

Professional Perspective

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AI & Copyright Protection for NFT Generative Art Projects

Contributed by [Stuart Levi](#) and [Lilia Jimenez](#), Skadden, Arps, Slate, Meagher & Flom

The increased attention on artificial intelligence (AI) projects, coupled with recent US Copyright Office statements on the copyrightability of AI-generated works, has caused some to question whether NFT generative art can enjoy copyright protection.

This article explores the copyrightability of generative art and why, in most cases, such art should be protectable.

NFT Generative Art

In the NFT space, “generative art” typically describes digital art where a computer algorithm randomly creates the final works based on a set of human-created specific elements. In almost all cases, these elements include a common foundation character or figure and then different traits or attributes that layer on top of that foundation—e.g., different hats, eyes, expressions, etc.

Typically, given the number of disparate traits and the number of options within each trait, there are often hundreds of millions of possible combinations, but the algorithm will be programmed to generate only a few thousand final works—10,000 is common for an NFT series. For most NFT projects, the common foundation and characteristics are created by a human without any AI-generated component.

Those that question the copyrightability of NFT generative art focus on the fact that a computer, not a human, generates the final work by combining the different elements, and that given the vast array of random possibilities, no human knows what combination of elements will be included in the final works until the algorithm is finished processing. For example, in a counterclaim to a trademark infringement action brought by Yuga Labs, the issuer of the Bored Ape Yacht Clubs NFT project, against the online artist Ryder Ripps, the defendant is seeking a declaratory judgment that Yuga did not own any copyright in its generative art ape images.

According to Ripps, NFTs “generated by an automated computer algorithm where no humans were involved in determining which of the images were selected from more than 1.3 billion possible permutations” are not copyrightable. Yuga has moved to strike the claim, asserting that Ripps’ declaratory judgment is not ripe since Yuga does not have copyright registrations for its work and hence could not bring a claim for copyright infringement at this juncture.

Requirement of Human Authorship

Courts and the US Copyright Office have made clear that only humans can create copyrightable works. One of the first cases to address this came in the early days of photography and concerned whether a photographer could be deemed the author of a work since it was the camera that captured the image. In *Burrow-Giles Lithographic Co. v. Sarony*, [111 U.S. 53, 4 S. Ct. 279, 28 L. Ed. 349](#) (1884), the Supreme Court held that humans were indeed the authors because they were “the person who has superintended the arrangement, who has actually formed the picture by putting the persons in position and arranging the place where people are to be - the man who is the effective cause.” In characterizing an “author,” the court held that it is the person “to whom anything owes its origin; originator; maker; one who completes a work of science or literature” and that photographs are “representatives of original intellectual conceptions of [an] author.”

A century later, cameras were at the center of another case about human authorship. In *Naruto v. Slater*, [888 F.3d 418](#), 126 U.S.P.Q.2d 1464 (9th Cir. 2018), a crested macaque monkey, named Naruto, accessed the camera equipment of nature photographer David Slater, and activated the shutter release, resulting in several selfie photographs. Slater later published the photographs in a book, claiming copyright in the photographs, but fully disclosed the manner in which the photographs were captured. People for the Ethical Treatment of Animals (PETA) filed a copyright infringement claim on behalf of Naruto, asserting that the monkey was the true author and owner of the photographs.

In 2018, the Ninth Circuit dismissed the case for lack of standing, finding that “this monkey— and all animals, since they are not human—lack statutory standing under the Copyright Act.” Following the Ninth Circuit’s decision, the Copyright Office included in its Compendium of Office Practices (Third) (the “Third Compendium”) § 313.2 that “[t]o qualify as a work of ‘authorship’ the work must be created by a human being” and listed “a photograph taken by a monkey” as an example of a work that lacked human authorship and could not be copyrighted.

The advent of works created by AI has required the US Copyright Office on two recent occasions to determine whether such works were copyrightable. In February 2022, the US Copyright Office [rejected](#) an attempt by AI researcher Stephen Thaler to list an AI computer program he had developed as the “author” of a piece of digital art he was trying to register for copyright. In his registration application for “A Recent Entrance to Paradise,” originally filed in 2018, Thaler listed himself as the claimant alongside a transfer statement: “ownership of the machine.”

Thaler explained in his application that the digital work “was autonomously created by a computer algorithm running on a machine” and he was “seeking to register this computer-generated work as a work-for-hire to the owner of the Creativity Machine.” Thaler’s application was initially rejected by the Copyright Office in August 2019 because it “lacks the human authorship necessary to support a copyright claim.” Thaler challenged that refusal, and subsequent denial for reconsideration, on the grounds that “the human authorship requirement is unconstitutional and unsupported by either statute or case law.”

In a February 2022 letter, the Copyright Office once again rejected Thaler’s position, noting that “courts interpreting the Copyright Act, including the Supreme Court, have uniformly limited copyright protection to creations of human authors.” Thaler has since filed a lawsuit in Washington, D.C., district court challenging the Copyright Office ruling.

In February 2023, and following the media explosion over AI applications such as ChatGPT, the Copyright Office once again had the opportunity to provide its views on the issue of AI-generated art. Kristina Kashtanova, an artist and AI researcher, received a registration in September 2022 for an 18-page graphic novel, “Zarya of the Dawn,” whose images were generated using the AI image-generating technology Midjourney. Kashtanova had listed herself as the author and claimant for the entire work. Although the work was widely hailed as the first time the Copyright Office had permitted the registration of an AI-generated work, the application did not disclose that Kashtanova used AI to create part of the work. The Copyright Office subsequently notified Kashtanova that it intended to cancel the registration unless she explained how there was significant human participation in the creation of her work.

On Feb. 21, 2023, the Copyright Office [responded](#) to the additional information provided by Kashtanova, finding that the AI-generated components of her novel were not protectable by copyright, going into a more detailed analysis than it had in the Thaler matter. The Copyright Office noted that while Midjourney operates by generating four images in response to user text [prompts](#), the program “does not understand grammar, sentence structure, or words like humans,” and instead converts words and phrases “into smaller pieces, called tokens, that can be compared to its training data and then used to generate an image.”

The Copyright Office concluded that it was therefore Midjourney, not Kashtanova through her prompts—e.g., “dark skin hands holding an old photograph”—that originated the elements of authorship in the images. The key factor for the Copyright Office, and one that it felt distinguished it from other tools used by artists, was that Midjourney “generates images in an unpredictable way” that may be very different from what the user intended. According to the Copyright Office, and quoting the Court’s language in *Burrow-Giles*, a user of Midjourney was not the “master mind” behind the work.

The Copyright Office was not swayed by the fact that Kashtanova tweaked her prompts, sometimes through thousands of cases of trial-and-error until Midjourney generated the work she wanted. In the Copyright Office’s view, a user can still not predict what Midjourney will create ahead of time, nor dictate a specific result, even where such additional prompts “can influence the subsequent images.” In this respect, the Copyright Office analogized a user of Midjourney to someone commissioning a work of art, and merely providing the artist with general suggestions or a vision as opposed to specific directions of what the work needed to look like.

Implications for NFT Generative Art

Judicial decisions and the position of the Copyright Office lend support for the proposition that generative art, as created for NFT projects today, should be subject to full copyright protection. As noted, NFT generative art typically involves a human creating the underlying elements, and a computer program being used to select and assemble the elements, guided by instructions conveyed by a human—e.g., that a hat must specifically be placed on the head of the underlying figure.

The concept that a human can direct a tool sufficiently to be deemed the author was applied in *Lindsay v. Wrecked & Abandoned Vessel R.M.S. Titanic*, 52 U.S.P.Q.2D 1609 (S.D.N.Y. 1999). In that case, Alex Lindsay claimed to be the author of a film because he had created various storyboards, identified specific camera angles and shooting sequences, arranged the lighting, and directed the filming. The court found that while Lindsay did not actually operate the camera, given all the other steps he had taken, the final footage would be the product of Lindsay's "original intellectual conceptions" and hence Lindsay was properly the author.

The Copyright Office's own guidance on works of authorship highlight that using a computer algorithm as a tool in the creation of a work does not mean a human cannot claim authorship of the work. For example, the Copyright Office's Third Compendium § 313.2 states that the Office will not register works "produced by a machine or mere mechanical process" that operates "without any creative input or intervention from a human author" because, under the statute, "a work must be created by a human being." As the Office has noted, the crucial question is "whether the 'work' is basically one of human authorship, with the computer [or other device] merely being an assisting instrument, or whether the traditional elements of authorship in the work . . . were actually conceived and executed not by man but by a machine."

Similarly, in its letter finding that the Thaler AI work discussed above was not copyrightable, the Copyright Office referenced the 1978 final report by the National Commission on New Technological Uses of Copyrighted Works (CONTU) as mirroring the view of the Copyright Office. In that report, which was commissioned, in part, to study "the creation of new works by the application or intervention of [] automatic systems of machine reproduction," CONTU concluded: "the eligibility of any work for protection by copyright depends not upon the device or devices used in its creation, but rather upon the presence of at least minimal human creative effort at the time the work is produced." See CONTU, Final Report at 45-46.

Thus, using a computer to aid in the creation of a work does not mean, by definition, that the author cannot claim authorship in that work. The question with respect to NFT generative art is whether using a computer to randomly select elements to generate a final work lacks the "minimal human creative effort" required for human authorship or whether, as in the *Kashtanova* case, the artist cannot be the author since they do not know the specific final images that will be generated. It would seem based on existing precedent, and the view of the Copyright Office, that the human creativity threshold is satisfied for NFT generative art, and that the ruling in *Kashtanova* is easily distinguishable.

As noted, in most NFT generative art projects, the underlying elements are created by human artists. A human then uses a program, which has been configured pursuant to instructions from that human or someone working at their direction, to assemble these elements in a specified way. If such an algorithm were to fail, such as by placing a hat where the body should be, a human exercising quality control would likely reject that piece. A human also decides how many final pieces the program should generate. The fact that a computer program is executed to randomly select which of a given set of elements to incorporate should not override these creative human contributions, just as the individual decisions of the camera operator in *Lindsay* did not override Lindsay's overall creative direction.

The function performed by the computer in generating NFT generative art should be seen as nothing more than a time-saving mechanical function to aid in the artistic process. Few would argue that an artist loses their rights to claim authorship of a work if they randomly picked different traits they had created from various piles, and then placed them in pre-designated places to assemble a final work. The analysis should be no different if the artist decided instead to build a mechanical device that performed the same function, saving the artist time from repeating the physical task thousands of times. And, the same should hold true if a computer algorithm performed this final step because it was a digital and not physical work being created.

While the Copyright Office has not addressed the amount of human authorship required for generative art to be protected by copyright, its phrasing of what would trigger non-human authorship is instructive: “conceived and executed not by man but by a machine.” It would be misplaced to argue that a generative NFT art project was “conceived” by a computer.

The closest analogy is found in the Copyright Office's Third Compendium which states that there is no human authorship for “a claim based on a mechanical weaving process that randomly produces irregular shapes in the fabric without any discernible pattern.” However, in that example, the machine is creating an entirely random work without any human creativity. This stands in sharp contrast to NFT generative art, which relies on such human creativity, and whose projects are known for having a “discernible pattern” of regular shapes.

The Copyright Office's ruling in *Kashtanova* should not yield a different result. There, the Copyright Office was strongly influenced by the fact that when using programs like Midjourney, the user has no idea what images the program might return. A small tweak in a prompt may result in entirely new images being displayed that are drastically different from those generated by the previous prompt. In contrast, an artist using a computer program to assemble a series of elements for an NFT generative art project is fully aware of what each final image should generally look like.

Moreover, in distinguishing Midjourney from computer-aided devices, the Copyright Office in *Kashtanova* lent support for the very activity in which the creator of NFT generative art engages: “Like the photographer in *Burrow-Giles*, when artists use editing or other assistive tools, they select what visual material to modify, choose which tools to use and what changes to make, and take specific steps to control the final image such that it amounts to the artist's “own original mental conception, to which [they] gave visible form.”

This is not to say that all generative NFT art is, by definition, a work of human authorship. One can posit a situation where there is so little human intervention that it is the algorithm that is creating the work. For example, it may be challenging for an artist to claim human authorship where the artist merely inputs parameters for non-protectable shapes into an algorithm and then lets the algorithm randomly select some or all of these shapes, randomly select their color, and randomly place them in a pattern without any guidance from the artist.

Conclusion

As AI is increasingly used to generate digital works, and the intersection between AI and NFT generative works becomes more complex, questions of human authorship will continue to arise. However, at the present time, creators of generative NFT art have good arguments to establish authorship for purposes of copyright protection.