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Prompting Creativity: Tiered Approach to Copyright Protection for AI-Generated Content in the Digital Age

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Abstract

The rapid advancement of AI has fundamentally transformed the creative landscape, challenging traditional notions of authorship and copyright. As AI systems become increasingly capable of generating original content across diverse domains—including art, music, and literature—the legal frameworks governing intellectual property rights are struggling to keep pace. This article proposes a novel, unified, and tiered approach to copyright protection for AI prompts and AI-generated content, based on the level of human creative input required. By conducting a comprehensive analysis of legal, technical, and ethical considerations, this article explores the complex interplay among human creativity, AI technology, and intellectual property rights in the digital age. Its contributions are twofold: it develops a multifaceted framework for assessing creativity in AI prompts, addressing a critical gap in current copyright paradigms; and it proposes a tiered protection system correlating copyright scope with the degree of human creative input, offering a nuanced approach to safeguarding intellectual property in AI-generated content. This article further examines the economic and societal implications of protecting AI prompts, anticipating the emergence of new markets and professions while addressing potential abuses such as "prompt trolling." It emphasizes the delicate balance between protecting intellectual property and fostering innovation, highlighting the importance of maintaining a robust public domain to encourage experimentation and advancement in AI technologies. The findings provide a foundation for future policy development and offer practical recommendations for implementing prompt protection and registration systems.

Keywords

AI; AI-generated content; AI prompt; copyright; creative industries; intellectual property; legal framework; prompt engineering

1. Introduction

1.1. Background and Context

AI has emerged as a transformative force in creative industries, enabling the production of content that rivals human creations in complexity and originality (Guadamuz, 2017). AI-generated works now permeate various domains, including visual arts, music composition, and literary writing. These developments challenge the traditional legal frameworks of authorship and copyright, which have historically been predicated on human creativity and originality. The convergence of AI technology with creative processes necessitates a re-examination of existing intellectual property laws to address the unique challenges posed by AI-generated content (Rektorschek & Baus, 2020).

1.2. Research Gap

Despite the proliferation of AI-generated content, there is a significant gap in legal scholarship regarding the copyrightability of AI prompts—the human-crafted instructions that guide AI systems in generating content. Current copyright laws primarily focus on the end product rather than the process, leaving the legal status of AI prompts ambiguous. Under the US Copyright Act, protection extends to "original works of authorship fixed in any tangible medium of expression" (Title 17—Copyrights, 1976, § 102a). The Act defines a work as "fixed" when it is "sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration" (Title 17—Copyrights, 1976, § 101). In *Feist Publications, Inc. v. Rural Telephone Service Co.* (1991, p. 345), the Supreme Court held that "the sine qua non of copyright is originality," requiring that a work possess "at least some minimal degree of creativity."

Moreover, the spectrum of human involvement in AI-generated works ranges from minimal input to substantial creative contribution, which existing frameworks fail to adequately address. In *Burrow-Giles Lithographic Co. v. Sarony* (1884, p. 60), the Supreme Court recognized that a photograph could be copyrighted if it is "an original work of art, the product of [the photographer's] intellectual invention." This precedent suggests that works reflecting substantial creative choices by the author—even when involving technological processes—may be eligible for copyright protection.

This gap underscores the need for a nuanced approach that considers the varying degrees of human creative input in AI-assisted creations. The necessity for adaptable legal frameworks arises as technological advancements continue to challenge traditional notions of authorship and protected expression.

1.3. Significance of the Study

By addressing the complex interplay between human creativity, AI technology, and copyright law, this study contributes to the evolving discourse on intellectual property rights in the digital age. The proposed tiered approach offers a balanced framework that protects genuine creative contributions while fostering innovation and maintaining a robust public domain. The findings have practical implications for policymakers, legal practitioners, creators, and stakeholders in creative industries, providing guidance on navigating the legal landscape of AI-generated content. As AI-generated content becomes increasingly prevalent, questions arise regarding its copyright eligibility. The US Copyright Office (2023, p. 16192) has stated that when an AI

technology "receives solely a prompt from a human and produces complex written, visual, or musical works in response, the 'traditional elements of authorship' are determined and executed by the technology—not the human user." Accordingly, "the generated material is not the product of human authorship" and is not eligible for copyright protection.

1.4. Structure of the Article

The article is organized as follows: Section 2 presents the theoretical framework, conceptualizing AI prompts as a form of human creative input and discussing the evolving landscape of AI-generated content and copyright law. Section 3 explores the relationship between AI prompts and AI-generated content, including the creative process of prompt engineering and methods for quantifying human creative input. Section 4 outlines the proposed tiered protection approach, detailing each tier and the criteria for assessing human creative input. Section 5 examines the legal implications of the tiered approach, discussing copyright protection for AI prompts and the challenges of implementation. Section 6 delves into the economic and societal implications, including the impact on creative industries and innovation. Section 7 addresses challenges and limitations, such as quantifying creative input and potential abuse like "prompt trolling." Section 8 provides policy recommendations, and Section 9 concludes the study.

2. Theoretical Framework

2.1. The Evolving Landscape of AI-Generated Content and Copyright Law

The emergence of AI-generated content has challenged fundamental principles of copyright law (US Copyright Office, 2021), which traditionally center on human authorship and creativity (Wyk et al., 2023). As AI systems produce increasingly sophisticated and original works, questions arise regarding the eligibility of these creations for copyright protection, the identification of the rightful owner, and the appropriate duration and scope of such protection (Grimmelmann, 2015; Selvadurai & Matulionyte, 2020). Traditional doctrines such as the idea–expression dichotomy and the originality requirement are strained when applied to AI-generated works, necessitating a re-examination of these legal constructs (Butler, 1981; Yanisky-Ravid & Velez-Hernandez, 2018). Abbott and Rothman (2023, p. 1141) argue that extending copyright protection to AI-generated works aligns with the public interest, stating that "AI-generated works are precisely the sort of thing the system aims to protect." They further assert that "attributing authorship to AI that functionally does the work of a traditional author will promote transparency, efficient allocations of rights, and even counterintuitively protect human authors" (Abbott & Rothman, 2023, p. 1141). Accordingly, there is a need for legal clarity on rights allocation for AI-generated works, particularly concerning the economic and moral rights traditionally granted to human authors.

2.2. Conceptualizing AI Prompts as a Form of Human Creative Input

Samuelson (1986) argues that the user of a generator program is best suited to claim authorship of computer-generated works, as their role in fixing and shaping the output aligns with traditional copyright principles. Denicola (2016) also argues that copyright law should recognize a computer user as the author of AI-generated works if they initiate and guide the creative process.

AI prompts serve as the initial creative input that guides AI systems in generating content (Tang et al., 2023). They range from simple commands to intricate instructions that require significant intellectual effort and creativity (Hutson & Schnellmann, 2023). By conceptualizing prompts as extensions of human creativity (Bridy, 2012), we recognize the substantial role humans play in the AI-assisted creative process. This perspective aligns with the notion that creativity can manifest not only in the final product but also in the process and methodology used to achieve it. The interface between human creativity and AI-generated content raises challenging questions about authorship and copyright law (de Cock Buning, 2016). The US Copyright Office (2023, p. 16192) has indicated that "when an AI technology receives solely a prompt from a human and produces complex written, visual, or musical works in response, the 'traditional elements of authorship' are determined and executed by the technology—not the human user"; however, the Office acknowledges that "if a human author selects or arranges AI-generated material in a sufficiently creative way, the resulting work may be protected by copyright." Mei (2024, p. 1) argues that the current policy fails to consider the dynamic interaction between generative AI users and generative AI models, "where the users actively shape the output through an iterative process of adjustment, refinement, selection, and arrangement."

2.3. The Spectrum of Human Intervention in AI-Generated Content

Human intervention in AI-generated content exists on a spectrum—from minimal input using generic prompts to substantial creative contributions through sophisticated prompt engineering and iterative refinement (K. Lee et al., 2023). Understanding this spectrum is crucial for developing a fair and effective approach to copyright protection that acknowledges both human and machine contributions. It also highlights the need for a flexible legal framework that can accommodate varying degrees of human involvement. Legal systems worldwide are grappling with the challenges posed by AI-generated works (Geiger, 2024). In the US, the US Copyright Office (2021) has clarified that copyright protection is available only for works created by human authors. The *Compendium of U.S. Copyright Office Practices* states that "the U.S. Copyright Office will register an original work of authorship, provided that the work was created by a human being" (US Copyright Office, 2021, Chapter 300, p. 7). In *Thaler v. Perlmutter* (2023), the US District Court for the District of Columbia affirmed that works generated entirely by AI without any human involvement are not eligible for copyright protection. However, when a human provides substantial creative input—such as through detailed prompts or selection and arrangement—the resulting work might qualify for protection (Poland, 2023). This situation underscores the need for adaptable legal frameworks that recognize the varying degrees of human creativity involved in AI-assisted creations (Geiger, 2024).

2.4. AI Prompts: Ideas or Expressions?

A critical question within copyright law is whether AI prompts should be classified as unprotectable ideas or protectable expressions (Mazzi, 2024). This distinction is rooted in the idea–expression dichotomy, a fundamental principle of the copyright doctrine established in *Baker* v. *Selden* (1879) and *Feist Publications, Inc.* v. *Rural Telephone Service Co.* (1991). According to this principle, while ideas themselves are not eligible for copyright protection, the specific manner in which these ideas are expressed can be protected. AI prompts often function as instructions to guide AI systems in generating content, which suggests that they may be viewed as mere ideas or processes (Title 17—Copyrights, 1976, § 102b). However, the specific wording, structure, and creative choices embodied in a prompt might, in exceptional cases, elevate it to the level of a protectable expression.

For example, a prompt that creatively integrates unique linguistic elements, stylistic nuances, or complex thematic instructions can reflect an author's originality and personal expression. However, the common practice of keeping prompts private or undisclosed poses practical enforcement challenges, as it becomes difficult to prove that an alleged infringer had access to and copied the prompt's protectable expression. Where copyright law cannot safeguard the idea embodied in a prompt, alternative legal frameworks such as patent law (for novel inventions), trade secret law (for confidential information), or unfair competition principles (addressing misappropriation) may protect the underlying idea conveyed by such prompts.

2.5. Legal Doctrines Relevant to AI Prompts

Applying traditional legal doctrines to AI prompts presents complex challenges that necessitate a reevaluation of established principles. The originality requirement in copyright law mandates that a work must possess a minimal degree of creativity and originate from an author to be eligible for protection. This requirement is generally satisfied if the work is independently created and reflects some creativity. In the context of AI prompts, the question arises as to whether the prompt demonstrates sufficient creativity to meet this threshold, considering that some prompts may be highly functional or generic in nature.

The fixation requirement stipulates that a work must be captured in a tangible medium of expression, allowing it to be perceived, reproduced, or otherwise communicated for more than a transitory period (Title 17— Copyrights, 1976, § 102(a)). While AI prompts are often input directly into AI systems and may be transient, they can meet this requirement if recorded in any form, such as text files, code repositories, or even screenshots.

Additionally, doctrines such as the merger doctrine and *scènes à faire* limit protection for expressions that are standard, necessary, or inevitable in a given context. The merger doctrine posits that when an idea can be expressed in only a limited number of ways, the idea and expression merge, and copyright protection does not extend to prevent others from using the necessary expression of the idea. Similarly, *scènes à faire* refers to elements that are customary or expected in a particular genre or field; such elements are considered unprotectable because they are indispensable for effective communication within that context. This could impact the protectability of prompts that rely on standard phrases or conventions inherent to AI interaction.

Therefore, determining the eligibility of AI prompts for copyright protection requires a nuanced application of these legal doctrines. It involves assessing whether a prompt embodies original expression or merely conveys unprotectable ideas and whether it incorporates standard or necessary elements that are essential for the AI's operation. This complex legal analysis highlights the challenges of applying traditional copyright principles to the evolving landscape of AI-assisted creation.

3. The Relationship Between AI Prompts and AI-Generated Content

3.1. AI Prompts as the Seed of AI-Generated Content

AI prompts serve as the foundational seed from which AI-generated content emerges, playing a pivotal role in shaping the creative output of AI systems. The quality, complexity, and specificity of these prompts significantly influence the nature, originality, and alignment of the resulting content with the human

creator's vision (Mazzi, 2024). For instance, a detailed prompt that specifies genre, style, thematic elements, and desired emotional responses can guide an AI system to produce content that closely mirrors the creator's vision. This direct correlation between the prompt and the generated content underscores the importance of recognizing prompts as a form of creative expression deserving of legal protection.

The human input encapsulated in the prompt not only initiates the creative process but also imparts uniqueness and originality to the AI-generated work. The prompt acts as a conduit for the creator's ideas, stylistic preferences, and artistic direction, effectively bridging human creativity with machine execution (Tang et al., 2023). By acknowledging the integral role of prompts in the creative process, we can better appreciate the collaborative dynamic between human authors and AI systems in generating new media content.

3.2. The Creative Process of Prompt Engineering

Prompt engineering is a sophisticated discipline that combines elements of natural language processing, domain expertise, and creative writing (Brown et al., 2020). It involves crafting prompts that effectively communicate the creator's intentions to the AI system, utilizing techniques such as few-shot learning (Wyk et al., 2023), chain-of-thought prompting, and iterative refinement to optimize the quality of AI outputs. This process requires significant intellectual effort, creativity, and technical skills, reflecting a high level of human creative contribution.

The prompt engineer must possess a deep understanding of the AI system's capabilities and limitations, as well as the nuances of language and context. Crafting an effective prompt often involves iterative experimentation, where the engineer refines the prompt based on the AI's responses, continually adjusting wording, structure, and content to achieve the desired outcome. This iterative nature of prompt engineering highlights the dynamic interplay between human creativity and AI capabilities, underscoring the substantial human input involved in the creation of AI-generated content.

3.3. Quantifying Human Creative Input in AI Prompts

Developing robust methods for quantifying human creative input in AI prompts is essential for implementing a tiered protection approach. Creativity is inherently subjective, but several metrics can be employed to assess the originality and complexity of prompts. Prompt complexity, as a metric, can be evaluated through word count, syntactic structure, and the use of advanced linguistic features like metaphors or analogies. A more complex prompt typically indicates a higher degree of creative effort.

Specificity and uniqueness can be assessed through semantic similarity analyses, comparing the prompt to existing prompts to determine its distinctiveness. Prompts that incorporate unique combinations of concepts or instructions demonstrate greater originality. Domain-specific knowledge is another important factor, involving the use of specialized terminology or concepts that require expertise in a particular field. This integration of specialized knowledge reflects a deeper level of creative input.

The iterative development process is also a key consideration. Tracking the number of refinement iterations and the nature of modifications made to improve the AI's output can provide insights into the creative effort

invested. A prompt that has undergone extensive refinement suggests a significant commitment to achieving a particular creative vision.

By adopting a multidimensional approach that combines these metrics, we can achieve a comprehensive assessment of human creative input in AI prompts. This assessment is crucial for determining the appropriate level of copyright protection under the proposed tiered system, ensuring that protections are aligned with the actual creative contributions involved (Burylo, 2022).

3.4. Music Generation and AI Prompts

Music generation through AI presents unique considerations for copyright protection due to the complex interplay between linguistic instructions and musical output. Prompts in this domain may include detailed musical instructions that require substantial knowledge of music theory, composition techniques, and stylistic nuances (Sturm et al., 2019). For example, a prompt might specify chord progressions, rhythmic patterns, instrumentation choices, or emotional themes. The AI system then interprets these instructions to generate musical compositions that align with the specified parameters (Ferreira et al., 2023).

The relationship between prompts and generated music is often less direct than in text or image generation, as AI systems make numerous compositional decisions that are not explicitly dictated by the prompt. This complexity makes it challenging to assess the extent of human creative input based solely on the prompt. Evaluating creativity in music-generation prompts involves analyzing both the linguistic creativity of the prompt and the musical sophistication that it conveys. This process necessitates expertise from both language and music professionals to fully appreciate the nuances of the prompt and its influence on the generated content.

Recognizing the depth of human contribution in such prompts supports the argument for granting appropriate levels of copyright protection. It acknowledges that the prompt engineer's specialized knowledge and creative choices significantly shape the AI-generated music, warranting legal recognition and protection of their intellectual efforts.

4. The Tiered Protection Approach

To effectively delineate the varying degrees of human involvement in AI-generated content, a structured approach is necessary. The following tiered framework categorizes levels of creative input, establishing a basis for determining the extent of copyright protection appropriate to each case.

Tier 1—minimal human input—covers scenarios where AI-generated content results from minimal human input, such as using basic or predefined prompts. The level of copyright protection for both the prompts and generated works is limited or nonexistent. This aligns with the principle that mere ideas or instructions without substantial creative expression are not eligible for copyright protection.

Tier 2—moderate human creativity in prompt design—encompasses cases where the content results from prompts demonstrating a moderate level of human creativity. These may include custom-tailored prompts requiring domain knowledge or specific creative direction. A limited form of copyright protection could be

considered for both the prompts and resulting works, acknowledging the creative effort without granting extensive rights that could hinder innovation.

Tier 3—substantial human creative contribution—encompasses works generated from prompts involving substantial human creativity, such as complex, multistep prompts or those requiring extensive iterative refinement. Both the prompts and generated works in this category might be eligible for a higher level of copyright protection. This recognizes significant human authorship in shaping the AI-generated content.

Assessing the level of human creative input in AI prompts necessitates a nuanced and multifaceted approach that considers various dimensions of creativity. One critical criterion is the originality and uniqueness of the prompt, which involves evaluating its novelty in comparison to existing prompts. This assessment seeks to determine whether the prompt introduces new ideas or approaches that distinguish it from conventional or commonly used instructions, thereby reflecting the creator's innovative thinking.

Another significant factor is the complexity and sophistication of the prompt. This entails analyzing the structural and linguistic intricacies, such as the use of advanced language constructs, elaborate sentence structures, and integration of multiple layers of instructions or constraints. A prompt exhibiting high complexity often indicates substantial intellectual effort and a deep understanding of both the subject matter and capabilities of the AI system.

Domain-specific expertise is also a crucial aspect of creative input assessment. This criterion examines the extent to which the prompt incorporates specialized knowledge from a particular field, demonstrating the creator's proficiency and ability to apply technical concepts creatively. By leveraging domain-specific terminology and methodologies, the prompt transcends generic instructions and contributes to more specialized and meaningful AI-generated content.

The iterative refinement process is another essential consideration in evaluating creative input. This involves assessing the development trajectory of the prompt, including modifications and enhancements made over time. A prompt that has undergone significant iterative refinement reflects a sustained creative effort to optimize performance and achieve desired outcomes, highlighting the creator's dedication to honing their craft.

Additionally, recognizing the creative intent and artistic direction behind the prompt is vital. By capturing the nuances of the creator's intent, we gain insight into the depth of creativity invested in the prompt and its potential impact on the AI-generated content.

Collectively, these criteria form a comprehensive framework for evaluating human creative input in AI prompts. By applying this multifaceted approach, we can more accurately determine the appropriate tier of protection for each prompt based on the extent and nature of the creativity involved. This assessment is essential for ensuring that the tiered protection system operates fairly and effectively, incentivizing genuine innovation while maintaining a balance with public domain interests.

5. Legal Implications of the Tiered Approach

5.1. Copyright Protection for AI Prompts

Extending copyright protection to AI prompts involves navigating a complex legal landscape, as it requires reconciling traditional copyright principles with the novel characteristics of AI-assisted creation. The originality requirement in copyright law stipulates that a work must possess a minimal degree of creativity and originate from a human author to be eligible for protection (Miller, 1993). In the context of AI prompts, this requirement is typically met when the prompt embodies creative choices that reflect the author's personal expression. For instance, a prompt that employs unique phrasing, incorporates innovative concepts, or demonstrates artistic flair may satisfy the originality threshold (*Bleistein v. Donaldson Lithographing Co.*, 1903; Burylo, 2022).

The fixation requirement mandates that a work be captured in a tangible medium of expression to be eligible for copyright protection (Title 17—Copyrights, 1976, § 101, § 102(a)). AI prompts are often input digitally and can be easily recorded in text files, code repositories, or other electronic formats. However, these fixations are not usually publicly disclosed or published.

A further challenge lies in distinguishing between unprotectable ideas and protectable expressions, particularly given the functional nature of prompts (*Baker v. Selden*, 1879; Title 17—Copyrights, 1976, § 102(b)). Since AI prompts often serve as operational instructions to guide the AI system, they may be perceived as unprotectable ideas, methods, or processes. To qualify for copyright protection, the prompt must exhibit original expression in its specific wording, structure, or creative presentation, transcending mere functionality.

The scope of protection must be carefully delineated to avoid overreach and prevent the monopolization of basic prompting techniques essential for AI operation. Overly broad protection could stifle innovation by restricting access to fundamental methods necessary for engaging with AI systems (Samuelson, 2006). Therefore, legal frameworks must balance the protection of genuine creative contributions with the need to maintain a vibrant public domain that supports ongoing technological advancement (Yu, 2016).

5.2. Extending Protection to AI-Generated Content Based on Prompt Complexity

Applying the tiered approach to AI-generated content acknowledges the significant human creative input involved in the prompting process. Proponents argue that recognizing the role of prompt engineering aligns with the foundational principles of authorship and is crucial for promoting progress in creative industries (E. Lee, 2024; Wang, 2024). By correlating the level of copyright protection with the complexity and creativity of the prompt, the tiered system seeks to incentivize human contribution while accommodating the collaborative nature of AI-assisted creation.

Implementing this system, however, poses several challenges. Determining the point at which a prompt's formulation transitions from functional instruction to creative expression is complex, as it involves subjective judgments about creativity and originality. The iterative nature of AI creation further complicates this assessment. As prompts are refined and adjusted based on the AI's outputs, the authorship of the final content may involve multiple layers of human input, raising questions about the scope of protection and appropriate attribution of rights.

Additionally, the non-linear relationship between prompts and outputs can make it difficult to establish a direct causal link between the human contribution and AI-generated content. The AI system's autonomous decision-making processes may introduce elements that are not directly traceable to the prompt, challenging traditional notions of authorship and originality.

Addressing these challenges requires the development of clear legal standards and guidelines to assess the creative input involved and delineate the boundaries of protection appropriately. Such standards should account for the unique characteristics of AI-generated content and provide mechanisms for fair attribution and enforcement of rights, ensuring that the legal framework effectively supports innovation while safeguarding the interests of creators.

5.3. Challenges to Implementing a Tiered System

Despite the potential benefits of a tiered approach to copyright protection for AI-generated content, several significant challenges hinder its implementation. One of the foremost obstacles is the complexity involved in accurately and consistently assessing human creative input. Evaluating creativity is inherently subjective and requires sophisticated tools and methodologies capable of capturing the nuances of human ingenuity in prompt design. Developing reliable assessment criteria and ensuring their consistent application across diverse contexts pose considerable difficulties, especially given the rapid evolution of AI technologies.

Another challenge arises from the technological advancements in AI, which may render established assessment criteria obsolete at a swift pace. The dynamic nature of AI development necessitates frequent updates to the evaluation framework to remain relevant and effective, potentially undermining the stability of the protection system.

Enforcement difficulties also present a significant barrier to implementing the tiered system. Detecting unauthorized use of protected prompts is technically challenging due to the ease with which prompts can be altered or disguised within AI systems. The intangible nature of prompts and the complexity of tracking their usage across various platforms complicate efforts to monitor compliance and address infringement.

Legal disputes are another concern, particularly regarding the classification of prompts into appropriate tiers. Disagreements over the level of creativity involved in a prompt may lead to protracted litigation, increasing costs for all parties and burdening the judicial system. The subjective nature of creativity assessments exacerbates this issue, as different evaluators may reach divergent conclusions based on the same set of facts.

International harmonization poses additional challenges, given that copyright laws and attitudes toward AI-generated content vary widely across jurisdictions. Establishing a consistent and coherent tiered protection system globally is complicated by these differences, which can lead to legal uncertainties for creators and users operating in multiple countries. This lack of uniformity may hinder the effectiveness of the tiered system and create obstacles to international collaboration and innovation.

Market impact is another critical consideration, as the tiered system may inadvertently lead to market distortions or monopolistic practices. Entities with significant resources could accumulate extensive portfolios of protected prompts, potentially creating barriers to entry for smaller players and reducing

competition. This concentration of control over valuable prompts might stifle innovation and limit diversity in AI-generated content.

Ethical considerations also emerge in the implementation of the tiered system. There is a risk that the system could exacerbate existing inequalities in access to AI technologies, favoring those with greater resources and technical expertise. This could lead to biases in the types of content produced and limit the participation of underrepresented groups in AI-assisted creative endeavors.

Addressing these multifaceted challenges requires collaborative efforts among legal experts, technologists, policymakers, and stakeholders in creative industries. Developing adaptive regulatory frameworks that can evolve alongside technological advancements is essential. Such frameworks should strive to balance the protection of genuine creative contributions with the promotion of innovation, equitable access, and the maintenance of a robust public domain. Through ongoing dialogue and cooperation, it is possible to navigate these complexities and realize the potential benefits of the tiered protection system.

6. Economic and Societal Implications

6.1. Incentivizing High-Quality Prompt Creation

The implementation of a tiered copyright protection system for AI-generated content introduces significant economic incentives for the development of high-quality, creative AI prompts. By recognizing prompts as protectable works, the proposed framework establishes a legal basis for their monetization. This legal recognition could catalyze the emergence of specialized marketplaces where prompt engineers can sell or license their creations (Wyk et al., 2023), similar to how stock photography platforms and software code repositories operate today. Such marketplaces would not only provide revenue streams for creators but also foster a competitive environment that encourages innovation in prompt design.

The potential for economic reward is likely to stimulate interest in prompt engineering as a distinct profession. As the demand for sophisticated prompts grows, so too will the need for individuals skilled in crafting them. This could lead to the development of specialized training programs, certifications, and academic courses focused on prompt engineering and AI interaction design. Universities and professional institutions might offer curricula that blend computer science, creative writing, and domain-specific knowledge to prepare individuals for careers in this emerging field.

Moreover, the prospect of financial gain and professional recognition may drive innovation in prompt design techniques. Prompt engineers might experiment with new methodologies, such as integrating interdisciplinary concepts or utilizing advanced linguistic structures to enhance AI outputs. This innovation could lead to breakthroughs in AI-assisted content creation, pushing the boundaries of what AI systems can achieve, as well as opening up new possibilities in various creative industries.

6.2. Impact on AI-Assisted Creative Industries

The proposed copyright framework has the potential to significantly reshape the landscape of AI-assisted creative industries, including media, advertising, entertainment, and design. Traditional workflows within these

industries may need to adapt to incorporate prompt engineering as a critical and distinct phase of the creative process. Content creation teams might begin to include prompt engineers alongside writers, designers, and artists, fostering a multidisciplinary approach that blends technical expertise with artistic vision.

This integration could necessitate the development of new collaborative models. For instance, in a media organization, journalists and prompt engineers might work together to generate AI-assisted news reports or feature articles, combining journalistic integrity with AI efficiency. In advertising, creative directors might collaborate with prompt engineers to develop AI-generated campaign concepts that align with brand strategies.

The recognition of prompts as copyrightable works also encourages the reevaluation of value attribution in creative projects. Traditional notions of authorship and ownership may shift as prompt engineers' contributions become more central to the final output. This shift could require adjustments in reward structures, compensation models, and career paths within creative industries. Companies might need to develop new policies for crediting and remunerating prompt engineers, potentially leading to the establishment of royalty systems or profit-sharing arrangements.

Furthermore, the elevation of prompt engineering could influence educational and professional development within creative fields. As the importance of AI in content creation grows, professionals may seek to enhance their skills in AI interaction and prompt design, leading to a more technologically adept workforce. This evolution reflects a broader trend toward the convergence of technology and creativity, redefining the skillsets valued in the creative economy.

6.3. Potential Effects on Innovation and Competition

The framework may foster a trend toward specialization and differentiation within the market. Companies and individuals might increasingly concentrate on developing expertise in specific types of prompts or creative domains. This specialization could result in the emergence of a more diverse and nuanced marketplace, with niche players offering highly refined and domain-specific prompting solutions. Such a trend has the potential to enhance the overall quality and effectiveness of AI-assisted creative outputs across various fields.

However, this move toward specialization carries the risk of monopolistic practices. Large companies with significant resources could accumulate vast libraries of protected, high-quality prompts, thereby creating formidable barriers to entry for smaller competitors. This concentration of intellectual property might lead to market dominance and stifle competition, particularly if smaller entities are unable to access or develop comparable prompt libraries. The risk is that innovation could be hindered if a few dominant players control essential resources, limiting the diversity of creative contributions in the AI ecosystem.

The framework is likely to reignite debates regarding the balance between open-source collaboration and proprietary development in the AI field. This tension could lead to parallel ecosystems: open prompt libraries fostering communal innovation alongside commercial offerings providing premium proprietary prompting solutions. The coexistence of these approaches may drive innovation in both spheres, potentially leading to a more robust and diverse AI ecosystem.

Interestingly, the recognition and protection of prompts as creative works may encourage sharing and building upon others' ideas. With clear attribution and potential economic benefits, prompt creators might be more willing to share their innovations, leading to the cross-pollination of ideas that could accelerate the overall pace of innovation in the field (Wyk et al., 2023). The assurance of recognition and the possibility of licensing income may incentivize creators to contribute to communal resources.

The global nature of AI development introduces another layer of complexity into the framework. As different jurisdictions adopt varying approaches to AI prompt protection, it could lead to the emergence of "prompt havens"—regions with favorable legal frameworks that attract prompt engineering talent and companies. This could reshape global competition in the AI sector, potentially leading to innovation clusters in regions with the most conducive legal and economic environments for prompt development.

Moreover, the framework may encourage increased interdisciplinary collaboration among AI researchers, legal experts, and creative professionals. This cross-pollination of ideas and expertise can foster innovation at the intersection of these fields, leading to novel approaches that combine technological, legal, and creative insights.

Perhaps most significantly, the framework could precipitate a shift in the conception and pursuit of obtaining a competitive advantage in the AI industry. Companies' competitive edge may increasingly depend on their ability to create or acquire high-quality prompts, rather than solely on the sophistication of their AI models or the size of their datasets. This shift could democratize competition to some extent, allowing smaller, more agile companies with innovative prompting strategies to compete effectively with larger, more established players.

The proposed framework for protecting AI prompts and generated work has the potential to profoundly influence innovation and competition in the AI-assisted creative sector. While it offers opportunities for accelerated technological progress, market diversification, and new forms of collaboration, it also presents challenges related to market concentration and global regulatory disparities. As the AI landscape continues to evolve, careful monitoring and adaptive policymaking are crucial to ensuring that this framework fosters a vibrant, competitive, and innovative ecosystem that benefits a wide range of stakeholders.

7. Challenges and Limitations

7.1. Difficulties in Quantifying Creative Input in Prompts

Quantifying the creative input involved in crafting AI prompts presents significant challenges due to the inherently subjective and context-dependent nature of creativity. Assessing originality and creativity is complex, as it often relies on qualitative judgments that can vary widely among evaluators. Cultural biases may influence perceptions of what constitutes creativity, with different societies valuing certain forms of expression over others. This variability complicates the establishment of standardized assessment frameworks that are fair and applicable across diverse contexts.

Domain specificity further adds to the complexity of quantification. Prompts designed for specialized fields, such as medical diagnostics or legal analysis, require expert knowledge that may not be readily apparent to evaluators without expertise in those areas. Assessing the creative input in such prompts

necessitates interdisciplinary understanding, combining insights from both the domain in question and AI prompt engineering.

The rapidly evolving capabilities of AI systems also challenge the development of consistent assessment methodologies. As AI technology advances, the baseline for what is considered a sophisticated or creative prompt shifts. Techniques that were once innovative may become standard practice, requiring continuous updates to assessment criteria. This dynamism makes it difficult to create stable benchmarks for creativity over time.

Balancing the assessment of originality with practical effectiveness is another nuanced challenge. A prompt may be highly original but produce suboptimal or impractical AI outputs. Conversely, a prompt that leverages well-established techniques might yield highly effective results. Developing methodologies that account for both the novelty of the prompt and its functional efficacy requires a delicate balance, potentially combining computational analyses of linguistic features with expert evaluations of performance outcomes.

7.2. Potential for Abuse and "Prompt Trolling"

While the introduction of legal protection for AI prompts holds promise for fostering innovation and recognizing creative contributions, it also raises significant concerns regarding potential system abuse. A particularly troubling issue is the emergence of "prompt trolling," a practice analogous to patent trolling, where entities attempt to claim broad rights over generic prompts with the primary intention of extracting licensing fees or settlements. This practice can stifle innovation, impose unnecessary legal burdens on legitimate prompt engineers and AI developers, and ultimately hinder progress in the field.

The potential for abuse manifests in several forms, each presenting unique challenges to the integrity of the proposed protection system. One primary concern is the registration of broad or generic prompts to claim rights over common prompting techniques. Such an approach could effectively monopolize fundamental aspects of prompt engineering, restrict their use by other practitioners, and decelerate the pace of innovation. Another form of abuse involves making slight modifications to existing prompts to claim derivative rights, potentially leading to a proliferation of nearly identical protected prompts and creating a complex web of overlapping rights. Additionally, there is the risk of strategic patenting of prompt techniques specifically to block competitors, a practice that can concentrate power in the hands of a few large entities and create significant barriers to entry for new players in the field.

To address these potential abuses and maintain the integrity of the prompt protection system, a multifaceted approach incorporating various safeguards and strategies is necessary. Establishing a high threshold for prompt protection that requires demonstrable creativity and originality can serve as the first line of defense against overly broad or generic claims. Implementing a rigorous examination process for prompt registration, akin to that used for patent applications, could mitigate the risk of frivolous or overly broad claims.

The creation of a centralized database of protected prompts could further facilitate prior art searches, making it easier to identify and challenge attempts to register prompts that lack novelty or infringe upon existing protections. This database would serve as a valuable resource for prompt creators and examiners, enhancing transparency and reducing the likelihood of inadvertent infringements.

Developing clear guidelines for what constitutes fair use in prompt engineering is crucial for balancing protection with the need for ongoing innovation. These guidelines would delineate acceptable practices for building upon existing prompts and using protected prompts in non-commercial or experimental contexts, thereby preserving the collaborative and iterative nature of AI research and development.

Establishing penalties for prompt registration attempts made in bad faith could serve as a deterrent to prompt trolling and other forms of system abuse. Encouraging the development of open-source prompt libraries can also play a significant role in establishing prior art and preventing the monopolization of basic prompting techniques. Designing legal frameworks that allow for prompt use in experimental contexts without incurring liability is equally important.

7.3. Balancing Protection With Public Domain Interests

Maintaining a robust public domain is crucial for fostering innovation and ensuring that the advancement of AI technologies benefits society as a whole. Overly broad or prolonged protection of AI prompts could lead to the monopolization of fundamental techniques, restricting access for researchers, developers, and smaller entities. This monopolization poses a risk of stifling creativity, slowing technological progress, and exacerbating inequalities within the industry.

To balance individual rights with collective interests, implementing shorter protection terms is advisable. Shorter terms reflect the rapid pace of technological change in AI, ensuring that protected prompts enter the public domain in a timely manner. This approach prevents long-term monopolies over techniques that may become foundational for future developments.

Fair-use provisions play a pivotal role in preserving access to protected prompts for purposes that serve the public good. By allowing use in contexts such as academic research, education, and certain non-commercial applications, fair-use policies enable the continued exploration and refinement of AI technologies. These provisions help maintain an environment where knowledge can be shared and built upon, which is essential for innovation.

Encouraging contributions to open-source libraries further strengthens the public domain. Incentives for creators to share their prompts, such as recognition, community support, or alternative forms of compensation, can promote a culture of collaboration. Open-source repositories provide valuable resources for learning, experimentation, and development, lowering barriers to entry and fostering diversity within the AI field.

Developing policies that carefully delineate the scope of protection is also important. Clear definitions of what constitutes a protectable prompt, along with guidelines for assessing creativity and originality, help prevent overreach. By protecting truly innovative prompts while keeping fundamental techniques accessible, the legal framework can support both the rights of individual creators and the collective advancement of AI technologies.

Balancing protection with public domain interests requires ongoing dialogue among stakeholders, including creators, users, policymakers, and legal experts. By considering the needs and perspectives of all parties, it is

possible to craft regulations that promote innovation, fairness, and the widespread dissemination of knowledge in the rapidly evolving landscape of AI.

8. Policy Recommendations

To effectively implement the proposed tiered protection system, it is essential to establish a comprehensive framework for registering and protecting valuable AI prompts. This framework should provide clear guidelines and mechanisms that correspond to the level of creative input involved in the prompt's creation. One of the key components is the inclusion of disclosure requirements, mandating that creators disclose key elements of their prompts when seeking protection. This disclosure should be sufficient to assess the prompt's originality and creativity without necessitating the revelation of proprietary details that could compromise competitive advantages.

Another critical aspect of the framework is setting appropriate protection terms that reflect the rapid evolution of AI technology. Shorter, renewable protection periods are advisable, as they acknowledge the fast-paced advancements in the field and prevent the undue locking up of valuable prompts for extended durations. This approach encourages continual innovation and allows for periodic reassessment of the prompt's relevance and significance in light of new developments.

Incorporating fair-use provisions is also vital to balance the rights of prompt creators with the broader interests of society. Allowing the use of protected prompts for purposes such as research, education, and non-commercial activities promotes knowledge dissemination and supports the collaborative advancement of AI technologies. These provisions help prevent the stifling of academic inquiry and ensure that legal protections do not hinder the growth of the field.

Establishing standardized licensing frameworks within the registration system can facilitate prompt licensing transactions and reduce legal complexities. By providing clear, consistent terms and conditions, the framework enables creators and users to engage in licensing agreements with greater confidence and efficiency. This standardization can help streamline the commercialization process, making it more accessible to a wider range of participants, including smaller entities and individual creators.

Finally, the framework should include robust dispute resolution mechanisms tailored to the unique challenges of prompt-related conflicts. Specialized arbitration systems or dedicated tribunals with expertise in AI and intellectual property law can offer efficient and informed resolutions to disputes, alleviating the burden on traditional courts. Such mechanisms can provide quicker, more specialized outcomes that are better suited to the technical nuances of prompt-related issues.

By integrating these elements, the proposed framework aims to create a balanced and effective system for registering and protecting valuable AI prompts. It seeks to incentivize creativity and innovation while ensuring that protections are not overly restrictive or detrimental to the broader AI community. Through careful design and implementation, this framework can support the sustainable growth of AI-generated content and contribute to a dynamic and equitable creative landscape.

While many jurisdictions grant copyright automatically upon creation, this registration-based approach can be voluntary or complementary—similar to existing US voluntary registration—and may serve to clarify rights, streamline enforcement, and provide procedural advantages. In countries bound by the Berne Convention, no formalities are required for copyright; thus, the proposed registration framework would be an optional mechanism for those seeking additional legal certainty and easier enforcement.

Promoting the development and use of open-source prompt libraries helps maintain a rich public domain. Incentives for creators to contribute to these libraries, such as recognition programs or tax benefits, can encourage collaborative innovation. Developing interoperability standards ensures that prompts can be used across different AI systems, preventing monopolization and fostering competition.

Given the global nature of AI development, international cooperation is vital. Harmonizing legal frameworks across jurisdictions can reduce conflicts and promote consistent protection standards. Collaborative efforts through international organizations can facilitate the development of guidelines and best practices.

9. Conclusion

The rapid evolution of AI technologies necessitates a re-examination of traditional copyright frameworks to address the unique challenges posed by AI-generated content. This study proposes a unified, tiered approach to copyright protection for AI prompts and AI-generated works, grounded in the level of human creative input. By developing a multifaceted framework for assessing creativity, we address critical gaps in current intellectual property paradigms.

The proposed tiered protection system offers a balanced approach, safeguarding genuine creative contributions while fostering innovation and maintaining a robust public domain. It acknowledges the significant role of human creativity in AI-assisted processes and provides practical solutions to the complex legal and ethical issues that arise. The policy recommendations outlined serve as a foundation for future legislative efforts and international cooperation.

This study contributes to the evolving discourse on AI and intellectual property rights, emphasizing the importance of adaptive and nuanced legal frameworks in the digital age. As AI continues to reshape the creative landscape, ongoing research, interdisciplinary collaboration, and thoughtful policy development are essential. By embracing a flexible approach that recognizes both human and machine contributions, we can foster a rich and diverse ecosystem of innovation, ensuring that AI enhances rather than supplants human creativity.

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Conflict of Interests

The author declares no conflict of interests.

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