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Original Works of “Authorship”: Artificial Intelligence as Authors of Copyright

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ORIGINAL WORKS OF “AUTHORSHIP”: ARTIFICIAL INTELLIGENCE AS AUTHORS OF COPYRIGHT

By Veronica Acevedo

I. INTRODUCTION

Protecting creative works has been well established in the United States’ copyright doctrine. The drafters of the Constitution had the forethought to address the protection of creative works and novel inventions.¹ Since then, the Copyright Act of 1976 has defined copyright protection limiting it to “original works of authorship fixed in any tangible medium of expression...”² Under current copyright law, the author is the creator of the original expression in a work.³ The courts have defined an author as “to whom anything owes its origin; originator; maker; one who completes a work of science or literature.”⁴ The author is also the owner of copyright unless there is a written agreement assigning rights to another party.⁵ Until recently, there was never a question about who—or what—can be an author.

However, throughout the evolution of the copyright doctrine, no one could imagine a non-human entity that could not only think and decide like humans but also create.⁶ Artificial intelligence (AI), as first coined and defined in 1995 by John McCarthy, a computer scientist and Stanford University professor, is “the science and engineering of making intelligent machines.”⁷

¹ U.S. CONST. art. 1, § 8, cl. 8.

² 17 U.S.C. § 102(a) (2018).

³ U.S. COPYRIGHT OFFICE, COPYRIGHT CIRCULAR 9: WORKS MADE FOR HIRE (2021).

⁴ *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 58 (1884).

⁵ *Id.*

⁶ Luo Li, *Intervention Report for the WIPO Conversation on Intellectual Property and Artificial Intelligence (Third Session)*, https://www.wipo.int/export/sites/www/about-ip/en/artificial_intelligence/conversation_ip_ai/pdf/ind_li.pdf (last visited Dec. 14, 2021)

⁷ Christopher Manning, *Artificial Intelligence Definitions*, STANFORD UNIVERSITY HUMAN-CENTERED ARTIFICIAL INTELLIGENCE (Sept. 2020), <https://hai.stanford.edu/sites/default/files/2020-09/AI-Definitions-HAI.pdf>

This category of intelligence is more prevalent today and the definition has expanded as technological advances have evolved. As a result of the rapid development of artificial intelligence, autonomous systems are now capable of learning and acting akin to the human thought processes.⁸

While artificial intelligence has developed decision-making and thinking processes, it has also developed the ability to create. Recently, artificial intelligence has learned to generate art, music, and literary works independently from human programmers. Artificial intelligence has evolved into making autonomous decisions based on set parameters.⁹ The artificial intelligence important to this discussion involves AI that makes individualized decisions separate from programmers' instruction. However, this artificial intelligence still relies on the data collected by the programmer to make these decisions and has not yet grown into complete autonomous and independent decision-making. For example, in 2016, a Japanese artificial intelligence program created a novel, *The Day A Computer Writes A Novel*. This novel was entered into a national literary competition and passed the first round without the judges knowing that it was a work created by artificial intelligence.¹⁰ Here, programmers set the parameters, such as inputting words and sentences, before letting the program “write” the novel autonomously.¹¹ Similarly, a portrait, entitled *The Next Rembrandt*, was created by a computer using a facial recognition

⁸ Andres Guadamuz, *Artificial intelligence and Copyright*, WIPO MAGAZINE (Oct. 2017) https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html.

⁹ Id.

¹⁰ Chloe Olewitz, *A Japanese A.I. program just wrote a short novel, and it almost won a literary prize*, DIGITAL TRENDS (Mar. 23, 2016), <https://www.digitaltrends.com/cool-tech/japanese-ai-writes-novel-passes-first-round-national-literary-prize>.

¹¹ Id.

algorithm that analyzed thousands of works by the artist Rembrandt.¹² Here, the programmers selected Rembrandt's works of art as the parameters, and the artificial intelligence independently decided that the subject of the new work should be around 30-40 years old, wearing black clothing, a hat, and facing right. The AI then created the Next Rembrandt based on these independent decisions in the style of the artist. In 2017, a Google-owned artificial intelligence company created a system that uses a speech-generating program that can create music.¹³ For instance, much like how the AI created the Next Rembrandt, "if you train it with an American's speech, it produces American speech... And if you train it with Chopin, it produces... piano in a logical, one might even be tempted to say creative vein."¹⁴ Once again, the data was collected by programmers, but the artificial intelligence made independent decisions that created the musical works.

As technology evolves artificial intelligence will only continue to grow in autonomous creation. The question then becomes, if artificial intelligence can create original, independent works that meet the modicum of creativity requirements, can they be considered "authors" for purposes of copyright? As previously mentioned, an author is defined as "he to whom anything owes its origin."¹⁵ As seen above, these artificial intelligence programs generated works of art owe their origin to the AI itself. As artificial intelligence becomes more prevalent in creative works, the definition of who—or what—can be an author of copyright has come up for debate. Countries around the world are starting to address artificial intelligence for copyright purposes

¹² Guadamuz, *supra*, note 8.

¹³ Devin Coldewey, *Google's WaveNet uses neural nets to generate eerily convincing speech and music*, TECHCRUNCH (Sept. 9, 2016), <https://techcrunch.com/2016/09/09/googles-wavenet-uses-neural-nets-to-generate-eerily-convincing-speech-and-music>.

¹⁴ *Id.*

¹⁵ Burrow-Giles Lithographic at 58.

and the United States is likely to follow soon. The U.S. copyright office has recently addressed the World Intellectual Property Organization in 2020 stating, “in light of the more recent interest in and development of AI, the Copyright Office believes that now is the time to analyze the intersection of copyright and AI more deeply.”¹⁶ Since the United States is looking to address artificial intelligence, it is important to highlight existing copyright doctrines that can incorporate AI.

While currently human interaction is preferred under U.S. copyright law, artificial intelligence will continue to grow more independent and more creative. As artificial intelligence grows, it will be important to determine how, if any way at all, artificial intelligence can be addressed in terms of copyright. Although some may argue that artificial intelligence should not be granted copyright protection, it is important to grant copyright protection to encourage and promote innovation.

While the next practical steps of addressing artificial intelligence in copyright law may be uncertain, there are options within the already established copyright regime that would be able to incorporate artificial intelligence as authors of creative works. The current copyright law in the United States has limited authors to human beings.¹⁷ However, artificial intelligence can be addressed as non-human authors of creative works for copyright much like corporations under the work made for hire doctrine or, if not fully recognized as an author, artificial intelligence

¹⁶ Maria Strong, *Comments of the United States Copyright Office to the World Intellectual Property Organization: Impact of Artificial Intelligence on IP Policy*, THE REGISTER OF COPYRIGHTS OF THE U.S. (Feb. 14, 2020), https://www.wipo.int/export/sites/www/about-ip/en/artificial_intelligence/call_for_comments/pdf/ms_usa_usco.pdf (“As technology evolves and AI becomes more prevalent, it is important to keep a global dialogue open, while encouraging countries to individually explore and establish their perspectives.”).

¹⁷ U.S. COPYRIGHT OFFICE, COMPENDIUM OF THE U.S. COPYRIGHT OFFICE PRACTICES § 313.2 (3d ed. 2021); *Burrow-Giles.*, 111 U.S. at 58.

could be considered a joint author under the joint work doctrine. The United States could look to incorporate artificial intelligence as authors in already established copyright doctrines, such as works made for hire and joint works rather than establish new law. This would encourage an important step in addressing artificial intelligence now rather than when it develops into completely autonomous decision-making. By establishing artificial intelligence as authors of copyright now as there is still human input, it could prevent questions about autonomous artificial intelligence in the future and thus be more efficient and provide clarity.

This paper will discuss artificial intelligence and how to incorporate it into copyright law. It will look at how doctrines, such as work made for hire and joint work, could allow the United States to incorporate artificial intelligence as authors for copyright purposes. First, this paper will introduce how copyright intersects with artificial intelligence and why it is important to address these issues. Next, it will discuss the current state of copyright law, as it relates to artificial intelligence, in the United States which focuses on human input. This paper will then discuss the work made for hire doctrine which allows for corporations, to be an “author” of creative works as a non-human entity. The paper will then discuss and compare both corporations and artificial intelligence and how they are structured and make decisions. Then, it will discuss how they both relate to the work made for hire doctrine. Lastly, this paper will consider the joint work doctrine as a compromise to address the issues of non-human entities as authors and owners of copyrights.

II. COPYRIGHT AND ARTIFICIAL INTELLIGENCE

Originally, the computer was a tool that supported the creation of creative works by humans.¹⁸ However, as computer programming evolved, artificial intelligence began independently producing creative works based on parameters set by programmers.¹⁹ As mentioned above, artificial intelligence is now being used to create novels, art, music, journalism, gaming, and other creative works.²⁰

Machine learning capabilities have increased artificial intelligence generated works and an understanding there are other sources of creativity other than human beings.²¹ So long as these works meet the requirements of originality and creativity then they should in theory be protected under U.S. copyright regimes.²² However, AI-generated works are not currently protected since artificial intelligence is not recognized as authors for these purposes and thus is free for public use.²³

Generally, the current theory on intellectual property is premised on “providing creators with just enough incentive to create artistic, scientific, and technological works of value to society at large by preventing certain would-be copiers’ free-riding behavior.”²⁴ Protecting copyright by providing exclusive rights encourages creativity by preventing others from taking advantage of their work. Providing protection incentives innovation, however, works generated by artificial intelligence cannot currently be protected. By not recognizing artificial intelligence as authors,

¹⁸ Kalin Hristov, *Artificial Intelligence and the Copyright Dilemma*, 57 IDEA 431, 438 (2017).

¹⁹ *Id.*

²⁰ Guadamuz, *supra*, note 8.

²¹ Hristov, *supra*, note 18.

²² *Id.*

²³ *Id.*

²⁴ Jeanne C. Fromer, *Expressive Incentives in Intellectual Property*, 98 VA. L. REV. 1745, 1746 (2012).

copyright, whose purpose is to provide incentive and protection to creators, would be failing to accomplish its goal.²⁵ Artificial intelligence serves the interest of the public which is also emphasized by the goals of intellectual property.²⁶ The Supreme Court has emphasized that the creators' exclusive rights "... is wholly secondary" compared to society.²⁷ The Court also stated that "[t]he sole interest of the United States ... [is] the general benefits derived by the public from the labors of authors."²⁸ Artificial intelligence should be protected because it provides a public interest derived and the United States emphasizes the importance of public benefits derived from intellectual property.

By not granting rights to artificial intelligence as authors, there would be no incentive to invest in artificial intelligence and encourage creative programming if there were no guaranteed exclusive rights. For instance:

While it is difficult to ascertain the precise impact this would have on the creative economy, it may well have a chilling effect on investment in automated systems. If developers doubt whether creations generated through machine learning qualify for copyright protection, what is the incentive to invest in such systems?²⁹

Without established copyright protection, there is no incentive for AI developers to continue creating and improving their capabilities.³⁰ If artificial intelligence is unable to have the rights to their work as it stands now, this would dissuade programmers from further developing completely independent AI.

²⁵ Guadamuz, *supra*, note 8.

²⁶ Russ Pearlman, *Recognizing Artificial Intelligence (AI) as Authors and Inventors Under U.S. Intellectual Property Law*, 24 RICH. J.L. & TECH. 2, 16, 24 (2018).

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.*

³⁰ Hristov, *supra*, note 18.

The goal of copyright is to incentivize creation by rewarding creators with monopolies.

Artificial intelligence is no exception to this goal:

The very idea of offering a temporary monopoly over new works in order to promote innovation and creativity is enshrined in the U.S. Constitution. As a result, American society has been able to sustain its creative and innovative spirit for over two centuries. Financial incentives should, therefore, be reserved for the greatest contributors to the development and dissemination of AI.³¹

Artificial intelligence should be protected under copyright law to encourage programmers and companies that invest in AI to keep creating and innovating AI technology. It is clear that artificial intelligence has become increasingly more capable of creating work independent of human interaction. However, in order to fulfill its purpose, copyright law has to adapt to include artificial intelligence as a whole.³²

The growing concern is that by not protecting AI-generated works, it could ultimately limit innovation because the companies which create the program will not reap the financial benefit encouraged by copyright protection.³³ This could result in “not only in the decline of AI but also in the decline of innovation across a number of related sectors.”³⁴ By witnessing artificial intelligence not getting copyright protection, other technological developers may be hesitant to continue innovating because they are fearful that their works would not be protected. This particular issue emphasizes the need to address artificial intelligence regarding copyright law.

³¹ Id.

³² Id.

³³ Id.

³⁴ Id.

III. CURRENT STATE OF AI IN COPYRIGHT LAW

This is not to say that artificial intelligence as a whole, is not considered under U.S copyright law. Currently, human input is the main consideration regarding artificial intelligence.³⁵ As copyright currently stands, the artificial intelligence program itself is copyrightable because it was developed from the mind of a human; the programmer.³⁶ These algorithms are essentially treated as software under existing copyright law as a literary work.³⁷ Thus, the computer programs developed by human input may currently be copyrighted as a literary work.³⁸

However, the resulting creative works generated by these programs are not copyrightable if they are not directly influenced by a human being.³⁹ While the program itself is copyrightable, the artificial intelligence that made independent decisions to develop a creative work is not protected. Thus, independently created works generated solely by artificial intelligence is not copyrightable because it cannot satisfy the human author requirement.⁴⁰

The United States Copyright Office currently states that they will not register works “produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author.”⁴¹ However, there is a need for change in current U.S. copyright law to incorporate artificial intelligence:

³⁵ Guadamuz, *supra*, note 8.

³⁶ Hristov, *supra*, note 18.

³⁷ Anastasiya Kiseleva, *What is artificial intelligence and why does it matter for Copyright*, 4IP COUNSEL (Jan. 2019).

³⁸ Hristov, *supra*, note 18.

³⁹ *Id.*

⁴⁰ Strong, *supra*, note 16.

⁴¹ *Id.*

The U.S. Copyright Act has gone through a number of revisions over the years. Each new addition to the U.S. Copyright Act reflects a fundamental change in the way American society perceives the creative process and the tools deemed necessary to reinforce it. No changes, however, have been exercised to reflect the most recent technological phenomenon of machine learning, commonly referred to as artificial intelligence.⁴²

Most jurisdictions, including Spain and Germany, only recognize works created by a human as copyrightable.⁴³ Other countries, such as the Hong Kong, Ireland, New Zealand, and the United Kingdom give authorship to the programmer.⁴⁴ However, India was the first country to recognize an artificial intelligence program as a co-author of copyrighted artwork.⁴⁵

Artificial intelligence can be protected to the extent of human involvement in programming the algorithms, however, it is important that the independently generated creative work is protected separately from human authors. In the eyes of the law, “a stick-man sketch by a human hand has more worth in the eyes of copyright law than the product of the Next Rembrandt.”⁴⁶ If this is the case, the question becomes why should artificial intelligence developers continue to innovate when the human sketch receives more protection than their work.

IV. ARTIFICIAL INTELLIGENCE AND THE WORK MADE FOR HIRE DOCTRINE

Artificial intelligence should first be addressed by expanding already established copyright schemes such as “works made for hire.”⁴⁷ The Copyright Act of 1976 currently states A “work made for hire” is:

⁴² Hristov, *supra*, note 18.

⁴³ Guadamuz, *supra*, note 8.

⁴⁴ *Id.*

⁴⁵ LEXCAMPUS, *India Recognizes AI as Author of a Copyrighted Work* (Aug. 11, 2021), <https://www.lexcampus.in/india-recognises-ai-as-author-of-a-copyrighted-work>.

⁴⁶ Daryl Lim, *AI & IP Innovation & Creativity in an Age of Accelerated Change*, 52 AKRON L. REV. 813, 839 (2018).

⁴⁷ 17 U.S.C. § 101 (2018).

1) a work prepared by an employee within the scope of his or her employment; or (2) a work specially ordered or commissioned...if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire.⁴⁸

The work made for hire structure is an exception to the general rule about the creator being an author of the work.⁴⁹

The author of a work made for hire is the employer or party that ordered or commissioned the work.⁵⁰ The legal author of a work made for hire is the employer and is not limited to an individual.⁵¹ The author could be a corporation or other entity as well.⁵² For instance, a newspaper publisher may own the copyright to its journalist's articles, as employees through the work made for hire doctrine. Thus, the publisher as a company would be the author of the work and not the individual employee.

It is important to emphasize that corporations are recognized as non-human entities that can acquire copyright protection as authors of works. Artificial intelligence is also a non-human entity that can create and think much like corporations and should be recognized for purposes of copyright law.

A. *Artificial Intelligence and Corporations as Person*

William Blackstone, in his *Commentaries on the Laws of England*, defined corporations as “artificial persons, who may maintain a perpetual succession, and enjoy a kind of legal

⁴⁸ Id.

⁴⁹ U.S. Copyright Office, *supra*, note 3.

⁵⁰ Id.

⁵¹ Id.

⁵² Id.

immortality.”⁵³ He then went on to write that corporations were created by law for the advancement of religion, learning, and commerce for the public.⁵⁴ American jurisprudence granted corporates “personhood,” which entitles them to certain rights as artificial persons.⁵⁵ For instance, the Equal Protection Clause, Due Process Clause, and other constitutional rights extend to all persons, including corporations.⁵⁶ Corporations can also hold property, including intellectual property as described above.⁵⁷

In many instances, artificial intelligence is like corporations. When only looking at Blackstone’s original definition, artificial intelligence would meet the criteria of an artificial person. Like corporations, artificial intelligence cannot die and would thus have the same “legal immortality” as a corporation. More importantly, artificial intelligence, capable of producing creative works, serve as an advantage to the public in terms of both learning and commerce. Whether the artificial intelligence produced a novel or piece of art, the academic and commercial value should be recognized in determining AI as artificial persons.

Looking more broadly, corporations are also viewed as persons because they are capable of decision making.⁵⁸ Likewise, artificial intelligence should be considered an artificial person for this similar ability. As previously discussed, artificial intelligence has been designed to generate

⁵³ Christopher J. Wolfe, *An Artificial Being; John Marshall and Corporate Personhood*, 40 HARV. J. L. & PUB. POL’Y 201, 210 (2017) (citing 1 WILLIAM BLACKSTONE, COMMENTARIES 467) (Also noting that “...unlike a natural person, a corporate person must be defended by an attorney.”).

⁵⁴ *Id.*

⁵⁵ Lawrence Solum, *Legal Personhood for Artificial Intelligences*, 70 N.C.L. REV. 1231, 1257 (1992).

⁵⁶ *Id.* at 1259.

⁵⁷ *Id.* at 1254.

⁵⁸ Jonnie Penn, *AI thinks like a corporation—and that’s worrying*, THE ECONOMIST (Nov. 26, 2018), <https://www.economist.com/open-future/2018/11/26/ai-thinks-like-a-corporation-and-thats-worrying>.

independently from human interaction using neural networks to attempt to replicate human thought processes.⁵⁹ Artificial intelligence comes closest to mimicking human thought such that AI mimics “the problem-solving and decision-making capabilities of the human mind.”⁶⁰ Corporations and artificial intelligence are similar in their decision-making ability such that they use a hierarchy or pre-set mendable rules to process large amounts of information.”⁶¹ Thus, corporations and artificial intelligence are both forms of artificial thinking machines “designed to be capable of taking decisions for themselves.”⁶²

However, as one legal scholar argues, it is currently possible to grant artificial intelligence personhood using established corporation structures.⁶³ Shawn Bayern has suggested that putting a computer system in control of a limited liability corporation (“LLC”) could grant artificial intelligence legal personhood to own property.⁶⁴ Yampolskiy describes this as the corporate loophole.⁶⁵

[The corporate loophole] starts with one person setting up two limited liability companies and turning over control of each company to a separate autonomous or artificially intelligent system. Then the person would add each company as a member of the other LL In the last step, the person would withdraw from both LLCs, leaving each LLC – a corporate entity with legal personhood – governed only by the other’s AI system.⁶⁶

⁵⁹ Li, *supra*, note 6.

⁶⁰ *What is Artificial Intelligence (AI)?*, IBM, <https://www.ibm.com/topics/artificial-intelligence> (last visited December 11, 2021)

⁶¹ Penn, *supra*, note 58.

⁶² *Id.*

⁶³ Roman V. Yampolskiy, *Could an artificial intelligence be considered a person under the law?*, THE CONVERSATION (Oct. 5, 2018), <https://theconversation.com/could-an-artificial-intelligence-be-considered-a-person-under-the-law-102865>.

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.*

While the effort necessary for this process may be less than ideal, the idea that artificial intelligence could already have an established channel to legal personhood through an LLC corporate structure should encourage lawmakers to address personhood for artificial intelligence sooner rather than later.

Although corporations and artificial intelligence are similar, it is also important to note how they differ. Corporations have corporate structures where humans sit as directors that can make decisions for the whole. Although artificial intelligence lacks these traditional features, one could argue that the individual programmer serves as the director and the artificial intelligence serves as the Chief Executive Officer (CEO). In a corporation, directors are typically responsible for the day-to-day decision-making and overseeing the business, which in the case of programmers is setting the parameters and gathering the data for the program. The CEO is responsible for the ultimate decision-making, which the AI itself makes by determining characteristics and creating the resulting work. While artificial intelligence and corporations differ in regards to a traditional corporate structure, in essence, AI has a human director much like a corporation and the hierarchy allows for the same decision-making capabilities as a corporation.

Some may argue that personhood for artificial intelligence would lead down a slippery slope that would allow other non-human entities, like animals, to gain rights.⁶⁷ However, as previously mentioned, artificial intelligence has come the closest to replicating human thought that other

⁶⁷ JOSHUA C. GELLERS, RIGHTS FOR ROBOTS: ARTIFICIAL INTELLIGENCE, ANIMAL AND ENVIRONMENTAL LAW 62, (1st ed, 2021) (Invoking philosophical arguments for providing animals with substantial rights to argue the same for “robots.”).

non-human entities will probably never achieve. For instance, in 2017 Saudi Arabia became the first country to grant legal citizenship to an android operated by an advanced artificial intelligence system.⁶⁸ However, even after Saudi Arabia granted the AI-robot citizenship, others were still hesitant.⁶⁹ This citizenship brought to attention many controversial issues regarding voting, religion, and women's rights in Saudi Arabia which have yet to be addressed in regards to the AI-robot.⁷⁰ The European Commission was addressed by 150 experts that claimed that this step in granting citizenship was "inappropriate" and "ideological, nonsensical and non-pragmatic" and argued that this step would "directly impinge on human rights."⁷¹

As previously discussed, corporations and artificial intelligence have a lot in common, but it is the way they make decisions that would qualify them both as legal persons. Artificial intelligence and corporations are both able to process data according to specific rules that are similar to human processes. It is this decision-making ability that allows for artificial personhood. Copyright law could incorporate artificial intelligence as a legal person much like corporations under the work made for hire doctrine. Legal personhood would grant artificial intelligence the right to hold property including copyright.⁷² Making artificial intelligence legal persons would allow AI to be authors and owners of copyrights, thus incentivizing innovation of artificial intelligence. However, some may argue that granting legal personhood to artificial

⁶⁸ Emily Reynolds, *The Agony of Sophia, the World's First Robot Citizen Condemned to a Lifeless Career in Marketing*, WIRED (Jan. 6, 2018, 7:00 a.m.), <https://www.wired.co.uk/article/sophia-robot-citizen-womens-rights-detriot-become-human-hanson-robotics>.

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² Penn, *supra*, note 58.

intelligence opens the door to other nonhuman entities to gain rights and would thus infringe upon natural persons rights.⁷³ However, artificial intelligence is similar to the human thought process and similar to corporations in regards to decision making and corporate structure to be considered an author as a non-human entity. Copyright law could view artificial intelligence as a legal person much like corporations.

B. AI as Non-Human Entity Authors Similar to Works Made for Hire

Legal personhood would allow artificial intelligence the right to hold property, and, like corporations, the right to own a copyright under the work made for hire doctrine. However, the work made for hire doctrine would be limited to creative works made in the course of employment.⁷⁴ The work made for hire structure allows corporations as non-human entities to be an author of a creative work. As mentioned, the author of a work made for hire is the employer.⁷⁵ Employers here could be a corporation, organization, or other legal entity.⁷⁶ This is further supported by the term of protection for a work made for hire, which is either 95 years from the date of publication or 120 years from the date of creation.⁷⁷ Since corporations can never “die” like a human and copyright has a constitutional durational limitation, works made for hire are not measured by the general duration of the author’s life plus 70 years.⁷⁸

As stated previously, under the work made for hire doctrine artificial intelligence could not consent and “expressly agree in a written instrument signed by them” that is required for a

⁷³ Gellers, *supra*, note 67.

⁷⁴ Hristov, *supra*, note 18.

⁷⁵ United States Copyright Office, *supra*, note 3.

⁷⁶ *Id.*

⁷⁷ 17 U.S.C. § 302(c) (2018).

⁷⁸ 17 U.S.C. § 302(a) (2018).

work made for hire.⁷⁹ Although the work made for hire doctrine is limited to the employment relationship, some may argue that programmers of artificial intelligence should be recategorized as employers under works made for hire. For instance, reworking the employment relationship would solve the issue of AI-generated works falling into the public domain.⁸⁰ Here, the work made for hire doctrine would allow the programmer to be the author for the purpose of the title.⁸¹

However, the work made for hire doctrine shows that U.S. copyright law does allow non-human entities, like corporations, to be “authors” of creative works.⁸² It is important to consider artificial intelligence as the author.⁸³ Artificial intelligence using “deep-learning, neural networks, and other approaches that do not dictate the purely mechanical creation of works should be considered a potential author separate and apart from their human operator. The focus of IP law should be to recognize the contributions of the creator.”⁸⁴ By only granting ownership rights when artificial intelligence achieves the capabilities of a natural person, it is “completely ignoring analogous legal personhood as is found in corporations and government entities.”⁸⁵

Instead of interpreting the employment requirements of the works made for hire doctrine to include artificial intelligence, the current law should broaden the scope of the human author requirement to include artificial intelligence generally. Using work made for hire as a framework that limits the term of copyright for non-human entities and expanding authors of creative work

⁷⁹ 17 U.S.C. § 101 (2018).

⁸⁰ Hristov, *supra*, note 18.

⁸¹ *Id.*

⁸² United States Copyright Office, *supra*, note 3.

⁸³ Ryan Abbott, *I Think, Therefore I Invent: Creative Computers and the Future of Patent Law*, 57 B.C. L. REV. 1079, 1083–85 (2016).

⁸⁴ Pearlman, *supra*, note 26.

⁸⁵ *Id.*

to include artificial intelligence would allow for protection for AI independently generated creative works. This would allow the U.S. Copyright Office to adapt current law to include artificial intelligence rather than introducing new legislation.

V. A COMPROMISE: AI AS A JOINT AUTHOR UNDER JOINT WORK DOCTRINE

While the idea of complete integration of artificial intelligence as an author of creative works throughout current copyright law may be too forward-thinking, a more practical approach can be addressed as a compromise between those that do not wish to stray from the human interaction requirement and those that wish to see artificial intelligence as authors. In the Copyright Act of 1976, a “joint work” is defined 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.”⁸⁶ For example, if a composer and lyricist produced a song together and they intended for their works to be combined then, it is a joint work.⁸⁷ While the current statute provides a simple definition, a person has to prove they had:

knowledge and intention that it would be merged with the contributions of other authors as ‘inseparable or interdependent parts of a unitary whole.’ The touchstone here is the intention, at the time the writing is done, that the parts be absorbed or combined into an integrated unit.⁸⁸

Case law has gone on further to “oblige all joint authors to make copyrightable contributions, leaving those with non-copyrightable contributions to protect their rights through contract.”⁸⁹

While the contributions made by joint authors do not need to be equal in quality or quantity, the

⁸⁶ 17 U.S.C. § 101 (2018).

⁸⁷ *Edward B. Marks Music Corp. v. Jerry Vogel Music Co.*, 47 F. Supp. 490, 490 (S.D.N.Y. 1942).

⁸⁸ *Childress v. Taylor*, 945 F.2d 500, 505 (2d Cir. 1991).

⁸⁹ *Id.*, at 507.

expression must meet the copyright requirements of independent creation and the modicum of creativity.⁹⁰

While the current state of the law only grants copyrights to humans, the need to address artificial intelligence is still prevalent. The U.S. copyright office has recently addressed the World Intellectual Property Organization in 2020 stating, “in light of the more recent interest in and development of AI, the Copyright Office believes that now is the time to analyze the intersection of copyright and AI more deeply.”⁹¹ The U.S. Copyright Office also emphasized, that as AI and technology evolves, it is important to encourage countries to establish and explore their perspectives on artificial intelligence as authors of copyrights.⁹² Joint authorship might be the answer to practical next steps in analyzing the intersection of copyright and artificial intelligence.

Under the definition of joint works, it would allow both the human programmer and the artificial intelligence to be joint authors. This approach would then satisfy those who believe in requiring human authors but also would be an important step in addressing artificial intelligence concerning copyright law. However, like the work made for hire doctrine’s limitation to an employment relationship, joint works requires knowledge and intention of merging contributions into a unitary whole.⁹³

⁹⁰ 4 Melville B. Nimmer & David Nimmer, *Nimmer on Copyright* § 12B.02 (rev. ed. 2018). *See also* Feist Publ'ns, Inc. v. Rural Tel. Serv. Co. , 499 U.S. 340, 346 (1991).

⁹¹ Strong, *supra*, note 16.

⁹² *Id.*

⁹³ Childress, 945 F.2d at 505.

Artificial intelligence could be considered joint author because it can create independent copyrightable subject matter that's contributions be merged into an inseparable unitary whole."⁹⁴ Programmers would be able to create the already copyrightable algorithms that lay out the parameters of the artificial intelligence with the intent that their works, such as the data used to program the machine, would combine with the AI independently created work into one work of authorship.⁹⁵ This would then allow both the human programmer and the artificial intelligence to have the exclusive rights granted to copyright owners.⁹⁶

Essentially, if artificial intelligence would be named an author a joint work, the rights to the copyright would then be immediately assigned to the programmer of the artificial intelligence.⁹⁷ This assignment would allow for the rights to be vested in a human being while also recognizing the artificial intelligence as an author.⁹⁸ This would allow for a compromise of addressing the necessary prevalence of artificial intelligence while also satisfying the human requirement. This is not to say that this would be the end to addressing artificial intelligence relating to copyright, however, it is a necessary start.

⁹⁴ 17 U.S.C. § 102 (2018). Copyrightable subject matter includes works of authorship in the following categories: (1) literary works;(2) musical works; (3) dramatic works; (4) pantomimes and choreographic works; (5) pictorial, graphic, and sculptural works; (6) motion pictures and other audiovisual works; (7) sound recordings; and (8) architectural works.

⁹⁵ Kiseleva, *supra*, note 37.

⁹⁶ 17 U.S.C. § 106 (2018). Exclusive rights granted to copyright holders include: (1) to reproduce the copyrighted work in copies or phonorecords; (2) to prepare derivative works based upon the copyrighted work; (3) to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending; (4) to perform the copyrighted work publicly; (5) to display the copyrighted work publicly; and (6) to perform the copyrighted work publicly by means of a digital audio transmission.

⁹⁷ Pearlman, *supra*, note 26.

⁹⁸ Pearlman, *supra*, note 26.

However, while artificial intelligence may be able to “know” what they are expected to create, the issue with joint authorships is whether artificial intelligence may be able to intend to create and combine their work.⁹⁹ It is easy for the human programmer to intend to create an algorithm with the end result being to combine this work into one unified work.¹⁰⁰ However, as artificial intelligence currently stands, there may be no way for AI to have the requisite intention. Under the current joint authorship “[artificial intelligence] could only theoretically be one of the parties of a joint authorship, but more so in the future.”¹⁰¹ The intention requirement may prohibit artificial intelligence to be recognized as an author under the doctrine of the joint work. However, the United States Copyright Office should still recognize this doctrine as applied to artificial intelligence because it would be the practical approach, by allowing both human and artificial intelligence to be joint authors, in addressing the ever-expanding creative developments of artificial intelligence. Additionally, the United States should recognize artificial intelligence under the joint work doctrine since another country has successfully used this approach in addressing their AI concerns.¹⁰²

As previously mentioned, India has recognized AI under the joint work doctrine successfully.¹⁰³ In 2020, RAGHAV an Artificial Intelligence Painting App created a painting

⁹⁹ Miika Kekola, *AI, Author and Copyright*, 2020, https://lauda.ulapland.fi/bitstream/handle/10024/64342/Kekola_Miika.pdf?sequence=1&isAllowed=y

¹⁰⁰ Id.

¹⁰¹ LexCampus, *supra*, note 24.

¹⁰² Sukanya Sarkar, *Exclusive: India recognises AI as co-author of copyrighted artwork*, MANAGING IP, Aug. 2021, <https://www.managingip.com/article/b1t0hfvz2bytx44/exclusive-india-recognises-ai-as-co-author-of-copyrighted-artwork>

¹⁰³ Id.

entitled “Suryast.”¹⁰⁴ The owner of the app, Ankit Sahni then filed two copyright applications for the AI-generated artwork.¹⁰⁵ The Copyright Office of India rejected the first application, which solely listed RAGHAV as the author.¹⁰⁶ However, Sahni was successful on the second application that listed himself and RAGHAV as co-authors and was granted registration.¹⁰⁷ Emphasizing the importance of recognizing artificial intelligence Sahni stated, “rendering protection to creations by AI will go a long way in recognizing and protecting the interests of those who develop such AI applications, and will ensure that they are appropriately incentivized.”¹⁰⁸

However, some may also argue that the duration of an artificial intelligence joint work would essentially be unconstitutional due to the required time restriction. The current statutory duration states, “a joint work prepared by two or more authors who did not work for hire, the copyright endures for a term consisting of the life of the last surviving author and 70 years after such last surviving author’s death.”¹⁰⁹ However, by adopting the term as defined under work made for hire, which considers non-human entities that cannot “die”, amending the joint work doctrine to include similar duration would limit the term from the date of creation or publication not based on a “life.”¹¹⁰

¹⁰⁴ Id.

¹⁰⁵ Id.

¹⁰⁶ Id.

¹⁰⁷ Id.

¹⁰⁸ Id.

¹⁰⁹ 17 U.S.C. § 302(b) (2018).

¹¹⁰ Sarkar, *supra*, note 102.

Artificial intelligence is an ever-evolving technology that should be addressed in terms of copyright law. By using an already established doctrine, such as joint works, the United States can mold an already established doctrine to adapt, rather than create new law. This doctrine would encourage the United States' first steps at including artificial intelligence in the copyright regime. Like the U.S. Copyright Office, Sanhi emphasized, "while the existing legislation has its own set of limitations, the act of granting recognition to an AI program as co-author of an artistic work marks the beginning of an era of change that governments across the world will be working on."¹¹¹

VI. CONCLUSION

It is clear that the way artificial intelligence is being applied today to music, art, literary works, and other copyrightable subject matter, that artificial intelligence can meet both the independent creation and modicum of creativity the originality requirements of copyright law. That being said, it is important to address how artificial intelligence can be protected under current law to fulfill the purpose of intellectual property.

This paper has suggested three ways the United States could pursue the easier option of adapting established copyright doctrines rather than creating new regulations. First, as compared under the work made for hire doctrine, copyright law could view artificial intelligence as a legal person much like corporations. They both are capable of making decisions that are most like human decision-making processes that qualify them both as legal persons.¹¹² Making artificial

¹¹¹ Hristov, *supra*, note 18.

¹¹² Penn, *supra*, note 58.

intelligence legal persons would allow them then to be authors and owners of copyrights, thus incentivizing the innovation of artificial intelligence.

Next, this paper suggests that the U.S. Copyright Office should introduce artificial intelligence using the structure of the work made for hire doctrine. Corporations are able to be authors of copyrights, through the employment law relationship, as non-human entities.¹¹³ The fact that corporations, as non-human entities, are able to hold the exclusive right granted to copyright authors under the works made for hire structure may be adaptable to establish artificial intelligence as a non-human entity author. For example, the use of the work made for hire term language may be easily applicable to artificial intelligence because it has already been recognized that corporations do not “die” so the duration cannot be based on the life of an author. While some may argue that the work made for hire doctrine is limited to employment law, the joint work doctrine is not limited in this way.

The better approach would be to include artificial intelligence as a joint author under the joint work doctrine of U.S. copyright law. The joint work doctrine would recognize both the human programmers and the artificial intelligence as joint authors granting both the ability to hold the copyright and gain the exclusive rights to that copyright. This would be the best compromise between those that are adamant about the human author requirement and those that believe that artificial intelligence must be addressed in copyright law. It is clear from what I have discussed earlier that the U.S. copyright law is currently in fluctuation in considering artificial intelligence.

¹¹³ 17 U.S.C. § 101 (2018).

This paper has addressed the best way for the United States To begin to enter the so many questions we have about the ever-changing fast-paced evolution of artificial intelligence. However, there is one issue with the way the current statutory language defines joint authors. Both case law and the Copyright Act of 1976 requires that authors of a joint work “intend” for their work to be combined into one unitary work.¹¹⁴ Some have argued that artificial intelligence has not reached the level of intention and therefore cannot intend anything. However, this paper has argued that the joint work doctrine can be adaptable for artificial intelligence. Adopting the joint work doctrine for artificial intelligence, regardless of whether it meets the intention requirement, would then avoid having to create new regulations thus saving time and difficulty that it would take to introduce new legislation and get it passed. With artificial intelligence growing rapidly, by the time legislation was passed to address copyright law and artificial intelligence, newer artificial intelligence innovations would lead to more issues that would have also have to be addressed.

¹¹⁴ Kekola, *supra*, note 99.