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Material Human Involvement in Artificial Intelligence-Assisted Art: A Qualitative Review of Copyright Authorship in the Generative AI Era

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ABSTRACT

Generative artificial intelligence ("AI") can now create music, images, and text, but it can also serve as a tool that helps people produce original work. This development raises an important copyright question about which parts of a work combining human creativity with AI-generated material should receive legal protection. This article reviews federal court decisions, U.S. Copyright Office policies, legal scholarship, and examples of artists using AI. It examines how current law distinguishes material created entirely by AI from original expression contributed by an individual. The review finds that fully AI-generated material cannot receive copyright protection. However, a mixed work may still be protected when an individual contributes original text, music, artwork, selection, arrangement, or meaningful changes. Although current guidance recognizes these contributions, there is a lack of clear standards to help creators demonstrate and document such work. To address this problem, the article proposes a material-human-involvement framework based on five factors: the creator's original idea and plan, creative control, selection and arrangement, meaningful changes to AI-generated material, and records showing how the work was created. This framework would assist in identifying and protecting the specific parts of such work that resulted from human creative choices. This approach would preserve copyright's focus on human authorship while allowing artists to use rapidly expanding AI tools.

INTRODUCTION

Generative AI has quickly emerged as a common creative tool. AI programs can create images from written instructions, suggest melodies and lyrics, imitate voices, and produce or revise written text. These tools can help democratize artistic creation by expanding opportunities for people who lack formal artistic training or access to expensive equipment (Grba, 2024). However, they can also blur the lines as to what is copyrightable. U.S. copyright law generally only protects original expressions created by a human author. Therefore, the main legal issue is not simply whether an artist used technology, since artists have long used cameras, synthesizers, editing software, and other tools. The more difficult question is whether the human user or the AI system controlled the creative elements of the finished work.

Artists and musicians are already using AI in different parts of the creative process. For example, Taryn Southern incorporated AI into the production of her 2018 album *I AM AI*, while David Usher collaborated

with Google's AI team to develop Lyric AI Assistant, a program that suggests words and phrases to songwriters (Raine, 2018). Songwriter Ashley Gorley has similarly described AI as a possible source of ideas rather than a replacement for human creativity (Bonaguro, 2024). These examples show the different roles AI can play in the creative process, but the use of AI alone does not determine whether the resulting work qualifies or not for copyright protection.

The way AI is used matters because not all AI-assisted works involve the same level or type of human creativity. In 2023, the viral song *Heart on My Sleeve* used synthetic vocals resembling Drake and The Weeknd and accumulated millions of listens before platforms removed it. This episode raised issues extending beyond ownership of the underlying composition, including consent, voice imitation, and platform governance (Robinson, 2023). By contrast, many artists use AI to generate alternatives that they select, edit, arrange, or combine with independently created material. Treating every use of AI as equivalent would collapse materially different creative processes into a single category.

U.S. copyright law is clearer in situations involving either entirely human-created or entirely AI-generated material. A work produced independently by an AI system has no human author and therefore cannot receive copyright protection. By contrast, a poem written by an individual does not lose protection simply because the writer used software to correct spelling or grammar. The more difficult cases involve mixed works that contain both human-created and AI-generated material. In these situations, an individual may develop the original idea, provide instructions, review several AI-generated results, select particular elements, revise them, and combine them with original text, music, or artwork. The U.S. Copyright Office examines these works on a case-by-case basis and protects only the expression created by a human (U.S. Copyright Office, 2023a, 2025). Although this approach protects the principle of human authorship, applying it still requires creators to identify the expression they contributed.

This review therefore asks two questions: How does current U.S. copyright law distinguish AI-generated expression from AI-assisted human expression, and what evidence should a creator provide to demonstrate human authorship in a mixed work? By comparing court decisions, Copyright Office materials, legal scholarship, and documented examples of artists using AI, this article identifies five important factors for addressing these questions: the creator's original idea and plan, creative control, selection and arrangement, meaningful changes to AI-generated material, and records of the creative process. Based on these considerations, the article proposes a material-human-involvement framework for identifying the parts of an AI-assisted work that result from human creative choices. Under this approach, copyright protection would apply only to the original expression that the individual actually authored, including original expression reflected in a creative selection, arrangement, or modification. However, simply choosing one AI-generated output from several options does not by itself make the creator the author of that output. Rather, the creator must contribute original expression to the work.

EXISTING LITERATURE AND RESEARCH SIGNIFICANCE

Questions about ownership of computer-generated works arose long before today's generative AI tools. As computers became capable of producing material such as music and written text, scholars began

asking who should receive copyright protection when a machine played a substantial role in creation. University of California, Berkeley copyright scholar Pamela Samuelson (1986) examined possible ways to allocate ownership among those involved, including the programmer who developed the software and the person who used it to produce a work. This earlier debate shows that the uncertainty surrounding AI authorship has roots in decades of technological change. It also highlights an important distinction among designing a creative tool, operating that tool, and creating the particular expression in its output. A programmer may make the process possible without composing a specific song, while a user may initiate the process without determining the resulting melody or lyrics. Today's generative AI makes these distinctions especially important because it can produce detailed content from relatively brief instructions. The present study builds on this earlier debate by examining what a person actually contributes to the finished work and what evidence connects that contribution to identifiable original expression.

More recent scholarship continues this earlier debate by examining both who should be recognized as an author and how people contribute to AI-assisted creation. Mackenzie Caldwell (2023), then a law student at the University of Houston Law Center, argues that the individual using AI should be recognized as the author of the resulting art. Paul Goodfellow (2024), an artist and senior lecturer at Scotland's Abertay University, takes a broader view by examining how artists, AI developers, programs, and training data help shape the work. While Caldwell focuses on legal recognition of the user, Goodfellow explores the wider creative process. Adam Berkowitz (2024), a doctoral researcher at the University of Alabama, adds another perspective by examining the challenges of accurately describing music created through human–AI collaboration. Together, these studies provide useful ways to understand the people and technologies involved in creation. The present article builds on their work by asking which specific parts of the finished product the human actually authored and what evidence supports that claim. This focus helps distinguish participation in the creative process from the original human expression that may qualify for copyright protection.

To connect these scholarly discussions with the practical concerns of creators today, this article draws on the U.S. Copyright Office's existing recognition that human contributions may receive protection within a work containing AI-generated material. Its contribution is to organize those legal principles into a framework that helps creators explain what they authored and how they can demonstrate it. The framework considers the creator's plan, control over expressive details, selection and arrangement of material, original changes, and records of the creative process. For example, a songwriter could use drafts and recordings to identify original lyrics and a melody while explaining that AI generated the accompaniment. These considerations serve different purposes. A plan explains the intended work, and records document the process, but neither establishes authorship unless it can be connected to original human expression in the finished product. The article therefore brings existing legal principles and scholarly discussions together in a form that creators can more easily understand and apply, while limiting any copyright claim to the human contributions that qualify for protection.

METHODS

This article uses qualitative document analysis, which includes carefully reviewing written sources to identify common ideas and differences in how an issue is addressed (Bowen, 2009). The goal is to understand how U.S. copyright law recognizes human authorship in works created with AI and to develop a practical framework for explaining human contributions. Sources were chosen because they directly address whether AI-generated or AI-assisted works qualify for copyright protection. The greatest weight was given to primary source materials, including the U.S. Copyright Office's 2023 registration guidance, its decision concerning *Zarya of the Dawn*, its 2025 report on AI and copyright, and the federal appellate decision in *Thaler v. Perlmutter*. The review also included scholarship examining AI music, the roles of people and technology in artistic creation, and possible approaches to authorship and ownership (Berkowitz, 2024; Caldwell, 2023; Goodfellow, 2024; Grba, 2024; Samuelson, 1986). Music-industry reporting provided examples of artists using AI and the controversies surrounding those uses (Bonaguro, 2024; Raine, 2018; Robinson, 2023). These reports were treated as illustrative evidence, not as legal authority.

The analysis proceeded in two stages. First, each source was examined for its treatment of authorship, human control over creative details, and the role of prompts. The review also considered when selecting, arranging, or modifying material may qualify for protection and how creators should disclose AI-generated content. Second, the sources were compared to identify shared principles and differences in their reasoning. Particular attention was given to *Thaler v. Perlmutter*, which concerned an image claimed to have been created entirely by AI, and *Zarya of the Dawn*, which combined human-written text and arrangement with AI-generated images. Comparing these examples helped clarify why human contributions must be identified separately from generated material. The findings informed the article's proposed five-factor framework for describing those contributions and the evidence supporting them.

RESULTS

Human Authorship Remains the Controlling Principle

The reviewed sources identify human authorship as the starting point for deciding whether a work created with AI can receive copyright protection. The central distinction is between expression created by a person and material generated by an AI system. Using AI does not automatically prevent protection, but a person's involvement must go beyond requesting or receiving an output.

Thaler v. Perlmutter illustrates the limits of a claim based entirely on machine authorship. The applicant identified a computer system as the sole author of an autonomously generated image. The federal appellate court held that a nonhuman machine cannot be an author under the U.S. Copyright Act (Thaler v. Perlmutter, 2025). In March 2026, the Supreme Court declined to hear the case, leaving the appellate decision in place (Supreme Court of the United States, 2026). This refusal to review the case did not mean

that the Supreme Court had examined and approved the lower court's reasoning. The case addressed an image claimed to have been created entirely by a computer system. Therefore, it did not settle the issue of when an individual using AI may receive protection for their own creative contributions.

In a 2025 report, the U.S. Copyright Office addresses this broader question. It concludes that existing U.S. copyright law can protect original human expression in works made with AI, while excluding material generated entirely by AI. Human contributions may include independently written text, an original arrangement of material, or creative changes to generated content (U.S. Copyright Office, 2025). The relevant question is what the person actually authored within the finished work.

Earlier technologies have similarly prompted debate about the meaning and identification of authorship (Caldwell, 2023). For example, a camera records a scene, but a photographer can shape the photograph through choices about framing, lighting, and timing. Editing software can likewise help the artist carry out specific choices, such as cropping an image or adjusting its colors. Generative AI can play a different role because it may supply expressive details that the user-photographer did not determine. A request for an image of a family gathering, for example, may leave the AI to decide how the people look, where they stand, and what surrounds them. Even a detailed request may leave many of these choices to the AI system. The photography example therefore helps explain that while the use of technology is essential, giving instructions or choosing a preferred AI-generated result does not necessarily establish authorship of its expressive details. Copyright protection instead depends on identifying the original expression the person contributed, such as their own drawings, writing, creative arrangement, or edits.

Prompts as Instructions and Evidence

The distinction between communicating an idea and creating its expression becomes particularly important when examining prompts, the instructions users give an AI system. Prompts may describe a detailed scene, specify a mood, or request changes to an earlier output. They can show a person's creative goals, but the system may still determine many details of the resulting image, music, or text. According to the U.S. Copyright Office, prompts used with current AI systems generally do not give users sufficient control over those details to establish authorship of the generated material (U.S. Copyright Office, 2025). An original prompt may itself qualify for protection as written text, but that protection does not automatically extend to the output.

Further, neither the number nor the complexity of prompts provides a reliable measure of human authorship. A person might spend hours revising instructions while leaving the AI to determine the final composition. Another person might use AI only briefly but contribute original drawings, lyrics, or substantial creative edits. These examples show why the analysis must examine the expression contributed, rather than the time spent or the number of steps taken. Goodfellow's (2024) explains how artists, AI developers, programs, and training data all help shape a work. For copyright purposes, the question remains which original expression a person actually contributed to the finished work.

Nevertheless, prompt records have a useful role. They can show what a person requested, how their goals developed, and which changes they sought. When considered alongside original source material, drafts, and editing files, these records assist in evidencing or explaining the individual's contribution. Their value depends on what they demonstrate. A history of requests shows instructions, while a comparison of an AI-generated draft and a manually revised version may reveal original expression added by the individual. Records support a claim of human authorship when they connect the creator's actions to identifiable expression in the finished work.

Mixed Works Can Contain Protectable Human Contributions

The limits of prompting do not mean that every work containing AI-generated material falls outside copyright protection. A finished work may combine generated content with expression created by a person. The U.S. Copyright Office's decision concerning *Zarya of the Dawn* illustrates how these contributions can be distinguished. The Office recognized Kris Kashtanova's authorship of the graphic novel's text and its original selection, coordination, and arrangement of written and visual material. However, it excluded the individual images generated with Midjourney, an AI tool that generates images from written prompts (U.S. Copyright Office, 2023b). The decision considered the claimed creative process and image changes, but the evidence did not establish human authorship of the generated images. The book therefore contained both protected human contributions and unprotected generated material.

The reviewed guidance identifies several ways that human expression may receive protection within such mixed works. An individual may contribute original content, such as dialogue, drawings, or music. They may also select and arrange material in an original way, or make creative changes that add their own expression to generated content (U.S. Copyright Office, 2023a, 2025). These possibilities concern the human contribution itself. For example, protection for an original page layout does not automatically give the creator copyright in every AI-generated image placed on that page.

Calling a work "AI-assisted" therefore provides too little information to determine its copyright status. AI might perform a small task, or it might generate most of the expressive content. In a song, a person may write the lyrics and melody while AI supplies accompaniment. In an illustration, an artist may draw the main character and place it against a generated background. These examples require attention to the particular contributions and the originality of the human expression. A copyright claim should therefore identify what the person authored and distinguish it from what the system generated.

The same principle applies to editing. A large number of changes does not necessarily establish authorship if those changes are routine or mechanical. Conversely, a smaller number of changes may add original expression, such as manually redrawing a character's face or rewriting a passage in the creator's own words. The importance of an edit depends on what it contributes to the finished work.

A Material Human Involvement Framework

Together, these findings address the article's first research question by showing how current U.S. copyright principles distinguish human expression from generated material. They also provide a basis for addressing the second question about evidence. To make these principles easier to apply, this article organizes them into a five-factor material human involvement framework as shown on Table 1 below.

The framework asks artists to connect their actions to specific features of the finished work. Completing every category does not guarantee protection, and a creator does not need to make every type of contribution. The purpose is to help identify original human expression and explain how the available evidence supports that identification.

Table 1. Five Factors for Evaluating Material Human Involvement in AI-Assisted Works

Factor	Question	Illustrative evidence
Creative Planning	What original plan, ideas, or material did the individual develop before or during creation?	Outlines, sketches, musical demos, storyboards, or other original materials
Creative Control	Which expressive details did the individual create or directly determine?	Original inputs, manual edits, source files, placement, timing, framing, or editing decisions
Selection and Arrangement	How did the individual organize material into an original whole?	Layouts, sequencing, editing layers
Creative Changes	What original expression did the person add or modify?	Before-and-after versions, redrawing, rewriting, rearranging music or mixing
Documentation and disclosure	What records distinguish the human contributions from the AI-generated material?	Drafts, versions, prompt histories, contribution statement

Creative planning provides useful background, but an idea alone does not establish authorship of the resulting work. Planning a song about friendship, for example, does not demonstrate that the person wrote its lyrics or melody. An original lyric draft or recorded melody provides a clearer connection between the person's contribution and the finished song. Plans become more useful when the evidence shows how the creator turned them into expression.

Creative control concerns the details the person actually determined. Giving an AI system a general instruction differs from writing the words that appear in the finished work or manually drawing its central figure. The framework therefore directs attention to the relationship between a person's decisions and the expression produced, rather than assuming that operating the software gives the user authorship of everything it generates.

Selection and arrangement can provide another basis for protection. A creator might organize images and text into an original sequence that tells a story, even when some images are generated. This contribution concerns the organization of the material. Choosing one preferred output from several alternatives does not, by itself, demonstrate an original arrangement or authorship of the selected output.

Creative changes require a similar examination of what the person added. Before-and-after versions can help show whether a creator introduced original writing, redrew visual features, or composed new musical elements. These comparisons are more informative than a simple count of edits because they reveal the expression contributed.

Documentation and disclosure support the explanation of all these contributions. Drafts, recordings, editing files, and version histories may help connect the creator's actions to the finished work. Prompt histories can supplement these records by explaining the instructions given to the system. However, documentation cannot create authorship where original human expression is absent. Its purpose is to make an existing contribution clearer and easier to assess.

Implications for Artists and Copyright Policy

The framework provided in this article suggests a practical way for creators to explain their use of AI. They can identify the original material they contributed, describe any creative arrangement or changes, and indicate which elements came from the system. A songwriter, for example, could use lyric drafts and recordings to support a claim that they wrote the words and melody while explaining that AI generated the accompaniment. This description makes the scope of the claim more precise.

The U.S. Copyright Office's registration guidance requires applicants to disclose AI-generated material that is more than minimal and exclude that material from their copyright claim (U.S. Copyright Office, 2023a). The proposed framework may help creators prepare a clearer account of their human contributions, but it supplements existing requirements rather than replacing them. The usefulness of particular records will depend on the work and the contribution being claimed. This review does not establish that creators must preserve every rejected output or that a particular record will guarantee registration.

Finally, copyright protection for human contributions does not resolve every concern raised by AI-assisted creation. Questions about copying existing works, imitating a performer's voice, or obtaining permission involve separate issues. The controversy surrounding *Heart on My Sleeve*, for example, illustrates concerns about AI voice imitation that extend beyond identifying the author of a song

(Robinson, 2023). The findings here address the narrower questions of what the person authored and what evidence supports that claim. They do not give creators unrestricted permission to use another person's work or identity.

DISCUSSION AND LIMITATIONS

The findings address the first research question by showing that copyright protection depends on identifying original human expression, including within works that also contain AI-generated material. The proposed framework addresses the second question by helping creators explain their contributions and connect them to supporting evidence. Original drafts, editing files, and before-and-after versions can show what a person authored more clearly than a statement about time or effort.

The article's contribution is to bring existing principles together in a practical guide, rather than propose new legal rights. Its five factors serve different purposes and do not form a checklist that guarantees protection. Creative planning helps explain the creator's goals, while records help document the process. Neither establishes authorship unless the evidence identifies original human expression in the finished work.

Several limitations affect these conclusions. The review examined selected relevant sources rather than every publication or legal interpretation. Its two main examples also have a limited scope. *Thaler v. Perlmutter* concerns a claim of entirely machine-created authorship, while *Zarya of the Dawn* concerns a graphic novel combining human writing and AI-generated images. These cases do not represent every way that musicians, writers, artists, or filmmakers use AI.

The study is limited to U.S. copyright eligibility. It does not resolve disputes about training data, infringement, contracts, or the use of a person's voice or likeness. Its conclusions may also need revision as AI tools and policies change, especially if new tools give users greater control over expressive details. Examining different AI tools could also help determine how varying levels of human control affect the evidence needed to demonstrate authorship.

CONCLUSION

U.S. copyright law already provides a basic foundation for addressing generative AI. Copyright requires a human author and protects only the original expression created by that individual. *Thaler v. Perlmutter* confirms that material created entirely by an AI system cannot receive copyright protection. However, *Zarya of the Dawn* and U.S. Copyright Office guidance show that a work combining human-created and AI-generated material may still receive protection for its human-created text, selection, or arrangement. The remaining practical challenge examined here is how creators can describe and document the particular human contributions for which they seek protection.

The proposed material-human-involvement framework offers a structured way to explain those contributions. It would examine whether the individual developed the work's original plan, controlled how its creative elements were expressed, made original choices in selecting or arranging material, meaningfully changed AI-generated content, and kept records of those contributions. These factors would not grant copyright merely because someone spent significant time or effort using AI. They also would not give an individual ownership of material produced entirely by AI. Rather, they would identify the specific parts of the work that resulted from human creative choices.

Generative AI does not need to be treated as either the author of a work or a reason to deny copyright protection to the entire work. It may generate material that cannot be protected, serve as a tool within a human creative process, or perform both roles in the same work. Copyright law should protect the specific elements created by an individual and require creators to honestly disclose significant AI-generated material. This approach would preserve copyright's focus on human creativity while allowing artists to benefit from rapidly advancing technological developments.

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