Copyright Authorship in the Era of Generative AI: A Control-Based Framework

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Abstract

Generative artificial intelligence (AI) fundamentally challenges the traditional conception of authorship within copyright law. It was long thought that only human creativity can generate copyrightable works. Recent advances enable the production of expressive content with minimal or no direct human input, raising complex questions regarding originality, creative contribution, and attribution. In many places, courts and lawmakers have mostly agreed that people should be the ones who write things. However, the swift expansion of AI-assisted and AI-generated works has exposed significant doctrinal ambiguity regarding originality, creative contribution, and attribution. This article examines copyright law's treatment of authorship in the era of generative AI. Using doctrinal analysis, comparative scholarship, and institutional guidance, it looks at different ways to use AI to create things. These include strict human-centered authorship models, partial or hybrid human–AI authorship theories, and institutional responses based on policy that try to fix problems with incentives and the market. The emphasis is on the evolving nucleus of creativity within generative systems, where human contribution increasingly manifests through prompt design, iterative refinement, selection, and the establishment of constraints, as opposed to conventional expressive execution. The Article proposes a control-based framework for copyright authorship, arguing that substantial human creative control, rather than mere mechanical expression, should be the primary criterion for authorship attribution in generative AI-mediated creation. This method keeps the human-centered roots of copyright while making authorship law more relevant to how people make things today.

Keywords

Generative Artificial Intelligence; Copyright Authorship; Originality; Substantive Creative Control; Human–AI Co-creation.

1. Introduction

The rapid progress and widespread use of generative artificial intelligence (AI) have rendered copyright law increasingly difficult to navigate. Earlier computer technologies functioned primarily as passive tools, lacking autonomous creative capacity. By contrast, contemporary generative systems are capable of producing text, images, music, and other forms of expressive content that closely resemble works created by human authors. This technological transformation challenges one of the most fundamental premises of copyright law: that authorship presupposes human creativity and intentional expression. Historically, copyright law across jurisdictions has determined authorship through human intellectual effort. It has consistently identified the human author as its principal normative subject, whether articulated through originality criteria, personality-driven theories, or incentive-based rationales [1,2]. Generative AI complicates this framework by introducing systems trained on

vast datasets that rely on probabilistic processes to generate outputs. Even users who actively engage with such systems cannot reliably anticipate the specific form of the resulting content. As a consequence, the causal and normative connection between human intention and expressive output has been significantly weakened [3]. These developments give rise to immediate legal and practical consequences. The U.S. Copyright Office has taken the position that works generated entirely by AI are ineligible for copyright protection in many jurisdictions. As a result, a substantial volume of contemporary creative output may fall into the public domain. At the same time, rigid adherence to traditional authorship doctrine risks overlooking the significant human contributions inherent in modern AI-assisted creative practices. Activities such as prompt design, iterative refinement, output selection, and the imposition of creative constraints frequently shape the expressive qualities of AI-generated works; however, they do not readily conform to conventional authorship frameworks [4]. Scholars and policymakers have responded to this tension in diverse ways. Some commentators contend that AI should be regarded merely as a tool, with authorship recognized only where human oversight is direct and outcome-determinative [5,6]. Others argue that this approach fails to account for novel forms of creativity enabled by generative systems, while a further group supports institutional or policy-driven responses that bypass traditional authorship principles altogether [7]. These competing methodologies reveal persistent uncertainty surrounding the conceptualization of authorship in an era of machine-mediated creativity. This Article contends that copyright authorship in the age of generative AI should be assessed through a control-based framework. Rather than inquiring whether AI systems themselves possess creativity, the analysis should focus on whether an individual has exercised substantive creative control over the generative process. This approach reorients authorship from expressive execution toward generative governance. In doing so, it preserves the human-centered foundations of copyright law while offering a principled response to the realities of AI-mediated creation.

2. Theoretical Background

Authorship constitutes a foundational concept in copyright law, yet it remains substantially under-theorized within positive legal frameworks. International copyright treaties, most notably the Berne Convention, deliberately refrain from defining the term “author,” thereby allowing national legal systems to delineate its contours through doctrinal development and judicial interpretation. Despite jurisdictional variation in doctrinal articulation, a shared premise persists: copyright authorship is understood as a human status grounded in creative and intellectual agency. This human-centered conception of authorship is closely aligned with prevailing justifications for copyright protection. Labor-based theories emphasize the moral significance of human intellectual effort, while personality-based theories conceptualize creative works as manifestations of the author’s individuality and self-expression. Utilitarian perspectives, although not explicitly humanistic, likewise assume human authorship by framing copyright incentives as mechanisms that encourage human creators to invest effort in the production of socially beneficial works. Within these frameworks, originality operates as the doctrinal threshold for protection, requiring independent creation and a minimal degree of creativity attributable to human intellect [1]. Generative AI complicates this theoretical framework by decoupling expressive output from direct human execution. Unlike traditional creative tools, generative AI systems do not merely transmit human intention into fixed expression; instead, they rely on probabilistic processes trained on large-scale datasets to generate outputs. This inherent unpredictability weakens the conventional linkage between authorial intention and expressive manifestation. As a result, it becomes increasingly difficult to locate originality within the act of expression itself, particularly where human involvement is limited to initiating or directing an automated generative process [3]. Academic responses

to this challenge reveal significant divergence. Some commentators maintain that generative AI should be treated exclusively as a tool, with authorship recognized only where human supervision is direct and outcome-determinative. From this perspective, the absence of direct expressive execution by a human author precludes copyright protection [5,6]. Other scholars argue that this view fails to account for the creative significance of upstream human activities—such as prompt formulation, iterative refinement, and output selection—that increasingly shape expressive outcomes in AI-mediated creation [4]. A further strand of scholarship advances institutional or policy-based solutions that depart entirely from conventional authorship doctrine, often grounded in concerns relating to incentives and market efficiency [7]. While such approaches may address practical regulatory challenges, they do not engage with the normative foundations that underlie copyright authorship. This Article argues that copyright need not abandon its anthropocentric foundations in order to accommodate generative AI. Instead, it advocates a refinement of authorship doctrine that foregrounds substantive human creative control as the decisive criterion for attribution, thereby providing a coherent normative basis for recognizing authorship in contexts of generative AI–mediated creation.

3. Literature Review

3.1. Human-Centered Authorship

Academic interest in copyright authorship in relation to artificial intelligence has expanded rapidly as generative technologies have evolved from experimental tools into widely adopted creative systems. Despite variations in doctrinal traditions and policy priorities, the literature largely converges on a foundational premise: copyright authorship has historically been understood as a human status. The central debate concerns how this anthropocentric framework should respond to expressive outputs produced by generative AI systems that involve differing degrees of human participation. A substantial body of scholarship continues to defend the primacy of human authorship. Rocco's analysis of Australian copyright law underscores that originality is intrinsically linked to human intellectual effort, arguing that works generated independently by AI systems are ineligible for copyright protection [1]. On this view, originality presupposes both causal human contribution and creative selection attributable to a human author. Voinea reaches a similar conclusion in his examination of U.S. and European copyright regimes, observing that courts and administrative authorities consistently reject non-human authorship and reaffirm the human-centered foundations of copyright doctrine [5]. Snihur extends this reasoning to the artistic domain, emphasizing the practical uncertainty faced by artists who rely on AI-generated images, music, or visual art, particularly where the boundary between tool-assisted creation and autonomous generation remains blurred [6]. Nayar situates these doctrinal responses within a broader normative critique, cautioning that the relaxation of authorship standards in response to technological change risks undermining the legitimacy and internal coherence of copyright law [8]. Fundamental theoretical accounts further reinforce this anthropocentric orientation. Ginsburg and Budiardjo argue that copyright authorship presupposes human judgment, personality, and accountability, contending that attributing authorship to machines would erode the normative justifications for copyright protection [2]. In a similar vein, Grimmelmann rejects the notion of computer-authored works, maintaining that recognizing AI as an author would destabilize copyright law by severing authorship from moral and legal responsibility [3]. Taken together, these contributions articulate a robust defense of human-centered authorship that resists claims of technological exceptionalism.

3.2. Alternative Perspectives on AI-Generated Works

On the other hand, a smaller but influential group of scholars challenges the categorical exclusion of AI-generated works from copyright protection. Saw and Lim contend that, under certain conditions, AI systems may operate as creative agents whose outputs merit legal recognition. Their argument is primarily grounded in incentive-based considerations, suggesting that the denial of protection for AI-generated works may distort innovation incentives and fail to reflect contemporary modes of creative production [7]. Although controversial, this position highlights the economic and policy implications of maintaining a strictly human-centered authorship model in an era of increasingly autonomous creative systems. Between these opposing poles, a growing body of scholarship rejects binary classifications of authorship in favor of more nuanced frameworks. Gooding advocates the recognition of partial or hybrid authorship, particularly in response to restrictive administrative practices that deny protection where AI involvement is substantial. He argues that such approaches risk excluding works that embody genuine human creativity manifested through unconventional forms of interaction with generative systems [9]. Similarly, Huang, Yew, and Venkatasubramanian advance a co-creation framework centered on predictability and creative control, asserting that authorship should turn on the capacity of human agents to meaningfully anticipate and influence generative outputs through prompting, iteration, and selection [4]. These accounts seek to preserve human authorship while acknowledging that creativity in AI-mediated contexts is often distributed across human and machine processes. Other scholars shift attention away from authorship attribution itself and toward the doctrinal disruptions introduced by generative AI. Lemley argues that generative AI unsettles the traditional idea-expression dichotomy by reallocating creative value from downstream expressive execution to upstream activities such as prompt design, constraint-setting, and evaluative judgment [3]. On this view, creativity increasingly resides in the generative process rather than in the final fixed output, thereby complicating doctrinal tests that rely on expression at the moment of fixation. This line of analysis is complemented by scholarship emphasizing attribution and accountability in AI-generated content, which situates authorship debates within broader concerns relating to transparency, responsibility, and governance in algorithmic systems [10]. Institutional and policy-oriented literature further illuminates these disputes. The U.S. Copyright Office has consistently reaffirmed the centrality of human authorship, particularly in its guidance on works containing AI-generated material, while acknowledging persistent uncertainty regarding the threshold of human contribution required for copyright protection [11]. Its subsequent report on generative AI training highlights systemic challenges posed by such technologies but stops short of endorsing non-human authorship [12]. At the international level, the World Intellectual Property Organization (WIPO) likewise recognizes widespread uncertainty surrounding authorship in AI-assisted creation and has cautioned against premature legal reform, instead emphasizing the need for continued policy dialogue [13]. Taken together, this body of literature reveals not only divergent views on the legal status of AI-generated works but also a deeper structural tension within copyright's conception of authorship. While most scholars reject the recognition of AI as an author, substantial disagreement persists regarding how human contributions in generative contexts should be identified, evaluated, and assessed. Strict anthropocentric approaches risk overlooking emergent forms of creativity mediated by AI, whereas expansive proposals for AI or hybrid authorship raise concerns about doctrinal coherence and normative justification. The absence of a clear metric for assessing creative control has thus produced fragmented responses across scholarly, institutional, and doctrinal domains. Building on these debates, this Article advances a control-based theory of authorship aimed at reconciling copyright's human-centered foundations with the practical realities of generative artificial intelligence.

4. Discussion and Synthesis

The preceding literature demonstrates that prevailing approaches to copyright authorship in the context of generative artificial intelligence tend to gravitate toward two inadequate extremes. On the one hand, an overly rigid adherence to traditional human authorship risks obscuring the ways in which generative technologies are reshaping contemporary creative practices. On the other hand, proposals advocating AI authorship or broad institutional substitutes threaten to detach authorship from its normative foundations. Across much of the existing discourse, a coherent framework for evaluating human contribution, one that avoids both doctrinal formalism and technological determinism, remains conspicuously absent. Foundational theoretical accounts convincingly reject the recognition of AI as an author and caution against extending authorship beyond its human core [2,3]. At the same time, a narrow focus on expressive execution as the exclusive locus of creativity fails to capture how generative systems are actually employed in modern creative workflows. In many AI-assisted practices, human creativity manifests not primarily in the final expressive output, but in the manner in which the generative process is organized and directed. Activities such as prompt design, iterative refinement, constraint-setting, and evaluative selection frequently exert substantial influence over expressive outcomes, even where those outcomes cannot be fully predicted in advance [4,3]. Conversely, approaches that attribute authorship to AI systems or rely on institutional proxies to circumvent authorship doctrine respond to legitimate concerns relating to incentives and market efficiency [7]. Yet by privileging economic output over creative agency, such approaches risk reducing copyright to a purely functional instrument, detached from its normative justifications. While these proposals may address immediate regulatory pressures, they fail to explain why copyright should continue to privilege creativity as a distinctly human endeavor. A control-based framework offers a principled means of navigating between these extremes. Rather than asking whether AI systems themselves are creative, the relevant inquiry should focus on whether a human agent has exercised substantive creative control over the generative process. This reframing preserves copyright's human-centered orientation while relocating authorship to a doctrinal space that more accurately reflects contemporary modes of creative production. Importantly, such an approach neither confers legal personhood upon AI systems nor reduces originality to mere causation or input. Within this framework, authorship should be recognized where human agents substantially structure the domain of possible outputs and exercise meaningful discretion over their realization. Substantive creative control may be evidenced through the formulation of prompts, the imposition of constraints, the selection among generated alternatives, or the orchestration of repeated interactions with a generative system. Where human involvement is limited to initiating an unconstrained generative process without subsequent creative supervision, authorship should be denied. Control thus operates not as a mechanical threshold, but as a qualitative indicator of creative agency. Institutional guidance further underscores the need for doctrinal refinement. The U.S. Copyright Office has repeatedly reaffirmed the centrality of human authorship, while leaving unresolved the question of what level of human contribution suffices in works involving AI [11]. International policy discussions likewise acknowledge ongoing uncertainty without articulating clear evaluative criteria [13]. A control-based framework directly addresses this gap by providing a doctrinally grounded method for distinguishing protected human creativity from unprotected machine generation. In doing so, it aligns copyright law with contemporary creative practice while remaining faithful to its foundational normative commitments.

5. Conclusion

Generative AI goes against traditional ideas about human creativity and authorship, which goes against the basic ideas behind copyright law. But this change doesn't mean we have to give up on the main ideas behind copyright. Instead, it says that the idea of authorship needs to be rethought to take into account changes in technology while keeping the rules and norms the same. This Article asserts that navigating authorship in the era of generative AI requires the abandonment of binary classifications in favor of a control-based framework centered on substantive human creative authority. By transitioning authorship from expressive execution to generative governance, copyright law can more accurately reflect contemporary creative practices without ceding authorship to non-human entities. This method keeps the human-centered reasoning behind copyright while giving courts, policymakers, and creators who work in more automated settings better guidance. The proposed framework also makes it clear what copyright protection does not cover. It protects recognition for truly creative human contributions made through new ways of interacting, while also making sure that works created by mostly independent systems without much human oversight are not protected. In this way, control is not a strict doctrinal test; it is a flexible evaluative principle that can change as technology changes. As generative technologies keep getting better, the main problem for copyright law won't be figuring out if machines can be authors. Instead, it will be figuring out when and how human creativity is still strong enough to need legal protection. Copyright law can maintain its fundamental principles while adapting to the realities of machine-mediated creation by emphasizing substantive creative control.

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