ChatGPT

AI-Generated Works and Copyright Authorship: Tool or Independent Creator?

Background and the "Tool vs. Author" Paradox

The rapid rise of generative AI has sparked debate over how copyright law should treat AI-generated works. At the heart of the issue is a paradox: should an AI system be viewed merely as a **tool** used by a human creator (analogous to a camera or paintbrush), or as a **quasi-author** that independently produces creative expression? This distinction has profound legal consequences. If AI is just a tool, the human user would be deemed the author and could claim copyright. But if the AI is effectively the creator (with no human involvement in the expressive elements), then under current law there is *no human author* – meaning the work would not qualify for copyright at all. In recent years (2022–2025), U.S. authorities have leaned toward the latter view, treating generative AI outputs as lacking human authorship and thus ineligible for copyright **unless** a human has made a creative contribution to the final work [1] [2]. This stance contrasts with the "camera analogy," where the human who snaps a photograph is the author (the camera is just a tool). The evolving policies, case law, and international approaches reflect an ongoing struggle to resolve this tool-versus-author paradox in copyright law.

U.S. Copyright Office Policy: Human Authorship as a Requirement

Human Authorship Only: The U.S. Copyright Office (USCO) maintains that copyright can **only** protect material created by a human being [3]. This principle is deeply ingrained in U.S. copyright doctrine. The term "author" in the U.S. Constitution and Copyright Act has been interpreted to **exclude non-humans** [3]. As early as the 1970s, the Copyright Office's Compendium of Practices stated it would not register works that did not "owe their origin to a human agent" [4]. The current Compendium likewise instructs that *"to qualify as a work of authorship, a work must be created by a human being,"* and the Office *"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."* [5]. In other words, if an AI or other process generates content without *creative intervention* by a person, that content is not registrable.

Tool vs. Machine: In examining works that involve technology, the Office asks whether the work is basically one of human authorship with the computer merely acting as an assisting instrument, **or** whether the traditional elements of authorship (e.g. the expressive content or selection/arrangement of material) were actually conceived and executed by a machine [6] [7]. This echoes the core question of tool vs. independent machine creation. If the AI is merely aiding a human who maintains creative control, the human can be considered the author. But if the AI is generating the expressive elements on its own, then those elements lack human authorship [1] [2]. The Copyright Office emphasizes this is a case-by-case inquiry, depending on how the AI tool operates and how it was used by the human [8].

Recent Policy Guidance (2023): In March 2023, the Copyright Office issued formal guidance on registering works containing AI-generated material [9] [10]. This came after the Office had already encountered applications for AI-created works. For example, in 2018 an application for a visual work described as

"autonomously created by a computer algorithm" was **denied** after review, because the work contained *"no human authorship"* [11] [12]. More recently, in 2022, author Kris Kashtanova sought to register a graphic novel that included text written by her and images generated with the AI program Midjourney. The Office concluded in February 2023 that while the **overall** graphic novel (with human-authored text and arrangement) was copyrightable, the individual **AI-generated images themselves were not** protected by copyright [13]. Kashtanova could claim copyright in the portions she wrote and the way she arranged the content, but not in the purely AI-produced illustrations [14].

Under the 2023 guidance, applicants are now explicitly required to **disclose** any AI-generated content in a work submitted for registration and to limit their claim to the human-authored portions [15]. The Office instructs that if a work contains AI-generated material, the applicant should describe what parts were human-authored (for example, the text or the selection and arrangement of elements) and disclaim the AI-generated parts [15]. **Prompts alone** are generally not considered sufficient human authorship. The Office notes that when a person simply enters a text prompt and the AI produces complex output (text, image, music), the *"traditional elements of authorship"* are determined and executed by the technology, not by the human user [16] [2]. In such cases, the AI is deciding the expressive details (the phrasing of a poem, the brushstrokes of a painting, etc.), so the resulting material *"is not the product of human authorship"* and must be left unclaimed in the copyright application [2] [17]. By contrast, if a human meaningfully controls or shapes the output – for instance, by *creatively selecting or arranging* AI-generated content, or by heavily editing and modifying it – then the human's contributions can be protected so long as they meet the minimal creativity threshold [18]. The Office gives examples: a visual artist who uses an AI-based filter or tool to **modify an image** remains the author of the resulting image, just as a photographer using Photoshop or an artist using a guitar effects pedal remains the author of the final work [19]. The crux is the degree of **creative control**: the human must have *"actually formed"* the work's expressive elements through their own creative choices [20].

In summary, U.S. policy at this time draws a line: purely AI-generated works (with no creative human input) are **unprotected**, whereas AI-assisted works *can* be protected **to the extent** of the human creativity involved [18] [19]. This effectively treats current generative AI systems not as simple passive tools, but as independent processes that can generate authorship on their own – and U.S. law, as the next section shows, insists that authorship be human.

Key U.S. Cases and Legal Debates on AI Authorship

American courts have reinforced the principle that copyrightable authorship **requires a human creator**. This has been affirmed both in unusual older cases and in new litigation directly about AI-generated art, often invoking the fundamental purpose of copyright (to encourage human creativity).

- **"Monkey Selfie" Case (Ninth Circuit, 2018):** In the famous *Naruto v. Slater* case, a photograph taken by a monkey led to a lawsuit over copyright. The Ninth Circuit Court of Appeals held that a **non-human** (an animal, in this instance) cannot be an author under U.S. copyright law. The court pointed out that the Copyright Act's text refers to an author's possible *"children," "widow,"* etc., terms which *"all imply humanity and necessarily exclude animals."* [21] Because the monkey was not a human, it had no rights under the Copyright Act – and thus the photo had no valid copyright. This case underscored that Congress and the courts assume an author must be a human person (or a human acting through legal entities). By analogy, this reasoning poses a challenge for AI-generated works: if

an AI "creates" something with no human involved in the creative decisions, it is analogous to the monkey photograph – a creation with no human author, and therefore no copyright.

- **Creativity Machine Artwork – *Thaler v. Perlmutter* (D.D.C. 2023):** The first U.S. court decision directly addressing AI-generated art came in *Thaler v. Perlmutter*. Dr. Stephen Thaler had used an AI system he calls the "Creativity Machine" to autonomously generate an image titled *"A Recent Entrance to Paradise."* He sought to register this artwork, explicitly naming the AI as the author and himself as the owner of the copyright (by virtue of owning the machine) [22]. The Copyright Office refused, citing the human authorship requirement, and Thaler sued the Office and the Register of Copyrights (Shira Perlmutter) under the Administrative Procedure Act [23]. In August 2023, Judge Beryl Howell of the U.S. District Court for D.C. ruled in favor of the Copyright Office, affirming that **human involvement is a requirement** for copyright protection [24] [25]. Judge Howell acknowledged that copyright law is "malleable" and has adapted to new technologies, but emphasized that through all its evolutions, it has maintained an underlying requirement of human creativity [25]. In her opinion, she drew a direct contrast between using a generative AI and using a traditional tool like a camera. When a photographer uses a camera, the **human** still "employs ultimate creative control" – the human decides the scene, lighting, composition, etc. The camera is just a mechanism to capture the image. By contrast, Thaler's AI-generated image lacked *any* human creative choices in the output; the AI made all the expressive decisions [26]. The court noted that the U.S. Copyright Act was intended to protect *"works of human creation."* Critically, Judge Howell wrote: *"Non-human actors need no incentivization with the promise of exclusive rights under United States law, and copyright was therefore not designed to reach them."* [27]. In other words, the very rationale for copyright (to spur creative work by granting authors a limited monopoly) does not apply to machines, which do not **need** an incentive to create. If an AI produces a painting or poem, granting it copyright would not further the constitutional goal of encouraging human authors – since no human labor or creativity was involved. This reasoning frames the *denial* of copyright to purely AI-made works not as a gap in the law, but as a conscious feature: copyright rewards human creative effort, not the output of algorithms.

Judge Howell's decision also made clear that this ruling was limited to *fully autonomous* AI-generated works. The court explicitly **distinguished** Thaler's scenario from cases in which artists use AI as a tool in the creative process [28]. The decision left open the question of **"how much human input is required"** to qualify for copyright when AI is involved [29]. That is, there is a spectrum between a pure AI-generated work (zero human input in the output) and a traditional human-made work – and the law will need to draw lines on that spectrum. However, because Thaler's artwork **admittedly had no human contribution to its expressive content**, it fell on the "no authorship" side of the line. This was the first U.S. court judgment to squarely say an AI-only work is not protectable. It confirmed in judicial precedent what the Copyright Office had already been practicing.

- **D.C. Circuit Appeal (2025):** Thaler appealed the decision, but in March 2025 the U.S. Court of Appeals for the D.C. Circuit **affirmed** that outcome [30]. The appellate court strongly agreed that the Copyright Act, read as a whole, requires a human author [30] [31]. Notably, the D.C. Circuit pointed to multiple provisions of the statute that make sense only for human authors: for example, the Act's duration rules (life of the author + 70 years) and inheritance rules (passing rights to an author's widow or children) clearly assume the author is a human being with a lifespan and family [32] [33]. A machine has no lifespan, cannot own property or sign legal documents, and has no heirs, so treating a machine as an "author" is incompatible with the statute's structure [34] [35]. The court rejected

Thaler's argument that "author" could be read to include AI (Thaler had pointed to a dictionary definition) – the court said context matters, and in the context of copyright law **"author" means a human** [36] . The panel also dismissed the idea that allowing only human authors would stunt innovation. They noted that humans are still fully incentivized to use AI *as a tool* to create new works, since those works can be copyrighted as long as a human's creative involvement is present [37] [38] . The existence of a human authorship requirement does not deprive human creators of protection when they use AI assistance – it only withholds protection from scenarios where **no** human creative choices can be found. The D.C. Circuit echoed the lower court's point that machines do not respond to economic incentives: *"the human authorship requirement does not result in less original work"* being produced by AI, because AI systems aren't creating art for the prospect of a legal reward [39] . If in the future AI systems became so advanced that these assumptions need revisiting, the court noted that Congress or the Copyright Office could always consider changes at that time [40] . But under current law, the principle stands: a machine cannot be an author or co-author of a copyrighted work. The decision reinforced that this question is separate from the *degree* of AI assistance that is allowed in a human-authored work – drawing that line is a "thornier" fact-specific issue for another day [41] [42] . The immediate point settled by *Thaler* is simply that **an AI itself cannot hold authorship** under U.S. law.

Summary of U.S. Position: Both the Copyright Office and the courts have now consistently embraced the view that *human creativity is a bedrock requirement* for copyright protection [24] [25] . U.S. case law confirms that only natural persons (or legal entities standing in the shoes of human creators, such as employers via work-for-hire) can be authors. This means generative AI today is legally treated closer to an **automated "author"** whose unguided outputs are uncopyrightable, rather than a neutral tool like a paintbrush wielded by a human artist. The open question – and active area of debate – is *how to handle the gray areas*: works where AI played a significant role but a human also contributed in some way. Determining the threshold of human input required (e.g. writing the prompt, curating or editing outputs, tweaking model parameters) is a challenge that future cases and policies will need to address [37] [28] . Nonetheless, the **philosophical stance** driving U.S. policy is clear: copyright exists to encourage *human* ingenuity and effort, and it is not intended as a reward for automata or accidents of algorithm with no person behind the creative choices [27] .

International Approaches: Human Authorship vs. New Frameworks

Approaches in other jurisdictions broadly reflect the same tension – most copyright systems insist on human authorship, but a few have experimented with alternatives or are reconsidering old rules in light of AI. Below is a comparison of how key jurisdictions are handling AI-generated works:

- **United Kingdom:** Uniquely, UK law has for decades included a provision explicitly addressing "computer-generated works." Section 9(3) of the UK Copyright, Designs and Patents Act 1988 provides that for any literary, dramatic, musical or artistic work "which is computer-generated, **in circumstances such that there is no human author**, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken." [43] . In essence, UK law created a legal fiction to assign authorship (and a 50-year copyright term) to the person who orchestrated the creation of an AI-generated work – typically, the user who inputs the prompt or otherwise sets up the generation [43] . This treats the human operator as an author even if their contribution was only to start the AI process. Notably, this is a *different approach* from the U.S., as it leans toward viewing the AI as a **tool** and ensuring the output can still be protected (albeit for a

shorter term than human works, which get life + 70 years). However, the UK's provision has been controversial. Critics point out a logical contradiction: UK copyright (especially under EU-influenced standards) normally requires a work to be *"original"* in the sense of being the author's own intellectual creation with a personal touch – a concept that presupposes a human creator [44]. How can a work with "no human author" meet this originality test? Some argue that in practice truly author-less works might never qualify as "original" under that standard [44] [45]. Furthermore, stakeholders question whether granting copyright in purely machine-made works has any **policy benefit**: there is little evidence it incentivizes creation, since an AI doesn't create for rewards, and it might even dilute the value of human-made works [46]. In 2021, the UK government consulted on whether to retain or abolish section 9(3); finding little concrete use of it, they initially kept it but said they would keep it under review [47] [48]. With the explosion of generative AI tools in 2022–2023, the UK reopened this discussion. A 2023 consultation document acknowledged *"renewed attention to how – and whether – AI outputs should be protected by copyright,"* and presented options including maintaining, amending, or repealing the special protection for computer-generated works [49] [50]. The UK government noted that many other countries (including the U.S. and EU members) **do not** have a similar copyright for AI-generated works, and there was no evidence that having it had made the UK a hotbed of AI innovation in comparison [51]. In fact, they observed that AI adoption did not appear higher in jurisdictions with such provisions than in those without [51]. As of 2025, the UK has not yet changed the law, but it is actively weighing the pros and cons of treating AI as a mere tool of a human author versus leaving AI outputs unprotected. The **trend** in the UK's review leans toward skepticism about extending copyright to non-human creations, aligning more with the international norm of human authorship, unless compelling evidence emerges that the current rule is fostering innovation or creativity in a meaningful way [51] [52].

- **European Union:** Copyright law across EU member states generally requires human authorship as well. The EU standard for originality, established by the Court of Justice of the EU, is that a work must be the author's "own intellectual creation" reflecting their personal creative choices [53]. By definition, this links originality to a human intellect and personality. As a result, *"works that are completely generated by artificial intelligence are not protected by copyright in the European Union"* under current law [54]. Without human intervention, an AI-produced output fails the originality test because it is not the result of a human mind's creative choices [54] [55]. EU authorities have reinforced this view in various reports. For example, a 2020 European Commission report outlined that an AI-generated creation can only be considered a "work" if it results from human intellectual effort and expresses the creative choices of a human [56]. This means pure AI outputs (no human involvement) fall outside copyright, effectively landing in the public domain by default. However, if a human uses AI as a **creative tool**, the outcome can be protected *provided that* the human's contribution is sufficient. This aligns with the notion of an "auxiliary tool" – the AI can assist, but the human is guiding the creative process. For instance, if a person devises a detailed prompt or input parameters and then curates or edits the AI's output, the final work *may* reflect that person's own intellectual creation and thus qualify for protection [57]. A recent illustration came from a court in the Czech Republic: in 2024, the Municipal Court in Prague ruled that a **complex creative prompt** given to an AI image generator (DALL-E) could make the human prompter the author of the resulting image [58]. The court treated the prompt as akin to artistic direction – since the prompt was detailed and specific enough to imprint the user's personal creative influence on the output, the *output was deemed protectable* (with the human as author). This case-by-case approach mirrors the emerging consensus: *AI-assisted* works can be protected if a human's creative choices are evident, while *fully* AI-driven works (with no human creative decisions) are not protected. At the EU legislative level, there have

been discussions but no major changes yet on AI authorship. The proposed EU **AI Act** (focused mainly on AI regulation) does not alter copyright authorship criteria, though it does call for transparency (e.g. requiring AI outputs to be identified, and disclosing when copyrighted material was used in training) [59]. In sum, Europe stands with the principle that copyright requires a human author, and any departure from that (such as creating a new form of protection for AI-generated content) has not been embraced so far.

- **China:** China's copyright law also does not explicitly recognize non-human authors, but recent court decisions suggest a **pragmatic, tool-based** approach in practice. A high-profile example is the **Tencent "Dreamwriter" case (2019)** in Shenzhen. Tencent's AI software "Dreamwriter" generated a financial news article with minimal human input. When a competitor copied the article, Tencent sued. The Shenzhen court ruled that the AI-generated article *qualified for copyright protection*, but crucially, it reasoned that the **humans** behind the process were the true creators. The court found that the **expression of the article resulted from the "selection and arrangement" by Tencent's team**, who designed and guided the software [60] [61]. The AI was characterized as **"only a tool"** assisting the human creators, not an independent author [60] [61]. Chinese law allows a legal entity (like a corporation) to be deemed the author if a work is created under its direction and responsibility, so the court held Tencent (via its employees) to be the author of the article [62]. In essence, the Chinese court avoided declaring the AI as an author; instead it looked for human involvement in the creative process and found that in the form of the engineers and staff who set up the AI's rules and chose its inputs. By contrast, in another case that same year, the Beijing Internet Court declined to recognize copyright in an AI-generated legal analysis report because it determined the content was *not* created by a human author or under a human's direction (the AI operated more autonomously in that instance) [63]. Taken together, Chinese cases suggest that if an AI's output can be traced to human-provided creative framework or decisions (even at one remove), the work can be treated as human-created. If truly autonomous, it would not be protected (a position still "controversial and undecided" in China for wholly AI-made works) [64] [65]. China's approach thus far effectively leans toward *finding* a human element (the AI's user or developer) to attribute authorship to, rather than leaving the work without an owner. However, this area remains fluid in China, and legal scholars note that completely "genuine" AI-created works (with no human creative role) present a novel question that Chinese law has yet to squarely resolve [66].

- **Other Notable Approaches:** Most jurisdictions around the world echo the requirement of human authorship (e.g. Canada requires some human "skill and judgment" for copyright, similar to the U.S. and has not recognized AI-alone works [67] [68]). However, some have contemplated alternative protections. For instance, **Ukraine** recently updated its copyright law to address AI outputs: rather than granting them standard copyright, Ukraine's new law introduces a **sui generis** protection regime for "non-original works generated by computer programs" [69] [70]. The law specifies that if a work is produced by an AI without direct human creative involvement (the person's role is merely to activate the program with no personal intellectual contributions), then it is *not* treated as a copyrightable work [71]. Instead, such fully AI-generated content can get a sui generis form of protection – a separate legal status outside traditional copyright [72] [70]. This effectively acknowledges the reality of AI-produced material but chooses to protect it under a different framework, since it doesn't meet the criteria of authorship under copyright law. So far, this approach is uncommon, but it represents one way lawmakers might try to **fill the gap** by creating new rights for AI outputs while maintaining the principle that copyright proper is for human creations.

Overall, internationally, there is a strong **convergence on the principle** that *fully machine-generated works (with no human author) fall outside the scope of copyright*. The UK's experiment with assigning authorship to AI works stands almost alone, and even there it is under scrutiny in light of modern AI capabilities [49] [73]. Most countries align with the view that AI can assist human creators (and those resulting works can be protected if the human contribution is sufficient), but an AI **per se** cannot be an author. The policy rationale commonly cited is that copyright exists to encourage **human** creativity – a theme seen in U.S. court opinions and European doctrine alike [27] [53]. That said, the *practical responses* vary: some legal systems might quietly allow de facto protection by finding a human in the loop (as in China), some might explicitly legislate workarounds or new rights (as in Ukraine), while others simply deny protection and leave the matter to future resolution (as in the U.S. and EU for now).

Implications for Artists and the Creative Industry

The question of "AI as a tool vs. AI as author" is not just academic – it carries real consequences for artists, authors, and businesses using generative AI. The legal treatment of AI-generated content will influence creative practices and economic decisions. Here are key implications under the two divergent approaches:

If Generative AI is Treated as a Tool (Human is Author of AI-Assisted Work):

- **Continuation of Incentives:** Artists and creators could embrace AI tools without fear of losing rights in their creations. If the law recognizes the human user as the author (much like a photographer using a camera or a digital artist using Photoshop), then the resulting work can be copyrighted normally. This ensures creators still have monopoly rights (to control copies, adaptations, etc.) over works they produce with AI assistance. Such protection can encourage creators to invest time and resources in AI-assisted creativity, knowing they can monetize and protect the outputs just as they would traditional works. For example, a graphic designer who uses an AI image generator to brainstorm or compose artwork would legally own the output if their creative input is deemed the driving force, providing confidence that their hybrid AI-assisted works won't be freely copied by others.

- **Clarity and Simplicity:** Treating AI as a tool simplifies the legal analysis in many cases – the focus is on what the human did. As long as a human meaningfully controlled the creative result (through prompts, selections, or edits), that person is the author. This approach mirrors long-standing practices in copyright: we do not dissect how much a camera, a software program, or a musical instrument contributed to a work – we credit the human operator. Applying the same logic to AI would fit within existing frameworks (with perhaps only modest tweaks, such as clarifying that providing a prompt or training an AI counts as making the "arrangements necessary" for creation, akin to the UK's approach [74] [75]).

- **Potential Over-Protection or Abuse:** A concern with the generous tool approach is the **risk of over-protecting works with minimal human creativity**. Generative AI can produce complex, high-quality outputs from a one-word or one-sentence prompt. If the law automatically grants copyright to the prompter, this could lead to **vast numbers of AI-generated works receiving protection** even when the human's contribution (e.g., typing "a painting of a sunset in Van Gogh's style") was trivial. This raises the question of whether that aligns with copyright's purpose. Granting exclusive rights in virtually automated creations could **flood the market with new copyrights** and potentially clog the public domain. It might also encourage "copyright gaming," where individuals generate thousands of

AI images or texts and claim rights, possibly limiting others' use of similar AI outputs. In the UK consultation, it was noted that the incentive effect of protecting AI outputs is likely minimal, and that unnecessary protection could impose costs on the public or subsequent creators without a corresponding benefit [46]. Ensuring a human creativity threshold (even under a tool approach) would be important to prevent protection of works that are essentially authored by the AI. Courts or lawmakers might need to articulate standards (e.g. requiring evidence of significant human selection or arrangement, not merely a prompt) to avoid **devaluing human authorship** through overbroad claims.

- **Maintaining Parity with Human Works:** On the positive side, treating AI-assisted works like any other creative work means artists don't face a patchwork of uncertain rights. It avoids a scenario where using a new technology inadvertently forfeits one's copyright. Historically, when photography first emerged, courts decided photographers *are* authors of their photographs (the camera was just a new tool) [76]. A similar stance for AI would likewise fold AI into the creative toolkit, rather than making it a legal outlier. This could spur innovation in creative industries – artists could experiment with AI techniques freely, and companies could invest in AI creative tools, knowing the outputs have the usual protections. The flip side is that it could also strengthen the position of those who produce AI content at scale (including possibly large publishers using AI to generate articles, images, or music en masse, all fully protected), which some human artists fear could lead to increased competition and saturation of content markets.

If Generative AI is Treated as a Quasi-Author (Works Lack Human Author and Get No Copyright):

- **Uncopyrightable Outputs (Public Domain Surge):** In this scenario, anything created *solely* by AI (with no sufficient human creativity) would be in the **public domain** from inception. Artists who rely heavily on AI would find that portions of their work cannot be protected – for example, an illustrator who generates a raw image via AI and uses it directly might have no exclusive rights in that image. This could be detrimental to creators who invest effort (even if primarily via guiding an AI) because anyone could copy, distribute, or remix the AI-generated portions freely. For instance, if an author uses AI to write a short story and the law deems the story unprotected, then as soon as the author releases it, **anyone else could reproduce it or even sell it** without permission. This undermines the ability of creators to commercialize AI-heavy projects in the traditional copyright-driven way (e.g., selling copies or licensing usage). It might especially impact fields like stock imagery, graphic design, or music production, where AI tools are increasingly used – if the outputs aren't protected, the economic value of those outputs could drop (since a client might not pay for a license if they can legally use the content for free).

- **Incentive to Add Human Creativity:** On the other hand, knowing that pure AI outputs get no protection might incentivize artists to **infuse more human originality** into the process. Creators may take AI-generated drafts and then significantly edit or remix them, or combine multiple AI elements with human-made elements, to ensure the final work crosses the threshold into protectable territory [18]. In effect, this approach could push artists to use AI as just one component of a broader creative effort, rather than relying on it end-to-end. Many artists already do this – using AI to generate ideas or rough material, then applying their own skill to refine it. The legal rule would reinforce that habit by only rewarding the human contributions. Additionally, producers of AI technology might respond by developing tools that allow users more control over outputs (so that

it's easier for a user to claim they shaped the expression). In the long run, this could narrow the gap between an AI as "quasi-author" and AI as "tool," if users are given deeper influence over the AI's decisions.

- **Enforcement and Attribution Challenges:** If AI-created content isn't owned by anyone, it complicates enforcement against misuse. While one might think lack of copyright is *freeing* (you can use AI content freely), it also means an artist who, say, uses AI to generate a song has **no recourse if someone else copies it**, because there is no exclusive right to enforce. Creators might have to rely on other areas of law for protection – for example, **trade secret or contract law** (keeping the AI output secret until use and NDA'ing those who see it) or technological measures (watermarking outputs to at least get attribution even if not legal ownership). Additionally, the line between AI-generated and human-generated may not always be clear to downstream users. If an artwork is posted online, one might not know if it was human-made (and copyrighted) or AI-made (and free to use). The Copyright Office's push for disclosure of AI content [15] is one way to address this, but outside the registration context, there's no general requirement to label works as AI-generated. This uncertainty could create **risks for users** as well – users might mistakenly reuse something thinking it's free of rights when in fact it had enough human input to be copyrighted, or vice versa. The "quasi-author" approach thus comes with a need for clarity about what is AI-generated and the extent of human input, to know whether something is protected or not.

- **Public Domain Benefits:** From a societal perspective, treating purely AI creations as unprotected does have an upside: it would inject potentially enormous amounts of new content directly into the public domain. Anyone could build upon AI-generated text, art, or music without fear of infringement. This could accelerate innovation and creative mashups. For example, if AI can compose background music or generate graphics that are free to use, smaller creators and the public benefit from a rich commons of AI-produced material. Some advocates argue this is fair, since no human toiled over the work in the way an author traditionally would, so allowing immediate public use doesn't deprive a human creator of just rewards [27] [46]. In fact, during policy debates in Canada and elsewhere, stakeholders suggested that *autonomously created AI works should fall into the public domain*, precisely to avoid over-granting monopolies on machine output and to keep the incentives focused on human creativity [77] [78]. However, **balance is key** – if too much content is unrestricted, it might undercut certain industries (e.g., stock photo companies or content writers might be outcompeted by free AI content). The counterargument, as the D.C. Circuit noted, is that humans will still create (and need copyright) for works where they add value, so the public domain of AI stuff doesn't necessarily "stymie the creation of original works" by humans [39].

- **Pressure for New Rights or Reforms:** Finally, if the status quo remains that AI-generated works have no copyright, we may see pressure on legislatures to revisit the law. Businesses investing in generative AI (for instance, game developers using AI for graphics or text) might lobby for a clearer framework so they can own and license the outputs. Already, as noted, countries like Ukraine have moved toward a sui generis right for AI outputs [72]. In the U.S., Congress and the Copyright Office have started inquiries into various AI-and-IP issues (training data, infringement, etc.), and they could consider whether new legislation is warranted to address AI-generated works if the current approach proves too rigid or creates economic problems. Any such reform would have to reconcile with the fundamental question of incentive: does granting some form of protection to AI-produced material encourage *human* innovation in a meaningful way, or does it simply grant windfalls for content that would be created by machines regardless? For now, U.S. authorities seem unconvinced

that change is needed – the courts have found the existing human-authorship requirement fully sufficient and not in conflict with technological progress [37] [39]. But as AI technology evolves (for example, if AI systems one day operate more autonomously or even exhibit creative behavior that stakeholders argue merits protection), this debate will likely continue.

Conclusion and Outlook

The legal treatment of AI-generated works is an evolving frontier, characterized by a fundamental commitment to **human-centric creativity** in copyright law. In the United States, the Copyright Office and courts have drawn a firm line: **no human author, no copyright** [1] [25]. Other major jurisdictions, like the EU, follow the same principle, while a few (notably the UK with its historical provision) have tested mechanisms to attribute authorship to AI-assisted creations [43]. So far, the international trend is to **preserve the human author as the cornerstone** of copyright, treating AI as a powerful new creative aid but not an independent rights-holder [54] [57].

For artists and industries, this means navigating a landscape where using AI is encouraged but comes with a need for human touch – the law will protect your work if you can demonstrate your own creative contribution, however small or large, but it will likely *deny protection to anything that is truly the AI's own**. In practical terms, creators should document their role in the process and be prepared to disclaim purely machine-made portions when seeking protection [15]. Conversely, if one wishes to leverage AI output freely, the current rules allow that for unmodified AI-generated content (since it isn't protected to begin with).

Looking ahead, we can expect **further refinement of these rules**. Determining **how much** AI involvement is too much (such that a work is no longer "human-authored") will be a key question in future litigation and policy guidelines [28] [41]. We may see new best practices or even technological solutions – for example, metadata indicating the percentage of AI-generation – to help classify works. Internationally, there might gradually be more convergence or treaties on the status of AI-generated works, especially as AI models and creative content cross borders. If AI systems become even more prevalent in content creation, the pressure could mount for a more nuanced approach (some have floated ideas like a separate "AI-generated content" label with a different protection regime, or shorter-term rights akin to database rights). Any such changes, however, will have to grapple with the core philosophy that has been reiterated by judges and lawmakers: copyright's purpose is to **promote human ingenuity and the progress of *human* creations** [27]. Until or unless societies decide that machine creations also deserve a form of encouragement, the safest assumption is that the camera analogy holds only if a human is behind the lens – and if the "camera" starts taking pictures on its own, the law will view those pictures as belonging to everyone and no one.

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