KERNOCHAN CENTER
FOR LAW, MEDIA AND THE ARTS

January 10, 2020

The Honorable Andrei Iancu
Under Secretary of Commerce for Intellectual Property &
Director of the United States Patent and Trademark Office
US Patent and Trademark Office
600 Dulany Street, Suite 10D44
Alexandria, VA 22314

Via email to: AIPartnership@uspto.gov

**Re: Comments in Response to *Request for Comments on Intellectual Property Protection for Artificial Intelligence Innovation*, 84 Fed. Reg. 58,141 (Oct. 30, 2019).**

Dear Director Iancu,

The Kernochan Center for Law, Media and the Arts appreciates the opportunity to respond to the Request for Comments on Intellectual Property Protection for Artificial Intelligence Innovation, published by the Patent and Trademark Office, 84 Fed. Reg. 58,141 (Oct. 30, 2019).

The Kernochan Center for Law, Media, and the Arts at Columbia Law School is one of the leading centers for intellectual property research in the United States. Its faculty and staff dedicate their research and writing to copyright, trademarks, and related areas as they concern traditional and emerging media, entertainment and the arts. The Center offers students an in-depth program of instruction, lectures, internships and externships while providing symposia, lectures, research studies and publications to the broader legal community. Founded as the Center for Law and the Arts, it was renamed in 1999 to honor Professor John M. Kernochan, its founder and a pioneer in teaching copyright in American law schools.

These Comments will focus only on those questions concerning copyright law. We caution that the Request for Comments uses terms like "process," which is specifically excluded from copyright protection under 17 U.S.C. § 102 (b), and "algorithm," which is not specifically mentioned among the § 102 (b) exclusions but would likely fall within

their ambit. For purposes of copyright analysis, we assume that an algorithm or process will not stand alone, and may be effectuated by a copyright-protected computer program.

The numbers below correspond to the question numbers in the Request for Comments cited above.

We begin with two general comments. First, there is currently no artificial intelligence (AI) which is wholly devoid of any human expression, whether it be programming the code which sets the parameters of the system's output or using human interaction to generate new material (such as musical programs that ask the user to begin a composition before finishing it with responsive AI). As Jane Ginsburg and Luke Budiardjo note, "[T]oday's machines are fundamentally sets of processes designed by humans to accomplish specific tasks."[1] Second, copyright must vest in a person, whether a human person or a legal person, such as a corporation.[2] Thus, the discussion is not whether computers may be copyright holders, but what individual or legal entity might be granted copyright in a work generated by AI.

1. Should a work produced by an AI algorithm or process, without the involvement of a natural person contributing expression to the resulting work, qualify as a work of authorship protectable under U.S. copyright law? Why or why not?

In its simplest form, a work produced without any expression contributed by a natural person does not qualify for copyright protection under U.S. copyright law. The Copyright Act states "copyright subsists in original works of authorship fixed in a[] tangible medium of expression." 17 U.S.C. § 102. The Copyright Act does not define authorship, but over the years, courts have developed its contours. In *Burrow-Giles Lithographic Co. v. Sarony*, the Supreme Court defined an author as someone "to whom anything owes its origin; originator; maker."[3] At the time (1884), the Court would have assumed that the "originator" was a human. The United States Copyright Office (USCO) made this assumption explicit in its 2017 Compendium 3d Ed.[4] Section 306 of the Compendium reads, "The U.S. Copyright Office will register an original work of authorship, provided that the work was created by a human being." Authorship has two

[1] Jane C. Ginsburg and Luke A. Budiardjo, *Authors and Machines,* 34 BERKELEY TECH. L. J. 343, 401 (2019).
[2] *See* Annemarie Bridy, *Coding Creativity: Copyright and the Artificially Intelligent Author*, 2012 STAN. TECH. L. REV. 5, 51 (2012).
[3] 111 U.S. 53, 56 (1884).
[4] U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES (3d ed. 2017), available at https://www.copyright.gov/comp3/ *See also* Naruto v. Slater, 888 F.3d 418, 426 (9th Cir. 2018) (holding that "animals other than humans . . . lack statutory standing to sue under the Copyright Act").

components: conception and execution.[5] Since there are currently no machines capable of fulfilling both of these tasks, we see no reason, at this point, to articulate a standard for protecting computer outputs with no discernible human authorship.

2. Assuming involvement by a natural person is or should be required, what kind of involvement would or should be sufficient so that the work qualifies for copyright protection? For example, should it be sufficient if a person (i) designed the AI algorithm or process that created the work; (ii) contributed to the design of the algorithm or process; (c) chose used by the algorithm for training or otherwise; (iv) causing the AI algorithm or process to be used to yield the work; or (v) engaged in some specific combination of the foregoing activities? Are there other contributions a person could make in a potentially copyrightable AI-generated in order to be considered an author?

We preface our answer with the following assumptions: (1) Human involvement is a necessary but not always sufficient condition. We explore below what kind of involvement would suffice. (2) We address the machine-aided output, not the upstream computer programs and/or databases, which may already enjoy copyright as a literary work and/or as a compilation.[6] Whether a person who designs the algorithm and does nothing more can hold the copyright in the machine's output depends on the guidelines that structure the device. If the device is set up so that the ultimate product is created by choices almost entirely in control of the user (an analog parallel might be LEGO® blocks), then it is the user who should hold the copyright in the output. If a natural person designs an algorithm that provides a general framework for the output, but the algorithm allows the user to mold the output based on personal choices, the authorship of the resulting work might be joint, if the output meets the requirements set out in the Act's definition of "joint work."[7] This would have to be decided on a case-by-case analysis.

If the upstream creators significantly constrain the user's choices, the user may not be an "author," but neither is it certain that the algorithm designers and data trainers will have contributed sufficiently to the conceptualization of particular outputs to enjoy authorship attribution. In some instances the upstream creators may have conceptualized and executed the outputs in a way that qualifies them as sole authors, despite the limited participation of the user.[8] In other instances, neither the downstream user nor the upstream creators will qualify. For example, the user of an automated translation

[5] Ginsburg and Budiardjo at 401.

[6] Computer programs (defined in 17 U.S.C.§101 as "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result") are eligible for copyright under 17 U.S.C. §102; the works may be works-made-for-hire as defined in 17 U.S.C. §101 in which case the copyright is held by the employer or other commissioning party under 17 U.S.C. §201(b).

[7] 17 U.S.C. §101. 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.

[8] Ginsburg & Budiardjo at 422 (citing the musical composition program JukeDeck).

program does no more than input the text to be translated, which would not make the user an "author." But because the designers of the translation program cannot anticipate what texts the program will translate, their contribution also falls short. They are no more the "authors" of the output than the creators of a word processing program are the "authors" of works created by users of that program. These kinds of outputs are "authorless," and accordingly cannot claim copyright.[9] Other regimes, however, may afford some protection to these authorless outputs.[10]

3. To the extent an AI algorithm or process learns its function(s) by ingesting large volumes of copyrighted material, does the existing statutory language (e.g., the fair use doctrine) and related case law adequately address the legality of making such use? Should authors be recognized for this type of use of their works? If so, how?

Ingesting copyrighted material involves making copies of it. Under the Copyright Act, making full copies will be an infringement if no copyright exception or limitation applies. A number of cases have found full-text copying to be fair use. For example, in *Sega v. Accolade,* a gaming company reverse-engineered computer games in order to learn how to create games which would interact with Sega's gaming system.[11] The defendant copied the games to identify the code needed to run program's on Sega's system. Ultimately defendant incorporated only a very minimal piece of code into its final product, just enough to allow Accolade's independently produced games to interoperate with the Sega system. Moreover, defendant did not permanently store the Sega games; rather it made intermediate, temporary copies.

*Authors Guild v. Google* involved copying millions of works for Google's book search database.[12] Google retains these copies to use in connection with its Book Search feature and in developing new projects. The court ruled in Google's favor on its fair use defense, despite the volume of materials that it copied and retained. The court deemed the copying "transformative" because it enabled a useful search mechanism that provided non infringing information about books potentially valuable to a researcher. At the same time, the court was persuaded that the Google Book Search would not supplant the market for the actual books, because Google limited the Book Search's outputs to non-infringing information and to non-substitutional snippets. Moreover, Google's security measures prevented reconstruction of substantial portions of the text through multiple searches.

[9] Id. at 440
[10] Id. at 455-6.
[11] 977 F.2d 1510 (9th Cir. 1992).
[12] 804 F.3d 202 (2d Cir. 2015).

Any perception that the *Google* case provides carte blanche for copying entire works into databases misapprehends the limits of that decision. Moreover, the law is still developing and not all services that copy works into databases qualify for fair use. For example, it seems from the *Google* case and from the subsequently-decided *Fox News v. TV Eyes* case[13] that the courts are far more concerned with the output (how much of a copied work is made available to users), than it is about works that remain in a database to facilitate searches. *Fox News* differed from the *Google* case because in response to users' searches, TVEyes copied and delivered up to ten minutes of the news programs (many of which did not exceed or even approach ten minutes' duration). Unlike its ruling in *Google*, the Second Circuit held TVEyes' copying not to be fair use.

Another factor that bears on potential liability for those who mass copy to populate databases is the security that the database operator provides to the works. In rejecting right holders' argument that their books were at risk of unauthorized access, the Google Books court stressed the robustness of Google's security measures. By contrast, porous security measures could weigh against fair use. As the *Google* court acknowledged: "Even if the purpose of the copying is for a valuably transformative purpose, such copying might nonetheless harm the value of the copyrighted original if done in a manner that results in widespread revelation of sufficiently significant portions of the original as to make available a significantly competing substitute."[14]

Finally, the laws on mass digitization vary among countries. The discussion above pertains only to copying in the United States.

4. Are current laws for assigning liability for copyright infringement adequate to address a situation in which an AI process creates a work that infringes a copyrighted work?

The question suggests two queries: 1. Does current doctrine on what constitutes infringing acts adequately respond to AI-generated infringement? 2. Who should be liable: the user of the process or the designer of the process (or both)? As to the first question, some courts, notably the Second Circuit, have ruled that "volition" is a prerequisite to infringement.[15] A volition predicate may pose a risk that unauthorized copying or generation of derivative works through an automated process will not give rise to liability because the acts will have been committed by a machine under circumstances in which no human being will have had the requisite knowledge of what works the process will have copied or adapted. With respect to the second question, the

[13] Fox News Network LLC v. TVEyes, Inc., 883 F.3d 169 (2d Cir. 2018).
[14] See generally Jane C. Ginsburg, "Security Failure Fair Use Analysis" (January 25, 2016) https://www.mediainstitute.org/2016/01/25/security-failure-fair-use-analysis/
[15] For a critique of the "volition" criterion, see, e.g., David Nimmer, *Volition in Violation of Copyright*, 43 Colum. J. L. & the Arts 1 (2019).

analysis may be highly fact-dependent. It will be necessary to identify the various actors, and then analyze whether they are committing acts of direct or secondary infringement (volition – if it persists as a criterion – will play a role here as well). In the abstract, however, it is difficult to determine whether current "laws for assigning liability" adequately address the specificities of AI.

5. Should an entity or entities other than a natural person, or company to which a natural person assigns a copyrighted work, be able to own the copyright on the AI work? For example: Should a company who trains the artificial intelligence process that creates the work be able to be an owner?

We are unclear what this question is getting at, but there is nothing in the Act which prohibits a nonhuman legal entity from holding the copyright in a work. The work itself must be created by a human being; if the work lacks a human author, there is no copyright to own. The human being to whom authorship of the AI work is attributed (assuming there is sufficient human authorship upstream, downstream or both) can of course transfer her copyright to a juridical person. And if the human being is an employee who created the work within the scope of her employment, then the work is "for hire," and a juridical person employer can own the copyright *ab initio*.

6. Are there other copyright issues that need to be addressed to promote the goals of copyright law in connection with the use of AI?

Because AI outputs may involve the participation of multiple contributors, it may be desirable to clarify copyright law rules concerning joint authorship. There is some disarray in the courts regarding the nature of the contribution that can make one a co-author, as well as uncertainty concerning the timing of the contributions. A traditional joint work results from real-time collaboration. But the Act may also permit a-synchronous joint works. The Act and its legislative history require that each contributor intend, at the time of creating the contribution, that the contributions be merged into a whole. But the Act does not clearly exclude the possibility of a joint work when, for example, a composer writes music, intending that some unknown person in the future supply lyrics, and a lyricist later comes along and adds the words, intending to merge them with the music. This scenario is not fanciful in the context of AI outputs; the process may give rise to multiple a-synchronous contributions intended to assemble a complete work. But the regime of joint ownership (equal undivided shares of the work; separate non exclusive exploitation of the whole or of any part without the accord of the other co-authors; duty to account) may be a poor "fit" for AI outputs. It may be appropriate therefore both to resolve current ambiguities regarding the characterization of a work as "joint," and to assess whether adjustments in the regime of joint ownership may be required.

We also recommend that the USPTO consult with the USCO in addressing any reform in this area.

12. Are there any other AI-related issues pertinent to intellectual property rights (other than those related to patent rights) that the USPTO should examine?

We cannot think of any at this time.

13. Are there any relevant policies or practices from intellectual property agencies or legal systems in other countries that may help inform USPTO's policies and practices regarding intellectual property rights (other than those related to patent rights)?

We recommend the USPTO review EU Directive 2019/790 which addresses the role of copyright in new technologies and gives particular attention to the protection of authors' rights with regard to new technologies.[16] We also recommend the EU's REPORT ON LIABILITY FOR ARTIFICIAL INTELLIGENCE which provides a deep analysis of the liability issues of AI.[17] Finally, we recommend a review of the recent World Intellectual Property Organization study on AI.[18]

Thank you again for the opportunity to discuss these timely and important issues.

Sincerely,

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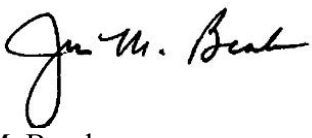

June M. Besek
Executive Director

[16] *Available at* https://eur-lex.europa.eu/eli/dir/2019/790/oj (last visited 1/3/20).
[17] Rep. of The Expert Group on Liability and New Technologies – New Technologies Formation, *Liability for Artificial Intelligence and other emerging digital technologies* (2019).
[18] *Available at. https://www.wipo.int/tech_trends/en/artificial_intelligence/* (last visited 1/3/2019)

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