-

Metamorphoses of Authorship, 1991 DUKE L.J. 455, 481–85 (1991) (examining cases in which “the [a]uthor vanishes” in the commercialization of cultural production).

113. Bracha, *supra* note 108, at 204. See, e.g., *Gray v. Russell*, 10 F. Cas. 1035 (C.C.D. Mass. 1839) (No. 5,728); *Emerson v. Davies*, 8 F. Cas. 615 (C.C.D. Mass. 1845) (No. 4,436).

114. Bracha, *supra* note 108, at 204.

115. *Id.*

116. 188 U.S. 239 (1903) (holding that commercial lithographs are copyrightable beyond their mere commercial value).

117. Bracha, *supra* note 108, at 200.

118. See Jaszi, *supra* note 112, at 482.

119. See, e.g., Andrew Liszewski, *A Neural Network Turned a Book of Flowers into Shockingly Lovely Dinosaur Art*, GIZMODO (June 19, 2017, 11:27 AM), <https://gizmodo.com/a-neural-network-turned-a-book-of-flowers-into-shocking-1796221045> (“The estate of M.C. Escher may have just lost its lucrative stranglehold on the dorm room poster market thanks to . . . a deep learning algorithm.”); *Endel.io*, *supra* note 33 (“[Endel] will be introduced to a larger audience through the extensive reach of the Arts Music division’s marketing and distribution resources . . . with investors including Amazon Alexa Fund, Avex Inc., Major Lazer’s Jillionaire, Plus 8 Equity Partners, Kima Ventures, Impulse Ventures, and world-famous DJ La Fleur.”).

120. See *supra* Section II.B; see also Karjalam, *supra* note 9, at 172.

finder where the end-result is necessarily the same, generative AI incorporates randomness into the choices given by its parameters so that the outcome is not purely a function of its form.¹²¹

At the heart of the matter is whether courts and legislatures will make policy changes to recognize AI-generated works as creative as they have in the past. In the psychography cases, courts found that a “non-human source should not be a bar to copyright.”¹²² In signing photographs into copyright law in the wake of the Civil War, Congress and President Lincoln made a policy judgement that photography itself, as a medium and a means of providing societal value, should be protected. If not simply for more floral dinosaurs, encouraging artistic AI will produce innumerable discoveries and solutions much as photography has.¹²³ And, as some courts acknowledge, “all creativity is inherently algorithmic and that works produced autonomously by computers are therefore less heterogeneous to both their human counterparts and existing copyright doctrine.”¹²⁴ The basic story of Romeo and Juliet has been done many times over, and yet, as *Nichols v. Universal Pictures Corp.* teaches us, building on generalized ideas and clichés are nonetheless protectable and encouraged.¹²⁵ As courts have similarly noted, most of Shakespeare’s plots came directly from existing stories—like Deep-speare, he learned and practiced on them to produce recognizably creative works.¹²⁶

121. See Rodley, *supra* note 15.

122. Penguin Books U.S.A., Inc. v. New Christian Church of Full Endeavor, Ltd., 96 Civ. 4126 (RWS), 2000 U.S. Dist. LEXIS 10394 (S.D.N.Y. July 21, 2000).

123. See *Science Photography*, SCITABLE BY NATURE EDUCATION (2014) <https://www.nature.com/scitable/spotlight/science-photography-10285104/> (“Careful observation of evidence is the heart of modern scientific method; photography has always been valued as an objective technique of observation, freed from the potential for human error implicit in the older method of sketching experimental observations. Just as important, photography can gather data that can’t be detected or processed by the human eye. Using technology that captured the scattered path of invisible x-ray beams, for example, Rosalind Franklin in 1952 was able to reveal the precise structure of intertwined DNA molecules—what we now recognize as the double helix.”); Demis Hassabis, *On AI’s Potential*, ECONOMIST (Nov. 21 2019), <https://worldin.economist.com/article/17385/edition2020demis-hassabis-predicts-ai-will-supercharge-science> (“By deepening our capacity to ask how and why, AI will advance the frontiers of knowledge and unlock whole new avenues of scientific discovery, improving the lives of billions of people.”).

124. Bridy, *supra* note 24, at 2.

125. 45 F.2d 119, 122 (2d Cir. 1930) (holding no infringement where the same stock characters and basic plot were used). See also *Boucicault v. Fox*, 3 F. Cas. 977, 982 (C.C.S.D.N.Y. 1862) (No. 1,691); *Emerson v. Davies*, 8 F. Cas. 615 (C.C.D. Mass. 1845) (No. 4,436).

126. *Boucicault*, 3 F. Cas. at 982 (“[T]he plays of Shak[e]spere are framed out of materials which existed long before his time, and were gathered by him” such that the skill and judgment in the selection and exposition constitute the basis of his reputation.).

Questioning the value or artistic worth of AI-produced work undercuts copyright law's goal of encouraging the creation of art. Like any other original expressive work, AI works introduce new ideas and aesthetics. They also provide society with an insight into the most pervasive patterns of human creativity.¹²⁷ Humans create AI as a way of furthering creative thought and demonstrating different or non-human ways of creative expression. From the “enjoyably strange” AI generated short film *Sunspring*¹²⁸ to the “shockingly lovely” Deep Dinosaur art,¹²⁹ there already exists widespread public recognition and demand for AI generated works.

IV. AUTHORSHIP

Like creativity, authorship's reliance on the role of the romantic author has created discomfort with recognizing machine produced works. The 2017 update to the Compendium on Copyright Practices repeatedly makes very clear that a human author must have created the work to be copyrighted.¹³⁰ However, prior to *Naruto* and the 2017 edition of the Compendium, authorship was always impliedly, but not explicitly, human.¹³¹ Specifically, that definition states, “the creator of the original expression in a work is its author. The author is also the owner of copyright unless there is a written agreement . . . In cases of works made for hire, the employer . . . is considered to be the author.”¹³² Copyright law does not distinguish between individuals, corporations, or metaphysical beings for the incentivization of aesthetic works. AI can and should fit into this regime. The next Section explains how lessons from the works made for hire doctrine can ground AI authorship as a viable concept.

A. LESSONS FROM THE WORKS FOR HIRE REGIME

The works made for hire (WMFH) regime is an exception to the rule that only the author can rightfully claim copyright. If a work is made for hire, an

127. See, e.g., BENJAMIN, SUNSPRING (an AI produced science fiction screenplay that repeats the line “I don't know”).

128. Michael Nordine, *Watch 'Sunspring,' a Short Sci-Fi Film Written by an Artificial Intelligence Algorithm*, INDIEWIRE (June 9, 2016, 3:10 PM), <https://www.indiewire.com/2016/06/watch-sunspring-sci-fi-artificial-intelligence-ai-written-1201687033/>.

129. Liszewski, *supra* note 119.

130. U.S. COPYRIGHT OFFICE, *supra* note 2, §§ 302, 306, 313.2, 803.5(C), 808.7(C) (wherever authors are mentioned, the human author requirement is reiterated: the cited sections are the human authorship requirement itself as well as examples of where it arises throughout the Compendium).

131. See *Definitions*, U.S. COPYRIGHT OFFICE, <http://www.copyright.gov/help/faq-definitions.html> (last visited Feb. 11, 2020).

132. *Id.*

employer is considered the author in which initial copyright vests even if an employee actually created the work.¹³³ Early courts decided WMFH cases on the basis of implied intent rather than who the original author was.¹³⁴ Rather than having copyright vest first in the author and then be subsequently assigned, the initial allocation of copyright between parties was “implied in the [employment] relationship between them.”¹³⁵ Those who procured the work (like book commissioners) or orchestrated its creation (like a theater owner) were granted copyright on the basis of the nature of the relationship.¹³⁶ By the nineteenth century, courts evolved their rationale. The key consideration was “the degree of involvement of the employer’s representatives in the creative process [and] the supervision exercised or in the expenditure undertaken by it.”¹³⁷ In effect, this assumed an employer had ownership over the employee’s work unless the employee could point to an explicit, contractual assignation of ownership.¹³⁸ Rights no longer vested in the artist by the nature of their romantic authorship. Instead, the work became an entity separated from the employee’s labor under the understanding that their artistry was essentially a tool to be used by the whims of the employer.¹³⁹

WMFH presents several important consequences for an AI copyright regime. The policy rationale behind WMFH is to incentivize employers and grant them control over works made on their behalf.¹⁴⁰ Like a Hollywood studio, an AI programmer invests time and resources to develop protectable systems. This investment should be rewarded in kind. Programs like Deep Dinosaur and programmers like Chris Rodley serve the general copyright goals of innovation and culture and should be protected accordingly.

Further, corporations are non-human entities in which copyright vests. Consequently, WMFH strengthens the psychography cases’ conclusion that

133. U.S. COPYRIGHT OFFICE, CIRCULAR 9: WORKS MADE FOR HIRE 1 (2012).

134. Bracha, *supra* note 108, at 253.

135. *Id.*

136. *Id.* at 252–54 (examining Keene v. Wheatley, 14 F. Cas. 180 (C.C.E.D. Pa. 1861) (No. 7644) and Lawrence v. Dana, 15 F. Cas. 26 (Clifford, Circuit Justice, C.C.D. Mass. 1869) (No. 8136)).

137. *Id.* at 254.

138. *Id.* at 255.

139. See Robert C. Denicola, *Ex Machina: Copyright Protection for Computer-Generated Works*, 69 RUTGERS U.L. REV. 251, 276 (2016) (“William Patry, in his treatise on copyright law, views the employer as author rule as an example of an ‘instrumental approach’ to copyright authorship.”)

140. 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, 711 (2017).

copyright can subsist in a non-human work.¹⁴¹ By divorcing the artist from their presupposed copyright, WMFH creates an important distinction between the author-in-law, with whom the rights vest, and the author-in-fact, who undertook the creative steps to produce the work.¹⁴² This distinction is an important and major exception to copyright resting with the actual artist. In so doing, it is also as a means of recognizing the creator of a work without allocating copyright to them. As a legal fiction, it allows companies to maximize the profitable labor of their employees by appealing to the need to protect investment and created “value” as the basis of copyright.¹⁴³ This adaptation mirrors the evolution of originality as not being intrinsically meritorious by reason of romantic authorship, but as a representation of subjective market value over which objective courts have limited, if not arbitrary, purview.

V. APPROACHING THE FUTURE: MODELS AND RECOMMENDATIONS FOR THE TREATMENT OF ARTISTIC AI COPYRIGHT

The current state of U.S. copyright law for AI generated works is uncertain and needs to be definitively clarified to establish the rights and limits of a rapidly expanding industry. As it stands, “copyright law is not currently structured to accommodate the particular authorship matrix of people-who-write-programs-that-make-art.”¹⁴⁴ Although the Compendium and its human-authorship requirement does not have the force of law, it nonetheless reveals the attitudes and practices of the Copyright Office and is taken to “provid[e] expert guidance” to courts.¹⁴⁵ Courts are unlikely to follow *Torab Soft*’s reasoning and extend copyright to the software owner where the software does the “lion’s share” of the work. Rather, relying on *Naruto* and the Compendium,

141. The Ninth Circuit in *Naruto v. Slater* noted that, although courts have allowed corporations to sue, corporations “are formed and owned by humans; they are not formed or owned by animals.” Nevertheless, this distinction made by the court only serves to illuminate how corporations under the WMFH regime are interpreted as non-human human entities nonetheless entitled to legal rights. 888 F.3d 418, 426 n.9 (9th Cir. 2018). See Bridy, *supra* note 24, 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.”).

142. See Bridy, *supra* note 24, at 26 (“the work made for hire doctrine acknowledges a disidentity between the author-in-fact (the employee or contractor) and the author-in-law (the employer or other person for whom the work was made)”).

143. Bracha, *supra* note 108, at 260–61.

144. Bridy, *supra* note 24, at 22.

145. U.S. COPYRIGHT OFFICE, *supra* note 2, at 1.

a court would likely deny copyright protection for an AI-generated work. While U.S. programmers are without an avenue to rights through litigation, countries such as Hong Kong (SAR),¹⁴⁶ India,¹⁴⁷ Ireland,¹⁴⁸ New Zealand,¹⁴⁹ and the United Kingdom¹⁵⁰ allow AI-produced works to be protected.¹⁵¹ This discrepancy makes clear that the United States needs to address the status of artistic AI works in the near future.

A. A BRIEF OVERVIEW OF PROPOSED MODELS OF AI COPYRIGHT OWNERSHIP BY U.S. LEGAL SCHOLARS

Among U.S. legal scholars, the discourse on copyrightable AI works is governed by four main models. Each differently reflects concerns of how to place AI within authorship. Each tries to speak to whether the work is: (1) copyrightable in the first place (if non-humans can be creative or “original”); (2) whether and how authorship can vest in a non-human; and (3) the administrability of the proposed changes. To evaluate the models, this Section asks three questions that bear on the efficacy and rationales: Who is this meant to incentivize? Is there a need for this model? How would this affect the market for these works?

1. *Works Remain in the Public Domain*

Under the current copyright regime, AI works are in the public domain. Even though it is the official status quo, enforcing it would likely mean heightened scrutiny on behalf of the Copyright Office to ensure that programmers are not copyrighting AI generated works, as they currently are. Proponents of this model claim that incentive is maintained in two ways.¹⁵² First, because programmers can register copyright on the AI software itself, there is no logical reason for furthering the stream of ownership down to the

146. Hong Kong Copyright Ordinance, (1997) Cap. 528, 40, 44, §§ 11(3), 17(6).

147. Copyright (Amendment) Act, 1994, No. 38, Acts of Parliament, 1994 § 2(vi) (India).

148. Copyright And Related Rights Act 2000 (Act No. 28/2000) (Ir.) § 21(f), *available at* <http://www.irishstatutebook.ie/eli/2000/act/28/section/21/enacted/en/html#sec21>, *archived at* <https://perma.cc/XWA4-D7QP>.

149. Copyright Act 1994, s 5(2)(a) (N.Z.).

150. Each country’s statutory language either replicates or closely matches the United Kingdom’s, where “[i]n the case of a literary, dramatic, musical, or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken,” and only differ in the term granted—either seventy or fifty years from the date of creation. Copyright, Designs and Patents Act 1988, c. 1, § 9(3), 12(2) (Eng.).

151. Andres Guadamuz, *Artificial intelligence and copyright*, WIPO MAG. (Oct. 2017), https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html.

152. 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. 11, 21–22.

AI outputs.¹⁵³ However, much like a manufacturer makes money by the product, not the production line, a programmer creating an artistic AI would be hard-pressed to monetize the program itself. The public domain proponent's response is that the creators of the AI can also be incentivized through the right to dissemination.¹⁵⁴ By treating owners of the AI as a publisher, AI generated works would exist behind a paywall and allow the existing structure of AI copyright to remain unchanged.¹⁵⁵ Reviews of the efficacy of paywalls are mixed, but the general consensus is they are only sustainable if the provider has a high level of reputation and uniqueness of content.¹⁵⁶ Proponents further argue that this gap may be filled by sites like Patreon, an "online tip jar" where artists crowdfund directly from fans either through one-time donations or subscriptions.¹⁵⁷

Theoretically, this model would work best for hobby artists like Chris Rodley, whose Deep Dinosaur and iterations thereof would likely bring in revenue for the high-resolution printable versions.¹⁵⁸ However, if those works are uploaded and available for download on another site, Rodley and others like him would be unable to enforce an action against the pirating site, since the works are technically in the public domain. This could incentivize a generation of AI works that are impossible or difficult to copy, such as experiential or constantly changing outputs. More likely though, with the knowledge that the free version will be uploaded elsewhere, fewer patrons would pay and market incentivization would decline. Additionally, for companies like Endel, who seek to monetize their investment via streaming services, this model would make that impossible, since streaming licensing is

153. *Id.*

154. *Id.*

155. *Id.*

156. See Kristen Senz, *Are Paywalls Saving Newspapers?*, HARVARD BUS. SCH. WORKING KNOWLEDGE (July 8, 2019), <https://hbswk.hbs.edu/item/are-paywalls-saving-newspapers>; see also Mike Masnick, *The Media's Paywall Obsession Will End In Disaster For Most*, TECHDIRT (May 8, 2018, 9:37 AM), <https://www.techdirt.com/articles/20180506/11501539779/medias-paywall-obsession-will-end-disaster-most.shtml> ("It's not that we think that paywalls are somehow "bad," but that (1) for most publications, they won't actually work and (2) they are quite frequently counterproductive.").

157. Adi Robertson, *Inside Patreon, The Economic Engine Of Internet Culture*, THE VERGE (Aug. 3, 2017, 11:36 AM), <https://www.theverge.com/2017/8/3/16084248/patreon-profile-jack-conte-crowdfunding-art-politics-culture>.

158. See, e.g., Phil Wang, *Phil Wang is creating This Person Does Not Exist*, PATREON, <https://www.patreon.com/lucidrains> (last visited Feb. 11, 2020) (the creator of thispersondoesnotexist.com currently has seventeen patrons at \$37 dollars a month as of February 2020).

predicated on copyrightability.¹⁵⁹ Without this assurance, large companies in those fields, like Warner Music, would be disincentivized to buy into the new industry. This would shift the market away from investment in music and video media, since those two areas are largely dominated by streaming services.

2. *AI as Both the Author and Owner*

The second model would have the AI be both owner and author. The need for this model is unclear because incentives are meant to entice human decision makers. Proponents are often thinking about the distant future in which robots and androids may have fully vested rights and possess the discretion over whether to produce future works.¹⁶⁰ But until the day that a robot expresses a desire for copyright on its works, this model only incentivizes programmers more interested in far-reaching philosophical and legal implications of granting non-human actors human rights than monetizing their creations.

This model would have some bizarre impacts on the market. It does not deal with issues of liability. It is also unclear how programmers who do seek incentive would reap the rewards of investment if all interests vest in the AI itself. The only logical element to come out of this model would be a fixed term limit, since AI do not have “lives.” Ultimately, it would likely chill investment by being even more unmanageable and ambiguous than the current regime.

3. *Modifying the Definition of an “Employee” Under the Work for Hire Regime*

Popular among American scholars is a modified WMFH regime. Overall, this model is not likely to chill investment, since it establishes all the copyright protections of a traditional work. This proposal essentially modifies the definition of an “employee” under 17 U.S.C. § 101 to include AI.¹⁶¹ As in traditional WMFH, copyright would then vest in the human or corporate entity that procured the work. Some scholars assume that the programmer is the employer,¹⁶² but others take the “person for whom the work was prepared” to mean either the programmer or the end user.¹⁶³ When attributing ownership

159. See *Music Licensing Modernization Act*, U.S. COPYRIGHT OFFICE, <https://www.copyright.gov/music-modernization/115/> (last visited Feb. 11, 2020).

160. See Andrew J. Wu, *From Video Games to Artificial Intelligence: Assigning Copyright Ownership to Works Generated by Increasingly Sophisticated Computer Programs*, 25 AIPLA Q.J. 131 (1997).

161. Hristov, *supra* note 5, at 447.

162. See, e.g., *id.* at 445.

163. 17 U.S.C. § 201(b) (2018).

to the programmer, the incentive clearly rewards the work done to create the AI, and also ensures that liability for infringement falls on the person best placed to prevent it.

But some scholars, like Professor Shlomit Yanisky-Ravid, suggest that when users interact with generative AI, they should be considered the owners of the works.¹⁶⁴ For tool-like AI, this makes sense, because the user is doing the lion's share of the work. But these works can already receive copyright protection because they involve substantial human creativity.¹⁶⁵ When it comes to truly generative works, it is unfair to attribute copyright to a user. Unless mitigated through licensing or contract, an unaware user clicking through a site like thispersondoesnotexist.com¹⁶⁶ could suddenly be on the hook for an infringing work that they had no part in producing, other than clicking “generate.”

This model also acknowledges the issue of protection term length. A traditional work is protected by copyright for the life of the author plus seventy years.¹⁶⁷ The term of copyright protection of a work made for hire is ninety-five years from the date of publication or one hundred twenty years from the date of creation, whichever expires first.¹⁶⁸ While still an excessively long period amount of time for AI works to be protected, this explicit limit nonetheless speaks to fairness within the copyright system and ensures works eventually enter the public domain.

This model aims to quickly address protecting AI works using an existing copyright mechanism. However, the Supreme Court has suggested that the WMFH doctrine is very limited in scope, and applies only where “Congress has expressed a clear and explicit intent to override section 102.”¹⁶⁹ Because implementing such a substantial change to the doctrine would require new legislation, it seems ineffective to try and push AI into a regime that is primarily about assignation of agency.¹⁷⁰ As of yet, AI are not sentient and do not have agency—so it is incongruous to incorporate them in a regime that requires a

164. Yanisky-Ravid, *supra* note 140, at 707 (“[W]e should view AI systems as working for the users, and hence the users should bear accountability for the systems’ production, in addition to the benefits thereof.”).

165. *See supra* Section II.B.

166. THIS PERSON DOES NOT EXIST, <https://thispersondoesnotexist.com/> (last visited Feb. 11, 2020) (a web-based GAN that generates a new human face each time the site is refreshed).

167. U.S. COPYRIGHT OFFICE, WORKS MADE FOR HIRE, *supra* note 133, at 3.

168. *Id.*

169. Yanisky-Ravid, *supra* note 140, at 715.

170. *See* U.S. COPYRIGHT OFFICE, WORKS MADE FOR HIRE, *supra* note 133, at 2 (devoting a section to “Agency Law”).

test to determine whether the work was actually made in an employment context and the employee was an “agent.” An AI and its subsequent works will always be attributable as a creation to an individual or a team. Instead of using an existing regime as a red herring to distract legislators from the actual changes to the law they would implement, it is worthwhile to explicitly and directly create a carve-out for AI works.

4. *Applying Existing U.K. Law to the United States*

Finally, some proponents advocate for the wholesale adoption of current U.K. copyright law, which treats computer-generated works as if they originated directly from the programmer. That law states that “[i]n the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.”¹⁷¹ The United Kingdom’s Copyright Act goes on to define a computer-generated work as one that “is generated by computer in circumstances such that there is no human author of the work.”¹⁷² This provision creates an exception to human authorship by recognizing the time and resources that go into creating a generative AI, even if the actual work is undertaken by the machine.¹⁷³ Additionally, when it comes to the copyright term, the United Kingdom limits computer generated works to fifty years from the end of the year of creation.¹⁷⁴

Like the modified WMFH regime, this model grants full copyright protection and would therefore not chill investment. Because this regime fits how the market is functioning now in terms of programmers putting their names on AI-generated works,¹⁷⁵ it would not change applicable streams of revenue. The added benefit of a shortened term limit would ensure that programmers do not benefit for longer than is fair. Critics of this model note the ambiguity of the person who made the “arrangements necessary” for the work to be generated.¹⁷⁶ Depending on the interpretation, this could be the programmer or the user of the program. If the engineers or programmers of the AI are taken to be the copyright owners, return on investment is guaranteed and liability rests fairly on the creators.¹⁷⁷ However, this should be

171. Copyright, Designs and Patents Act 1988, c. 1, § 9(3) (Eng.).

172. *Id.* c. 10, § 178.

173. Guadamuz, *supra* note 151, at 4.

174. Copyright, Designs and Patents Act 1988, c. 1, § 12(7) (Eng.).

175. *See, e.g.*, ENDELIO, *supra* note 35.

176. *See* Bridy, *supra* note 24, at 27.

177. Pratap Devarapalli, *Machine Learning to Machine Owning: Redefining the Copyright Ownership from the perspective of Australian, U.S., UK and EU law*, 40 EUR. INTELL. PROP. REV. 722, 727 (2018).

clearly distinguished within the text of the law to limit disputes arising out of ambiguity.

B. PROPOSED MODEL: AI AS THE AUTHOR-IN-FACT AND THE PROGRAMMER AS THE AUTHOR-IN-LAW

This Note's proposed model lists the AI as the author-in-fact and the programmer as the author-in-law. This distinction serves to explicitly indicate that AI generated works will be treated differently than traditional copyrightable works and allows the Copyright Office to easily delineate between the two. This model would include a term limit—either fifty years to meet international standards¹⁷⁸ or fewer depending on what is deemed equitable by the legislature. For fair allocation of benefits and risks, the programmer, not the user, is explicitly listed as the author. Thus, the person reaping rights-based incentives also faces liability if their program is faulty. This model specifically incentivizes creators of generative AI who would be unable to monetize their software without monetizing the output.

Creators are already copyrighting their AI generated works and profiting off them. But there is no mechanism for enforcing the right against infringement nor does the term of life of the programmer plus seventy years accurately reflect the payoff of time and resources for the process of generation following the initial creation of the AI. Further, any legal challenge against a generated work would likely lead to its release into the public domain, as implied in *Naruto v. Slater*. A definitive regime needs to be put into place to clearly delineate the bounds of what rights are and are not applicable to AI-generated works. As proponents of the WMFH model suggest, it is expedient to rely on ties to existing U.S. copyright law. This model uses a legal fiction of authorship parallel to the one put forth by WMFH, in which copyright vests as a matter of law in someone who is not the author-in-fact. As with the WMFH and U.K. models, this proposed model would ensure that the market continues to encourage creators of AI, while the term limit reflects that each work is less impactful as a human-created work.

Finally, this modification would be made directly to the Copyright Office's "Copyrightable Authorship" section. Legislation is needed to make any of the changes listed in the above models (excepting public domain). It is unproductive for the legislature to decide on an adequate or easy-sounding, but problematic option, such as WMFH.¹⁷⁹ An independent clause on AI

178. See *supra* notes 146–50.

179. See, e.g., Hristov, *supra* note 5, at 452–53; see also Timothy L. Butler, *Can a Computer be an Author—Copyright Aspects of Artificial Intelligence*, 4 HASTINGS COMM. & ENT. L.J. 707, 741–

would not only clarify the distinctiveness of AI as a copyright matter, it would also speak to the willingness to address technological revolution head-on, in the footsteps of President Lincoln and Justice Holmes.

VI. CONCLUSION

It is important to encourage creative, not just utilitarian, AI. Artistic AI not only develops the full potential and breadth of AI but provides a point of insight into what creativity means, how humans reflect on creative works, and how alternative creative sources can drive new understandings and innovations. As AI-as-an-industry and source of creative works continues to expand, the need for clarification and a modified regime is pressing. A patch fix like adding “human” to authorship requirements or modifying the definition of “employee” to slip AI into an ill-fitting regime is inefficient. The coming update needs to keep the policies and historical trajectories behind copyright in mind. Congress and the courts have altered the doctrine and requirements in the face of new technologies before—this Note and its proposed changes argues for a continuing willingness to adapt the law to technological advances. While AIs do not dream of copyright protection, their creators and proponents do. They need a copyright regime that adequately reflects and delineates the protection of that dream.

42 (1982) (explaining that the contractual nature of WMFH imposes limitations on redefining the meaning of “employee”).

