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ARTICLE

# Digital Alchemy? Rethinking Copyright in the Age of AI-Generated Content: Lessons and Reflections from the AI Value Chain

Xin Zhang[1], Jinghe Fan[2] and Danyang Guo[3]

[1]University of International Business and Economics, China, [2]University of Oxford, United Kingdom and [3]Shenzhen University, China
**Corresponding author:** Danyang Guo; Email: guodanyang@szu.edu.cn

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**Abstract**
The emergence of generative artificial intelligence (generative AI) has profoundly reshaped content creation by lowering marginal costs, altering the role of human creators, and restructuring industrial processes. These shifts pose three critical challenges for intellectual property (IP) frameworks: redefining creative behaviors in human–AI collaborations, sustaining incentives for innovation, and addressing gaps in copyright mechanisms. Against this backdrop, the Beijing Internet Court (BIC) issued China's first judicial ruling on the copyrightability of AI-generated images in 2023. The court held that AI-generated content (AIGC) could qualify for copyright if there is demonstrable human intellectual input and originality. However, the ruling also emphasized the need for case-by-case assessments, particularly in hybrid human–AI creative processes. This landmark decision has sparked intense debate over whether and how AIGC should be considered as a "work" under copyright law, with particular focus on requirement of human authorship and the threshold of originality. In addition, a systematic analysis of the AIGC value chain highlights the far-reaching implications of human authorship claims for various stakeholders, including creators, AI developers, prompt engineers, and end users. To address these emerging legal and ethical issues, this Article proposes two key reforms: first, extending the scope of fair use under Article 24 of China's Copyright Law to account for AI-generated works, and second establishing a "whitelist" mechanism in the Regulations for the Implementation of the Copyright Law. These measures aim to balance the protection of human creativity, ensure equitable value distribution among stakeholders, and foster sustainable innovation in the AI-driven creative ecosystem.

**Keywords:** Generative artificial intelligence (AI); copyright protection; AI value chain; AI-generated content (AIGC); fair use doctrine; transformative use

## A. Introduction

The rapid advancement of generative AI—driven by increasingly large datasets, more complex models, and growing computational power—marks a significant leap in the field of AI[1] Unlike traditional narrow and analytical AI systems, generative AI demonstrates remarkable commercial potential and practical advantages, successfully bridging the gap between technological research

[1]*See* RISHI BOMMASANI ET AL., ON THE OPPORTUNITIES AND RISKS OF FOUNDATION MODELS 4 (2021), https://stanford.edu/~cpiech/bio/papers/foundationModels.pdf.

and commercial deployment.[2] However, this profound transformation presents three theoretical challenges to the intellectual property (IP) legal framework. First, the concept of "creative activity" calls for redefinition. As human–machine collaboration intensifies, the legal system faces a critical challenge in clarifying creative authorship and establishing clear rights and responsibilities for those engaged in AI-assisted creation. Second, the proliferation of AI-generated content (AIGC) challenges the foundational incentive structures of IP law. The traditional mechanisms designed to foster innovation through rights protection now need to adapt to a more complex ecosystem of creativity. This transition calls for a nuanced legal framework that preserves the innovation-driving function of IP systems and ensures an equitable balance of interests among original creators, AI model developers, and end users. Finally, the existing incentive framework calls for significant recalibration to address the dual challenges posed by AIGC. This recalibration unfolds in two distinct phases: the initial data acquisition for AI development and the subsequent utilization of AI-generated works. The data acquisition phase raises complex issues of copyright authorization and fair compensation for training data usage. Meanwhile, the content utilization phase introduces novel challenges in determining copyright status, allocating ownership rights, and attributing liability for AI-generated works. The existing legal framework has proven insufficient to address these emerging issues, particularly in ensuring adequate protection for the rapidly evolving AI industry.[3] Crafting this revised legal framework is not merely a technical task for lawmakers; it is a pivotal factor determining the AI industry's future direction and sustainable development.

Based on this background, this Article advances a novel framework for reconciling copyright law with the use of generative AI by introducing three key arguments. First, it proposes the "Dual-Purpose Theory of AI Creation," which calls for a differentiated standard of protection based on the user's purpose: professional creators who use AI for expressive or their creative purposes should meet existing copyright thresholds, while ordinary users employing AI for functional or efficiency-enhancing purposes may fall under a more flexible fair use regime. Second, it recommends the judicial expansion of Article 24 of China's Copyright Law to cover AI training and generation activities that qualify as transformative uses. This includes the establishment of a regulatory "whitelist" that offers practical guidance for lawful data use and model training. Third, from an industrial value-chain perspective, the Article proposes adopting a "Human Intellectual Achievement" standard as the basis for allocating rights and responsibilities within the AIGC ecosystem, balancing the protection of original authors with the need to incentivize technological innovation. These three complementary approaches aim to construct a more adaptive copyright paradigm for the age of human–AI collaboration—one that protects creative labor, encourages responsible AI development, and supports the long-term sustainability of the creative industries.

To analyze these arguments, this Article consists of five parts. Part B begins by applying an industrial economics framework to empirically analyze the threefold structural transformations brought about by generative AI technology in content production, namely: the transformation of production costs, the shifting role of human creators, and the evolution of industrial organization. Part C conducts a comparative legal analysis, dissecting judicial reasoning in landmark cases—the Chinese case *Li v. Liu* and the U.S. case *Zarya of the Dawn*—to reveal significant differences in normative approaches toward the copyrightability of AIGC across jurisdictions. In Part D, the study introduces a jurisprudential method grounded in the "AI as a creative tool" theory, establishing a coherent framework for determining the copyrightability of AIGC through two

[2] *See* Deloitte's State of Generative AI in the Enterprise Quarter Three Report, Now Decides Next: Moving from Potential to Performance 8–9 (2024), https://www2.deloitte.com/content/dam/Deloitte/us/Documents/consulting/us-state-of-gen-ai-q3.pdf.

[3] *See* Zhang Ping, *Rengong Zhineng Shengcheng Neirong Zhuzuoquan Hefaxing De Zhidu Nanti Jiqi Jiejue lujing* (人工智能生成内容著作权合法性的制度难题及其解决路径) [*The Institutional Problems and Solutions of Copyright Legality of Artificial Intelligence-Generated Content*], 42 Falv Kexue (Xibei Zhengfa Daxue Xuebao) (法律科学(西北政法大学学报) [Nw. Univ. Polit. Sci. L.] 18, 18 (2024) (China).

distinct yet interconnected criteria: the objective standard of originality and the subjective degree of human control over the creative process. Part E systematically assesses how recognizing the copyrightability of AIGC affects the rights and obligations of four key stakeholders within the AI ecosystem: authors of existing creative works, model developers, prompt engineers, and end-users. Lastly, Part F offers concrete recommendations for institutional reform, advocating the flexible application of a "transformative use" standard and proposing a regulatory "whitelist" mechanism for AI training activities, thereby fostering a dynamic equilibrium between technological innovation and IP protection.

## B. Generative Artificial Intelligence and the Transformation of Content Production

Generative AI is fundamentally reshaping content production in unprecedented ways. This transformation represents not just a technological advancement, but a fundamental change in how creative works are conceived, produced, and distributed. Analysis of generative AI's impact reveals three core dimensions of change: the transformation of production costs, the shifting role of human creators, and the evolution of industrial organization. These dimensions form the essential framework for understanding generative AI's revolutionary impact on content creation.

First, generative AI has revolutionized content creation by fundamentally altering the cost framework of information production and dissemination. This transformation operates across at both the distribution and production levels.[4] At the distribution level, algorithmic recommendation technology has enabled precise and scalable applicable dissemination by leveraging machine learning models for user preference modeling, real-time behavioral data analysis, and automatic content feature extraction. This has dramatically reduced the traditionally high costs associated with manual editing and curation, including labor, time, and opportunity costs. With marginal costs approaching zero, AI-driven distribution has transcended the geographical limitations and capacity constraints that once hindered the reach and volume of traditional information dissemination.

At the information production level, generative AI harnesses pre-trained large models to systematically encapsulate and model human knowledge, resulting in three major breakthroughs. One breakthrough lies in its ability to transform unstructured information into computable vector representations, thereby providing a structured form of knowledge.[5] A further breakthrough involves the discovery of knowledge correlations, as deep learning techniques—particularly attention mechanisms—uncover intrinsic connections between knowledge units.[6] Equally significant is its capacity for the generative application of knowledge, facilitating the recombination and innovative expression of ideas based on existing information. These advances have dramatically reduced the marginal cost of content creation to unprecedented levels while multiplying creative efficiency by orders of magnitude compared to manual methods.[7]

Crucially, this cost-structure transformation extends beyond quantitative metrics—it represents a qualitative shift in the creative paradigm from linear, single-entity production to

[4]Ryan Abbott & Elizabeth Rothman, *Disrupting Creativity: Copyright Law in the Age of Generative Artificial Intelligence*, 75 Fla. L. Rev. 1141, 1187–88 (2023).

[5]*See* Mengting Wan, Tara Safavi, Sujay Kumar Jauhar, Yujin Kim, Scott Counts, Jennifer Neville, Siddharth Suri, Chirag Shah, Ryen W. White, Longqi Yang, Reid Andersen, Georg Buscher, Dhruv Joshi & Nagu Rangan, TnT-LLM: Text Mining at Scale with Large Language Models 1 (2024), https://arxiv.org/pdf/2403.12173.

[6]*See* Lingxi Xiao, Muqing Li, Yinqiu Feng, Meiqi Wang, Ziyi Zhu & Zexi Chen, Exploration of Attention Mechanism-Enhanced Deep Learning Models in the Mining of Medical Textual Data 1, 5 (2024), https://arxiv.org/pdf/2406.00016.

[7]*See* Stanford Univ. Human-Centered Artificial Intelligence, Artificial Intelligence Index Report 2024 216, 274 (2024), https://hai.stanford.edu/assets/files/hai_ai-index-report-2024-smaller2.pdf.

interactive, collaborative human–machine creation.[8] This opens up new frontiers of possibility for content generation. The implications of this dual cost restructuring for the traditional content industry are both profound and far-reaching. The drastically reduced marginal costs enable large-scale content production and precise distribution, catalyzing the industry's digitalization and adoption of intelligent technologies. At the same time, this transformation poses novel challenges to existing IP regimes, creative ethics, and market order. Therefore, the legal system must adapt to strike a delicate balance between fostering innovation and safeguarding rights and interests in this new era.

Second, the emergence of generative AI has reshaped the role of human participants and their degree of control within the information ecosystem. This transformation is evident not only at the micro-level—in the specific stages of creative production—but also at the macro-level, reflecting a broader evolution of the information ecosystem itself. As a result, it poses fundamental challenges to the core theories and normative framework of IP law. From a micro-level perspective, the longstanding human dominance in the production, dissemination, and editing of information is undergoing a qualitative shift. Under traditional creative models, humans, as the sole intelligent agents, retained comprehensive decision-making power over every stage of creation—from topic selection and conceptual design to final expression. Yet with the introduction of AI, the creative process has been fragmented into a new framework: gathering training data, conducting pre-training, performing fine-tuning and alignment adaptation, formulating prompts, executing and processing via the model, and ultimately generating content.[9] Under this framework, while humans continue to initiate the creative process, they cannot precisely control the specific form, content characteristics, or final presentation of the work.[10] This erosion of control not only challenges the traditional copyright principle of protecting intellectual works but also complicates the determination of authorship and the allocation of associated rights.

From a macro-level perspective, the evolution of internet-based information production has undergone distinct phases. In the Web 1.0 era, standardized production by professional institutions and individuals prevailed, resulting in relatively clear ownership structures. By contrast, the Web 2.0 era ushered in user-generated content (UGC), which decentralized and fragmented copyright issues. In the current Web 3.0 era, AIGC has further blurred the boundaries of authorship.[11] Supported by deep learning techniques, AI systems can now learn and imitate human creative styles and characteristics, while also independently producing original work. This enhanced generative capacity has led to a steady increase in AI-generated output within the overall information ecosystem, posing unprecedented challenges to the traditional IP regime—particularly regarding the identification of protectable subject matter, the establishment of rights-holders, and the balancing of interests.

Third, the advent of generative AI has fundamentally reorganized both the structure and production paradigm of the content industry. This reorganization breaks with the traditional

[8]*See* Ding Wenjie, *Tongyong Rengong Zhineng Shiye Xia Zhuzuoquan Fa De Luoji Huigui — Cong "Gongjulun" Dao "Gongxianlun"* (通用人工智能视野下著作权法的逻辑回归—从"工具论"到"贡献论") [*The Logical Regression of Copyright Law Under the Perspective of General Artificial Intelligence: From "Instrumentalism" to "Contributivism"*], 5 Dongfang Faxue (东方法学) [Oriental Law] 94, 102 (2023).

[9]*See* Wayne Xin Zhao et al., A Survey of Large Language Models 4, 17–44 (2023), https://doi.org/10.48550.arXiv.2303.18223 (surveying the full development and deployment pipeline of large language models, encompassing data collection and pre-training (§ 4-4.3), instruction tuning and alignment adaptation (§5), and prompt-based utilization for content generation (§6)).

[10]*See* U.S. Copyright Off., Copyright and Artificial Intelligence, Part 2: Copyrightability 6, 16, 19–20 (2025), https://copyright.gov/ai/Copyright-and-Artificial-Intelligence-Part-2-Copyrightability-Report.pdf (noting that AI-generated outputs "may include content that was not specified and exclude content that was" and that identical prompts generating multiple different outputs "further indicates a lack of human control").

[11]*See* Li Baiyang, *Rengong Zhineng Shengcheng Neirong (AIGC) De Jishu Tezheng Yu Xingtai Yanjin* (人工智能生成内容(AIGC)的技术特征与形态演进) [*The Technical Features and Aromorphosis of Artificial Intelligence Generated Content (AIGC)*], 40 Tushu Qingbao Zhishi (图书情报知识) [Documentation Info. & Knowledge] 66, 68 (2023) (China).

"individual workshop" model, giving rise to a large-scale, socially collaborative framework distinguished by clear divisions of labor and diverse forms of cooperation.[12] Beyond simply altering the external arrangement of production, this shift more profoundly affects creative incentives and value-allocation processes.

From an organizational perspective, content production has evolved into a multi-tiered industry chain defined by clearly delineated roles. At the upstream level, human creators of original works supply their intellectual efforts as training data, thereby establishing the mapping between prompts and key features of a work. Midstream actors—AI model developers—invest considerable capital in pre-training models, granting them generalization capabilities and emergent properties. These models may be offered in open-source or proprietary forms, resulting in diverse business models and market structures.[13] Downstream participants include model optimizers—responsible for fine-tuning and re-training, prompt engineers—focused on maximizing model performance, and ultimately the end users of the content—ranging from individual consumers to professional institutions.[14] The emergence of these distinct roles marks a fundamental shift from individually driven creation to increasingly industrialized and large-scale production.

Moreover, from a production process perspective, the traditional linear creation model has evolved into a networked system of collaborative production.[15] In this system, various participants form complex interactions: original works provide foundational data for model training, model developers transform these data into deployable AI capabilities, and downstream developers apply technical optimizations and innovative methods to produce distinct content outputs. This collaborative framework not only increases production efficiency but also opens new avenues for value creation.

More importantly, this transformation in organizational structure has triggered a significant shift in creative incentive mechanisms. Under the traditional model, content creators mainly relied on direct monetization of their works. In the new industrial system, however, the ways in which original works create value have expanded: beyond conventional content monetization, works can also serve as training data, model rules, or creative paradigms—each offering additional potential for profit.[16] This evolution in incentive structures poses pressing challenges to IP regimes, particularly in determining how to safeguard the rights of original authors while fostering AI-based innovation. Equally crucial is establishing a fair distribution of benefits, ensuring that each participant in the value chain receives compensation commensurate with their contribution. Resolving these questions will directly shape the future trajectory of the content industry.

[12]*See* Yu Yang, *Xinjishu Yu Jiuzhidu: AIGC Shidai De Neirong Shehuihua Dashengchan He Chuangzuozhe Quanyi Baohu Zhidu Biange* (新技术与旧制度: (AIGC) 时代的内容社会化大生产和创作者权益保护制度变革) [*New Technology and Old System: The Social Production of Content and the Reform of the Protection System of Creators' Rights in AIGC Era*], *in* Zhineng Xinjiyuan: Shengchengshi Rengong Zhineng De Fazhan Yu Zhili (智能新纪元：生成式人工智能的发展与治理) [The New Era of Intelligence: The Development and Governance of Generative Artificial Intelligence] 19, 24–25 (Zhang Xin ed., 2024).

[13]*See* Statista, Artificial Intelligence: In-Depth Market Analysis 2–3 (2024), https://www.statista.com/study/50485/in-depth-report-artificial-intelligence/.

[14]*See* Mckinsey Digital, Exploring Opportunities in the Generative AI Value Chain 5 (2023), https://www.mckinsey.com/~/media/mckinsey/business%20functions/quantumblack/our%20insights/exploring%20opportunities%20in%20the%20generative%20ai%20value%20chain/exploring-opportunities-in-the-generative-ai-value-chain.pdf.

[15]*See* Daniel J. Gervais, *The Machine as Author*, 105 Iowa L. Rev. 2053, 2057, 2070–72 (2020) (observing that the traditional "binary paradigm," which treats machines as either mere tools or generators of pre-programmed outputs, presupposes a linear causal chain from human to output that "is outdated"; that deep learning introduces autonomous decision-making which "breaks the causal link between humans … and the output," thereby dissolving the linearity of the conventional creation model; and that GANs, operating through "a constant feedback loop that increases the quality of outputs," exemplify the shift toward a networked and collaborative production structure).

[16]*See* Bertin Martens, *Economic Arguments in Favour of Reducing Copyright Protection for Generative AI Inputs and Outputs* 9–10, 14 (Bruegel, Working Paper No. 09/2024, 2024) (observing that the standard business model for media products has been sales for human consumption, and that GenAI has opened additional channels for existing works to generate value, in particular as training data for AI models and as inputs for hybrid human-machine production, though Martens himself argues that licensing fees for such uses amount to economically inefficient overprotection of copyright).

Ultimately, this transformation in organizational structures and production processes underscores the defining traits of content creation in the AIGC era: a shift from individual creation to social collaboration, from single-value extraction to multidimensional value generation, and from closed to open innovation. The following discussion will illustrate how these transformations necessitate appropriate adjustments to legal frameworks.

### C. An Overview of the Beijing Internet Court's Approach to AIGC Copyright

On November 27, 2023, the BIC gave the first-of-its-kind judgment on the copyrightability of an AI-generated image. In the case *Li v. Liu*, the plaintiff used Stable Diffusion, which is an open-source AI model enabling text-to-image transformation, to generate an image of a woman portrait with the title "Tenderness Sent by the Spring Br0eeze."[17] This image was generated based on multiple textual prompts positively and negatively describing what the plaintiff intended to have. This image was published by the plaintiff's account on one Chinese social media platform—Xiaohongshu—with the hashtags such as "#AIillustration." Without permission from the plaintiff, the defendant further downloaded this image through Internet search and used it as an illustration to accompany an original poem written by her. The image was then uploaded on a different website without showing the watermark of the plaintiff's name. A lawsuit for infringement of copyright was then brought by the plaintiff.

In this case, the key issue is whether the generated image constitutes a work that is protected under the Copyright Law. The BIC confirmed the copyrightability of the generated image at issue. According to Article 3 of the Copyright Law in China, a copyrightable work needs to satisfy four conditions: (1) it is a human intellectual achievement; (2) it belongs to the fields of literature, art and science; (3) it has originality; (4) it can be fixed in certain forms.

The BIC put its emphasis of analysis on the elements of originality and intellectual achievement. The BIC confirmed there were intellectual achievements by the plaintiff. As contended by the BIC, the prompts input by the plaintiff have influenced the artistic type, the subject, details of the character, the environment, the presentation of the character, and relevant parameters. Based on the initial image, the plaintiff input more prompts iteratively and finally chose one image that met expectations. The whole process—from conceiving the image at the very beginning to the moment of selecting the final version of the image—has demonstrated the plaintiff's intellectual achievement.[18]

Regarding originality, the BIC stated that originality requires the work "to be independently created by the author and embody their unique personal expression." This judgment distinguishes between "mechanical intellectual achievements" and "work with originality." If works completed according to a certain sequence, formula, or structure will yield the same results when produced by different individuals, it cannot be considered creative. Works will be copyrightable when they "reflect the author's personalized expression." The BIC did not suggest personalized expressions can be easily recognized in all cases of generative AI. Instead, it particularly stressed that the copyrightability of hybrid work combining both humans and AI's contribution had to be determined on a case-by-case basis. The more distinctive and detailed humans' descriptions or requirements for generative AI models are, the better they can demonstrate there are personalized expressions. In this case, the Court opined that the plaintiff has shown her own aesthetic choices

[17] *See* Li v. Liu (李某某诉刘某某), Beijing Hulianwang Fayuan (北京互联网法院) [Beijing Internet Court], Jing 0491 Min Chu No. 11279 (Nov. 27, 2023) (China), https://english.bjinternetcourt.gov.cn/pdf/BeijingInternetCourtCivilJudgment112792023.pdf. For the most recent cases supporting judicial protection of AIGC in China, please refer to Lin v. Changshu Qinhong Real Estate Development Co., Ltd. (林某诉常熟市琴宏房地产开发有限公司), Changshu People's Court of Jiangsu Province (江苏省常熟市人民法院), Su 0581 Min Chu No. 6697 (Oct. 18, 2024) (China); Wang v. Technology company (王某诉某科技公司), People's Court of Donghu High-Tech Development Zone (东湖高新区法院), Yue 0192 Zhi Min Chu No. 968 (Jan. 15, 2025) (China).

[18] *See id.* at 11.

and arrangements through iteratively refining the generated image, inputting prompts, and adjusting parameters.[19]

In the judgment, the BIC underscored the aim of copyright law to encourage and incentivize creation of works.[20] The BIC drew the development of photography as an example. It opined that the potent function of contemporary technology of photography does not negate humans' intellectual input and originality in photographs. It could be observed that the more developed technologies are, the less intellectual input human creators will have. Nevertheless, this fact does not inhibit the copyright law from admitting human intellectual inputs if there is any and encourage creations by granting copyright. The lack of free will for AI models rendered it unable to become legal entities and authors of generated images. This fact further implies that human users of the AI models own the copyright of the generated work.

As discussed below, this judgment has ignited intense debates among scholars in China. In the US, it is also controversial whether AIGC could be copyrightable and its authorship can be attributed to human users of generative AI. According to the U.S. Copyright Office, the comic book *Zarya of the Dawn*, which was created by Ms. Kashtanova by using Midjourney, cannot be registered as copyrightable work. To create images, Ms. Kashtanova even provided hundreds or thousands of descriptive prompts to Midjourney until she obtained one version that could perfectly match her vision. Even so, the U.S. Copyright Office argued that the contribution of Ms. Kashtanova has not possessed the minimum creative spark required for copyrightability. The U.S. Copyright office considered that Ms. Kashtanova has sufficient control over the results generated as one particular prompt may generate different outputs.[21]

## D. Updating and Adapting China's Copyright Law to Address AIGC Challenges

### *I. Challenges in Defining AIGC as Copyrightable Work*

Although the BIC has acknowledged granting copyright protection to AIGC, the academic community is divided on this issue. This debate centers on whether AIGC can constitute a "work" under copyright law. Based on interpretations of Article 3 of the Copyright Law,[22] the elements required to define a "work" can be summarized as fourfold: (1) a product of human intellectual achievement; (2) an objectively perceivable external expression; (3) a result in the fields of literature, art, or science; and (4) originality. Disagreement primarily focuses on whether AI can be considered a creative subject and whether AIGC meets the threshold of originality, thus giving rise to two contrasting positions: the affirmative stance advocating copyright protection for AIGC and the opposing stance rejecting it.

#### *1. Affirmative View: AIGC as a Subject of Copyright Protection*

Proponents of the affirmative view argue that AIGC can qualify for copyright protection. However, scholars differ on the specific criteria for recognizing AIGC, reflecting individual interpretations of authorship and originality standards.

[19]*See id.* at 12.

[20]*See id.* at 13.

[21]*See In re Zarya of the Dawn* (U.S. Copyright Off. Feb. 21, 2023) (cancellation decision), https://www.copyright.gov/docs/zarya-of-the-dawn.pdf. Letter from Robert J. Kasunic, Associate Register of Copyrights and Director of the Office of Registration Policy & Practice, to Van Lindberg concerning Kristina Kashtanova's authorship of her work titled *Zarya of the Dawn* (Feb. 21, 2023) (on file with the U.S. Copyright Office), https://www.copyright.gov/docs/zarya-of-the-dawn.pdf [hereinafter *Zarya of the Dawn Letter*].

[22]*See* Zhuzuoquan Fa (著作权法) [Copyright Law] (promulgated by the Standing Comm. Nat'l People's Cong., Sep. 7, 1990, amended Nov. 11, 2020, effective Jun. 1, 2021), Order No. 62, 1, 2, art. 3 (China) ("Works, as used in this law refers to intellectual achievements in areas such as literature, arts, and sciences, that have originality, which can be fixed in certain forms.").

One proponent, Professor Yi, argues that AIGC should be recognized as a "statutory work." He points out that authorship is typically relevant for determining who owns the rights, but the fundamental issue for copyright protection is whether the work is original.[23] Consequently, Yi proposes that if AIGC exhibits the same characteristics as human-created works and meets the criteria of "independent creation" and "minimal creativity," it should be considered original regardless of whether it was created by a human.[24] According to Yi, the deep learning capabilities of AI and its emulation of neural networks allow AIGC to exhibit a creativity level comparable to human works.[25] Therefore, this "highly realistic" emulation fulfills the minimal creativity requirement and equates AI-driven creativity with traditional human-derived creativity. Under this framework, Yi asserts that even though the creator is not human, AIGC aligns with the copyright definition of a "work" and should thus qualify for copyright protection.

In contrast to Yi, Professor Li further examines the nature of AI's agency and advocates for the "AI as a Creative Tool" theory. He argues that AIGC is effectively produced by humans through the use of AI as a tool,[26] and therefore, its qualification as a "work" should be assessed according to copyright standards applicable to human-created works.[27] In other words, as long as the content meets the criteria of "independent creation" and "minimal creativity," it can be regarded as a work under copyright law. Also, Li supports that the originality of AIGC originates from the design of developers and users, rather than the autonomous creation of the machine itself. Thus, the originality standards for AIGC should be consistent with those for human-made works.

Professor Wu's perspective is somewhat aligned with Professor Li's, although he believes that while AI cannot serve as a creative subject, its output can still meet the standard of "original expression" and, thus, be eligible for copyright protection.[28] Additionally, Wu argues that copyright ownership of AIGC should belong to humans.[29] Similarly, Professor Xiong refers that discussions on the copyright eligibility of AIGC must adhere to the premise of a "human creator." He suggests that, whether in terms of original expression or in the context of market circulation, the application of copyright law depends on human creative activity.[30] Therefore, AIGC should only be regarded as a protected work under copyright law if it embodies a "unique expression" reflective of human creativity.

### 2. Opposing View: AIGC as an Ineligible Subject for Copyright Protection

Conversely, scholars supporting the opposing view assert that the concept of "work" inherently requires a creative subject, which must be a natural person. They argue that the main purpose of copyright law is to incentivize human creativity and protect creators' rights, with such protection intended exclusively for "humans." As a result, AI lacks the legal status eligible to be an author under copyright law, and AIGC cannot qualify for copyright protection.

[23] *See* Yi Jiming, *Rengong Zhineng Chunagzuowu Shi Zuopin Ma?* (人工智能创作物是作品吗?) [*Is Creation Generated by Artificial Intelligence Work?*], 5 Xibei Zhengfa Daxue Xuebao (西北政法大学学报) [Nw. Univ. Polit. Sci. Law] 137, 139 (2017).

[24] *See id.* at 138.

[25] *See* Ye Zongzong, *Rengong Zhineng Yu Zhuzuoquan* (人工智能与著作权) [*Artificial Intelligence and Copyright*], 25 Fazhi Yu Shehui (法制与社会) [Law & Soc.] 292, 293 (2016).

[26] *See* Li Yang & Li Xiaoyu, *Kangde Zhexue Shidian Xia Rengong Zhineng Shengchengwu De Zhuzuoquan Wenti Tantao* (康德哲学视点下人工智能生成物的著作权问题探讨) [*Discussion on the Copyright of Artificial Intelligence Products under the Perspective of Kant's Philosophy*], 9 Faxue Zazhi (法学杂志) [Law Sci. Mag.] 45, 51 (2018).

[27] *See id.* at 50-51.

[28] *See* Wu Handong, *Rengong Zhineng Shidai De Zhidu Anpai Yu Falv Guizhi* (人工智能时代的制度安排与法律规制) [*Institutional Arrangements and Legal Regulation in the Age of Artificial Intelligence*], 5 Xibei Zhengfa Daxue Xuebao (西北政法大学学报) [Nw. Univ. Polit. Sci. Law] 128, 131 (2017).

[29] *See id.* at 132.

[30] *See* Xiong Qi, *Rengong Zhineng Shengcheng Neirong De Zhuzuoquan Rending* (人工智能生成内容的著作权认定) [*Is Artificial Intelligence Generated Content Copyrightable*], 3 Zhishi Chanquan (知识产权) [Intell. Prop.] 3, 8 (2017).

One prominent figure in this camp is Professor Wang, who emphasizes that copyright law grants rights such as reproduction, distribution, and public performance to authors to motivate their creativity and innovation. He argues that AI, however, operates in a purely mechanical manner, relying on algorithms and data rather than demonstrating "active intelligence" or unique personal expression.[31] Therefore, it does not fulfill the basic requirements for authorship under copyright law.

Moreover, some scholars contend that even if authorship is not a concern, AIGC lacks the distinctiveness and ideational depth essential for a work. Dr. Zhu asserts that copyright law's protective scope encompasses an author's "moral rights," which depend on the subjective expression of the creator.[32] Because AI lacks independent will and subjective thought, it cannot generate works that qualify for copyright protection.[33] This view aligns with the legislative purpose of copyright law, which fundamentally seeks to protect and encourage the expression of human ideas and subjective creativity. In this perspective, AI-generated outputs, being devoid of human ideation and creative subjectivity, cannot qualify as a subject of copyright protection.

To briefly summarize, the divergence between these views primarily hinges on the interpretation of originality and the requirement for human authorship. Supporters of copyright protection for AIGC suggest that, if the generated content meets objective originality standards, it should not matter whether it was created by a human or an AI. In contrast, opponents argue that only works reflecting human intellectual achievement and subjective expression meet the legislative intent of copyright law, thus excluding AIGC from the scope of copyright protection.

## II. Analyzing the Copyright Protection Potential of AIGC as Copyrightable Work

### 1. Limiting Copyright Authorship to Humans: Defining AI as a Creative Tool

This Article supports the affirmative position, advocating for viewing AI as a tool for creation. When AIGC meets the originality requirement, it should qualify as a "work" and thus be eligible for copyright protection.

One key point in this argument is the purpose of copyright law itself. The aim of copyright law is to encourage the creation and dissemination of creative works,[34] and it provides protections specifically for human creators—whether individuals, legal entities, or organizations.[35] Therefore, under the framework of copyright law, only human creative activity is currently eligible for protection. While there have been contradictory court rulings on the copyright eligibility of AIGC in China,[36] both decisions held that copyright law should be interpreted to limit the concept of an

[31] *See* Wang Qian, *Lun Rengong Zhineng Shengcheng De Neirong Zai Zhuzuoquan Fa Zhongde Dingxing* (论人工智能生成的内容在著作权法中的定性) [*Qualitative Research on the Content of Artificial Intelligence in Copyright Law*], 5 Xibei Zhengfa Daxue Xuebao (西北政法大学学报) [Nw. Univ. Polit. Sci. Law] 148, 150 (2017).

[32] *See* Yang & Xiaoyu, *supra* note 26, at 54.

[33] *See id.* at 46.

[34] *See* Zhuzuoquan Fa (著作权法) [Copyright Law] (promulgated by the Standing Comm. Nat'l People's Cong., Sep. 7, 1990, last amended Nov. 11, 2020, effective Jun. 1, 2021), Order No. 62, art. 1 (China)

> ("This law is formulated in accordance with the Constitution in order to protect the copyrights of authors of literary, artistic, and scientific works, as well as rights related to copyrights, to encourage the creation and dissemination of works beneficial to the construction of culture in the spirit of socialism and material culture, and to stimulate the development and flourishing of Socialist culture and scientific endeavors.").

[35] *See id.* art. 11 paras. 1, 2 ("The copyright belongs to the author, unless otherwise provided for in this law. The natural person creating a work is the author.").

[36] *See* Li v. Liu (李某某诉刘某某), Beijing Hulianwang Fayuan (北京互联网法院) [Beijing Internet Court], Jing 0491 Min Chu No. 11279 (Nov. 27, 2023) (China), https://english.bjinternetcourt.gov.cn/pdf/BeijingInternetCourtCivilJudgment112792023.pdf; *Shanghai Xinchuanghua wenhua Fazhan Youxian Gongsi v. AI Gongsi (Huaming)* (上海新创华文化发展有限公司诉AI公司(化名)) [*Shanghai Xinchuanghua Culture Co. v. AI Co. (alias)*], Guangzhou Hulianwang Fayuan (广州互联网法院) [Guangzhou Internet Court], Yue 0192 Min Chu 113 (Feb. 8, 2024) (China).

"author" to human beings or human collectives. In other words, even if an AI system is involved in the creation process, the "author" should be a person or a group of people.

Despite the complex "black box" nature of AI algorithms—which can introduce unpredictability into the content generation process—AIGC is not created in isolation from human influence. The AI creation process is not simply a one-step "input command–output content" mechanism. Instead, it often involves substantial human intervention, including feeding data into the system, selecting, arranging, and guiding the AI's output to align with the user's creative intent. This process is distinct from traditional software use, as AI's vast data-processing capabilities and powerful computational strength enhance its ability to produce a broad range of outputs.

Using the "idea–expression dichotomy" from copyright theory, it is important to recognize that copyright law protects human expression rather than ideas alone. In this context, AI operates as an extension of the human creator's expressive capabilities. When users provide more specific, precise, and detailed instructions to the AI, the resulting content is closer to their intended expression and better reflects their creative vision. As the AI responds to clear directives from the user, the final output reflects the user's creative intent, even if the AI contributes technical capabilities.

By viewing AI as a tool rather than as an independent creator, it refers that AIGC remains tied to human authorship. The user plays an active role in shaping the content produced by AI, using it much like an advanced instrument for creative expression. This human influence justifies treating the user's input as a form of "authorship" under copyright law. Consequently, when AIGC meets originality requirements, it should qualify as a copyrightable work, with the copyright vested in the person guiding the AI's actions.

### 2. Determining the Originality of AIGC For Eligibility of Copyright Protection

This Article also supports that AIGC meets the minimum originality requirement for copyright protection by fulfilling two key conditions: independent creation and minimal creativity. Copyright law generally establishes originality by requiring (1) that a work be independently created, not simply a reproduction of existing works, and (2) that it demonstrates some degree of creativity, even if minimal.[37] In both respects, AIGC aligns closely with the standards traditionally applied to human-created works.

First, the notion of independent creation does not imply that a creator operates in isolation from existing knowledge. Human creators frequently draw upon prior works, reinterpreting and reorganizing them into new expressions. Similarly, AIGC relies on data inputs and algorithms to create content based on specific prompts and instructions. While AIGC uses data to "learn" patterns and structures, the final content it produces is not simply a replication of the data it has analyzed. Instead, AI reconfigures this information into new forms, effectively mirroring the human process of learning, adapting, and synthesizing. This process supports the "AI as a tool" approach, where AIGC can be regarded as an extension of human creativity through technological assistance, satisfying the requirement of independent creation.

Second, copyright law's creativity threshold is minimal. The law is not concerned with high artistic or aesthetic value; instead, it requires only that a work exhibits a basic level of creativity.[38] This low threshold serves the broader purpose of copyright law, which is to encourage a wide range of creative expression by protecting diverse types of content. If copyright law were to impose an elevated creativity standard—such as requiring a work to achieve a level of artistic excellence—

[37] *See* Wang Qian, Zhuzuoquan Fa (著作权法) [Copyright Law] 26 (2d ed. China Renmin Univ. Press 2023).

[38] *See* Robert Kirk Walker & Ben Depoorter, *Unavoidable Aesthetic Judgments in Copyright Law: A Community of Practice Standard*, 109 Nw. U. L. Rev. 361, 361–62 (2015).

many basic yet original forms of expression would be excluded from protection, contradicting the law's intent to foster creativity in various forms and mediums.

AIGC meets this minimal creativity standard. Through its data-driven processes, AI can generate distinct expressions by selecting, organizing, and designing content in ways that differ from existing works. In cases where AI is used to make specific decisions on prompts, parameters, or settings, the generated output often reflects a level of choice and judgment analogous to human creativity. Case *Li v. Liu*[39] illustrates this point: the plaintiff's choices in using prompts and parameters to guide the AI generated an image that demonstrated individual aesthetic judgment and creative expression. Thus, AIGC can fulfill the creativity requirement when it embodies intentional selection and arrangement, even if the choices are executed through AI.

In conclusion, AIGC fulfills the originality requirement for copyright protection. By satisfying the conditions of independent creation and minimal creativity, AIGC achieves a level of uniqueness and creative expression that qualifies it as copyrightable. When humans use AI to make deliberate, creative choices in generating content, the resulting works reflect a blend of human intention and AI's capabilities, thereby deserving copyright protection.

## E. Implications of the BIC Ruling for the AIGC Supply Chain

The eligibility of AIGC for copyright protection focuses on the output of generative AI. Its influence, however, extends to various stakeholders across generative AI supply chain. This supply chain, often complex, can be broken down into multiple stages.[40] This Article will focus on several major steps, such as converting existing creative works into data, training and fine-tuning generative AI models based on datasets, and deploying systems to generate output. Within these processes, it is worth exploring the potential impact of recognizing human authorship of AIGC on different stakeholders, including the human authors of existing creative works, generative AI developers and service providers, prompt engineers, and users of generative AI.

### *I. Human Authors of Existing Creative Works*

Massive amounts of data have enabled the transforming capacity of generative AI. Composing training data, existing works are primarily created by human beings without input from generative AI. By scraping creative works that are disseminated on the Internet, developers and service providers of generative AI transform creative works into quantified and computer-readable data that can be further fed into model training.[41]

Building on the knowledge commons of existing works, transformative capabilities of generative AI bring about more accessible creative toolkits and increasing inspirations to the public. It could be seen as an upheaval brought by generative AI to pre-existing human authors. On the one hand, certain human authors may think of generative AI and prompt-based generation as a potential opportunity to reach new audiences.[42] On the other hand, however, they may also find it concerning when generated works flood into the Internet and cause more particular actions of infringement without permission, such as generating direct copies of pre-existing works or creating derivative works with certain transformations.

[39]*See* Li v. Liu (李某某诉刘某某), Beijing Hulianwang Fayuan (北京互联网法院) [Beijing Internet Court], Jing 0491 Min Chu No. 11279 (Nov. 27, 2023) (China), https://english.bjinternetcourt.gov.cn/pdf/BeijingInternetCourtCivilJudgment112792023.pdf.

[40]*See* Katherine Lee, A. Feder Cooper & James Grimmelmann, *Talkin' 'Bout AI Generation: Copyright and the Generative AI Supply Chain*, J. Copyright Soc'y 251, 285 (2025).

[41]*See id.* at 30.

[42]*See* Vittoria Benzine, "*A.I. Should Exclude Living Artists from Its Database," Says One Painter Whose Works Were Used to Fuel Image Generators*, Artnet (Sept. 20, 2022), https://news.artnet.com/art-world/a-i-should-exclude-living-artists-from-its-database-says-one-painter-whose-works-were-used-to-fuel-image-generators-2178352.

Apart from particular actions of infringement, it is also worth considering the slippery slope effect of training generative AI on existing works.[43] Unrestricted scraping of data can lead to widespread unauthorized imitation of pre-existing copyrighted works. The more popular and established the existing human authors are, the more people would like to use their names and works as input and prompts to generative AI. For example, Greg Rutkowski is an established digital artist who paints multiple fantastical illustrations for games. His name was used as a prompt by users of Stable Diffusion more than 93,000 times, ranking much higher than Michelangelo and Leonardo da Vinci. He kept finding works generated by AI which were not created by him but attributed to his name.[44] Rutkowski and many other artists are willing to reach a wider audience by uploading their works on online platforms. Nevertheless, it seems like they are punished by AI developers who can scrape their work to train AI models. False attribution can cause confusion to artists and their unique and personal creative expressions and interfere with their moral rights. Significantly increasing identical copies or derivative works without authorization may also constrain the opportunities for existing human authors to demand a royalty for licensing their copyrighted works.[45] Following this, the lack of fair compensation for existing human authors and reasonable restrictions of usage may decrease their motivation to share or even create their high-quality works to the public.[46] In the long run, the availability of high-quality existing works for use as training data will diminish and lead to less nuanced and capable AI models.[47]

There is no denying that all these concerns should be acknowledged and carefully considered during policymaking and adjudication. Nevertheless, granting copyright protection to users of generative AI when they contribute intellectual input may not necessarily come into conflict with the aim of protecting incentives for creation among existing human authors.

Regarding potential infringement, generative AI does not make current rules of copyright law irrelevant. One controversial scenario would be generating derivative works via AI by users. In practice, unlicensed derivative works could still be considered as copyrightable if authors of derivative works also contribute their own intellectual input apart from that of the original authors.[48] This intends to redress subsequent infringement to derivative works by third parties. The original author can also sue the author of derivative work for infringement.

Service providers of generative AI may also bear the liabilities of infringement if AI systems generate identical copies or only with limited original features when users input prompts with the names of existing works or authors. In 2024, the Guangzhou Internet Court (GIC) ruled that a service provider of text-to-image generative AI infringed the rights to reproduction and adaptation of the well-known character "Ultraman."[49] The AI service at issue generated Ultraman images identical to protected ones without preemptive permission. Additionally, it could create

[43] *See* Celeste Shen, *Fair Use, Licensing, and Authors' Rights in the Age of Generative AI*, 22 NW. J. TECH. & INTELL. PROP. 157, 176 (2024).

[44] *See* Melissa Heikkilä, *This Artist Is Dominating AI-Generated Art. And He's Not Happy About It*, MIT TECH. REV. (Sept. 16, 2022), https://www.technologyreview.com/2022/09/16/1059598/this-artist-is-dominating-ai-generated-art-and-hes-not-happy-about-it/.

[45] *See* Shen, *supra* note 43, at 176.

[46] *See* SAFFRON HUANG & DIVYA SIDDARTH, GENERATIVE AI AND THE DIGITAL COMMONS 4 (2023), https://arxiv.org/pdf/2303.11074.

[47] *See* Ilia Shumailov, Zakhar Shumaylov, Yiren Zhao, Nicolas Papernot, Ross Anderson & Yarin Gal, *AI Models Collapse When Trained on Recursively Generated Data*, 631 NATURE 755, 758–59 (2024).

[48] *See, e.g.*, *Nanjing Sheyi Wangluo Keji Youxian Gongsi v. Shanghai Wangtuo Wangluo Keji Youxian Gongsi* (南京设易网络科技有限公司诉上海望拓网络科技有限公司) [*Nanjing Sheyi Network Tech. Co. v. Shanghai Wangtuo Network Tech. Co.*], Renmin Fayuan Anlixuan (人民法院案例选) [Selected Cases of the People's Courts], Vol. 11 (Jiangsu High People's Ct. 2019) (China).

[49] *See Shanghai Xinchuanghua wenhua Fazhan Youxian Gongsi v. AI Gongsi (Huaming)* (上海新创华文化发展有限公司诉AI公司(化名)) [*Shanghai Xinchuanghua Culture Co. v. AI Co. (alias)*], Guangzhou Hulianwang Fayuan (广州互联网法院) [Guangzhou Internet Court], Yue 0192 Min Chu, 113 (Guangdong Internet Ct. 2024) (China).

hybrid images by combining the core features of Ultraman with new elements introduced by the AI service. Based on both the Copyright Law and the Interim Measures for Administration of Generative AI Services, 2023 (Generative AI Measures), the GIC required the AI service providers to proactively take measures to prevent potential IP infringement, such as filtering relevant keywords of protected works, establishing complaint reporting mechanisms, reminding users of potential risks of IP infringement in agreements, and adding marks to AIGC outputs.[50] Though this case does not concern the allocation of liabilities between users and AI service providers, it implies that AI service providers cannot be fully exempt from seeking preemptive authorization from copyright holders and fulfilling duties of care to prevent users from generating works susceptible to infringement.

It remains controversial across different jurisdictions how to develop a sound plan for fairly compensating human authors while balancing it with innovation in AI technology. Although this is outside the scope of this Article, more viable solutions may involve a combination of measures, such as respecting human authors' choices and licenses regarding the use of existing works, carving out fair use rules especially for non-profit AI development, and clarifying duties of care for both AI service providers and users during specific generation processes. All of these intend to reserve human authors' valuable incentives for creation. These measures could also be relevant to those users of generative AI who have contributed their own originality to hybrid works. From the moment of creation and dissemination, hybrid works produced by both human users and generative AI will return to the knowledge commons and become subject to continuous data scraping and model training.[51] Acknowledging copyrightability and human authorship over AIGC when users make original contributions is a crucial first step towards ensuring equal protection for all human authors regardless of what technical tools has been adopted. This approach could foster and sustain a positive feedback loop of creation and incentivization.

### *II. Developers and Service Providers of Generative AI*

The model developers are usually responsible for selecting training data, model architectures, algorithms, and seed values to train AI models. Generative AI, especially large-scale pre-trained models, typically requires an enormous investment of multiple resources.[52] Nevertheless, model developers and service providers do not necessarily rely on the copyright of generated works to make a profit.[53] The copyrightability of generative AI models by themselves remains a separate issue. Software of generative AI may be protected as copyrightable work.[54] Moreover, generative AI developers and service providers can also generate revenue by charging subscription fees to users. Additionally, large-scale pre-trained models serve as vital digital infrastructure and can be integrated into third-party services. Model developers can charge licensing fees or offer customization services to tailor models using the data of third parties. Therefore, compensating model developers does not necessarily require granting them authorship of works generated by users.

Permitting the copyrightability of AIGC and allowing the authorship to be attributed to users aligns with the business practices of AI service providers. Allowing users to freely use, distribute, and even commercialize generated work can enhance the appeal of generative AI services.

[50]*See id.*

[51]*See* Huang & Siddarth, *supra* note 46, at 6.

[52]*See* Katherine Lee et al., *supra* note 40, at 35–36.

[53]*See* Liu Jieyong, *Lun Rengong Zhineng Shengcheng Neirong De Zhuzuoquan Baohu— Jiyu Bijiao Fa De Shijiao* (论人工智能生成内容的著作权保护—基于比较法的视角) [*Copyright Protection of Artificial Intelligence Generated Content: From the Perspective of Comparative Law*], 4 Bijiao Fa Yanjiu (比较法研究) [J. Compar. L.] 176, 189 (2024) (China).

[54]*See, e.g.*, Run Media Bus., *Baidu's "ERNIE Bot" Copyright Registration Approved, Accelerating AI Commercialization Efforts* [百度"文心一言"著作权获登记批准，AI商业化步伐加速], NetEase (Sept. 23, 2023, 1:43 PM), https://www.163.com/dy/article/IFATCRMS05562VGD.html (China).

Attributing authorship to human users may also help model developers and service providers to increase avenues to new audiences. Another crucial reason for allocating authorship to users when they have unique contribution is that users are usually the ones who can upload materials and prompts to generate the final works. It is undeniable that certain generative AI services can by themselves suggest prompts including infringing materials or memorize the exact copies of existing works.[55] Nevertheless, there are myriad scenarios in which AI services cannot control the instructions or materials that intentionally input by users and cause infringement. In these scenarios, assigning authorship solely to AI service providers or developers may hold them permanently liable for direct infringement of existing works, thereby imposing excessive burdens and hindering innovation.[56]

In the long run, flourishing works created by generative AI may also raise the concern of model collapse, which describes the risk of degrading model performance when models are excessively trained on synthetic data.[57] The model collapse effect can be mitigated if the model training process can still access original data sources that are not generated by large-scale pre-trained models.[58] Apart from developing watermarks to better recognize content generated by generative AI, attributing authorship of AIGC to human users—when their contributions involve intellectual input and originality—may also encourage them to enhance the quality and diversity of creations and distinguish their work from fully automatically AIGC.

### III. Prompt Engineers

To give effective instructions to generative AI, users need to create prompts which are task-specific instructions and can lead to the ideal image or other forms of generation. Prompts with high quality thus become valuable and gradually own a specialized domain of the marketplace.[59] Multiple platforms of useful prompts, such as PromptBase and Prompti AI, have thus emerged with increasing popularity. If human users of generative AI do not have the capacity to develop and experiment on their own prompts, it would be a good choice to rely on prompts created by other users of online platforms. For example, for text-to-image generation models, prompt engineers may freely share prompts online or permit human users to purchase sets of prompts if users find sample images derived from these prompts attractive. Users can then use these prompts on different subjects and fine-tune prompts by themselves. By trading with human users on platforms, prompt engineers could profit from charging prices for allowing their creation of prompts to be used.[60] It is thus not necessary to reward them by attributing the authorship of concrete generated work to prompt engineers again.

If a user relies on prompts provided by others but not obtaining prior permission, will attributing the authorship to the user overlook the creativity from prompt engineers? It is worth firstly inquiring whether prompts by themselves can become copyrightable works. Some prompts can be too general to meet the standards of originality under copyrightability. Different people can

[55] *See* Nicholas Carlini, Jamie Hayes, Milad Nasr, Matthew Jagielski, Vikash Sehwag, Florian Tramèr, Borja Balle, Daphne Ippolito & Eric Wallace, Extracting Training Data from Diffusion Models 1 (2023), https://arxiv.org/pdf/2301.13188; Katherine Lee et al., *supra* note 40, at 58 (noting that the Draw Things iOS apps can suggest prompts and the user who only taps "generate" may not contribute originality to the generated image).

[56] *See* Feng Xiaoqing & Shen Yun, *Shengchengshi Rengong Zhineng Fuwu Tigongzhe Zhuzuoquan Qinquan Zeren Rending* (生成式人工智能服务提供者著作权侵权责任认定) [*Determination of Copyright Infringement Liability of Generative AI Service Provider*], 1 Fazhi Yanjiu (法治研究) [Res. Rule Law] 46, 56–57 (2025) (China).

[57] *See* Elvis Dohmatob et al., A Tale of Tails: Model Collapse as a Change of Scaling Laws 2 (2024), https://arxiv.org/pdf/2402.07043.

[58] *See* Shumailov et al., *supra* note 47, at 759.

[59] *See* Xinyue Shen, Yiting Qu, Michael Backes & Yang Zhang, Prompt Stealing Attacks Against Text-To-Image Generation Models 5823 (33rd USENIX Security Symposium 2024), https://www.usenix.org/system/files/usenixsecurity24-shen-xinyue.pdf.

[60] *See, e.g.*, *AI Prompt Marketplace*, Promptbase, https://promptbase.com/ (last visited Jan. 27, 2025).

come up with similar prompts if prompts are general and fall within public domains.[61] Nevertheless, some unique and tailored prompts can constitute copyrightable works. In the *Zarya of the Dawn* case, Ms. Kashtanova used to input multiple 100-word long prompts. Some of them are carefully crafted poems to describe particular scenes. These poems may possibly by themselves be copyrightable.[62] Using the same creative and personalized prompts and generating the same images or texts may infringe the copyright of prompt engineers. However, it might be more difficult for potential plaintiffs to allege infringement if a user inputs the same prompts but generates images not identical to the ones generated by prompt engineers. According to the BIC in *Li v. Liu*, the creation process of generated works also includes selecting images that could better correspond to what the users wanted.[63] Merely using the same prompts but generating different images may possibly interfere with the right to adaptation if the prompts are sufficiently creative and copyrightable by themselves. Yet as argued before, this possibility of infringement will not affect the attribution of authorship of generated works to users if they also contribute certain originality.

## IV. Users of Generative AI

The BIC has rightly opined that we cannot make a sweeping argument that all AIGC are copyrightable in any scenarios. It is a case-by-case analysis of how human users of generative AI have contributed intellectual input and originality to the generated work. However, it should be noted that the standard of intellectual input and originality under the Copyright Law in China is not very high. This standard should not vary based on the extent of human users' contributions relative to AI.[64] What matters here is not what generative AI has contributed but what human users have contributed to the creativity of the generated work. If a user only writes a simple prompt, the user may not satisfy the minimum requirement of originality. As shown in relevant disputes, however, there are multiple rounds of trial-and-error between users and generative AI behind those generated works.[65] Users had to give detailed and lengthy instructions to find ideal images that meet with their descriptions. After selecting the images, they also iteratively refine the images via prompts. There were 624 revisions via prompts in the *Zarya of the Dawn* case. These numerous prompts are tailored to individualized images created based on human users' own intentions and continuous self-reflection. The whole processes of creating images have fully demonstrated how human's own motivation, perception, learning, and communication have framed the final images. They have shown human users' success rather than failure in controlling unpredictable AI systems.[66] If these cannot be considered as creative expressions with originality, it is difficult to explain why there are still some other people who intend to directly use these pieces of generated work without permission.

As long as the input from human users meets the objective standard of intellectual achievement and originality, human users' authorship could be recognized. This stance is still grounded in human-centric authorship and aligns with the core aim of copyright law. The threshold of

[61]*See* Mark A. Lemley, *How Generative AI Turns Copyright Upside Down*, 25 Colum. Sci. & Tech. L. Rev. 21, 31 (2024).

[62]*See Zarya of the Dawn Letter*, *supra* note 21, at 9.

[63]*See* Li v. Liu (李某某诉刘某某), Beijing Hulianwang Fayuan (北京互联网法院) [Beijing Internet Court], Jing 0491 Min Chu No. 11279 (Nov. 27, 2023) (China), https://english.bjinternetcourt.gov.cn/pdf/BeijingInternetCourtCivilJudgment112792023.pdf, at 11.

[64]*See* Jiang Ge, *Lun Rengong Zhineng Shengcheng Neirong De Kebanquanxing: Yi Yonghu De Duchuangxing Biaoda Wei Shijiao* (论人工智能生成内容的可版权性：以用户的独创性表达为视角) [*On the Copyrightability of AI-Generated Content: From the Perspective of the User's Original Expression*], 1 Zhishi Chanquan (知识产权) [Intellectual Property] 36, 44 (2024).

[65]*See, e.g.*, Li v. Liu (李某某诉刘某某), Beijing Hulianwang Fayuan (北京互联网法院) [Beijing Internet Court], Jing 0491 Min Chu No. 11279, at 12 (Nov. 27, 2023), https://english.bjinternetcourt.gov.cn/pdf/BeijingInternetCourtCivilJudgment112792023.pdf (China); *Zarya of the Dawn Letter* at 8.

[66]*See* Ge, *supra* note 64, at 53.

copyrightable work and originality intends to facilitate rather than inhibit genuine human creators to explore innovative boundaries of creation with newly emerging technologies.[67] More scholars have argued that the copyright law and relevant requirements of originality can still serve a crucial role in valuing works created by human, thereby preventing human creations from being diminished by fully automated AI.[68] Admitting the copyrightability of AIGC, especially hybrid works, could better incentivize human users to stimulate their imagination and creativity with the help of generative AI. If AIGC cannot be eligible to copyright protection, human users will not input more efforts in designing individualized and intricate prompts to create exquisite works with AI.

One potential concern is the possibility of generative AI creating similar results based on different prompts. Both users can claim ownership over the similar generated works and may interfere with each other. Here it is necessary to notice that one crucial element of originality in generated works is selection and personalization of prompts. Access to complex and unique arrangements of prompts might be potent evidence showing infringement. If the prompts are too general and there is a lack of users' own contributions, it is recommended that users can associate the no copyright license—CC0—with generated works so that it can be freely used by anyone.[69]

In short, this section intends to examine the potential impact on different stakeholders in the generative AI supply chain. Recognizing copyrightability of AIGC when there are original contributions from human users AI may not necessarily diminish other stakeholders' incentives of innovation or creation. Instead, more nuanced considerations are essential in specific contexts as all stakeholders are closely interconnected with each other. Yet the core aim of allowing the authorship of AIGC to be attributed to human users represents equal protection and strong insistence on human-centered creativity regardless of upheavals brought by disruptive technologies. This provides us with a crucial lens to re-examine the relationship between humans and generative AI. Its role is to offer more accessible inspiration and sparking more diverse creations by human beings. Neither a stagnant rejection of AIGC nor a short-sighted depletion of existing knowledge commons will foster the prosperity of creative industries and AI technology. Instead, full respect should be given to the foundation of knowledge commons—human creativity—at every stage of the generative AI supply chain.

## F. Proposed Solutions for Judicial Practice

As analyzed in the previous section, the question of whether AI-generated works should be under copyright protection or instead governed by licensing mechanisms aimed at promoting dissemination and reuse necessitates a nuanced evaluation of both the degree of human intellectual contribution in the creative process and the underlying purpose for which the content is generated. Specifically, for professional creators who rely on their works for economic value, AI tools primarily function as aids to achieve creative objectives. In such cases, the resulting works typically exhibit significant originality, and creators expect their moral and economic rights to be protected under copyright law. Accordingly, the framework for copyright protection and revenue distribution can be negotiated between creators and platforms through specific agreements.[70]

Conversely, for users employing AI for non-creative purposes, the content generated is often aimed at improving efficiency or meeting specific functional needs rather than generating

[67] *See* Mark Fenwick & Paulius Jurcys, *Originality and the Future of Copyright in an Age of Generative AI*, 51 COMPUT. L. & SEC. REV. 1, 12 (2023).

[68] *See* Edward Lee, *Prompting Progress: Authorship in the Age of AI*, 76 FLA. L. REV. 1445, 1580 (2024); Fenwick & Jurcys, *supra* note 67, at 10.

[69] *See Deed-CC0 1.0 Universal*, CREATIVE COMMONS, https://creativecommons.org/publicdomain/zero/1.0/ (last visited Jan. 27, 2026).

[70] *See* Nicola Lucchi, *ChatGPT: A Case Study on Copyright Challenges for Generative Artificial Intelligence Systems*, 15 EUR. J. RISK REGUL. 602, 619 (2024).

economic value through copyright-protected works. While such AI-generated outputs may meet the legal definition of a "work" under copyright law, their creation is not intended for economic benefit. As a result, such output may fall within exceptions to copyright protection, allowing limited reproduction without requiring licensing.

Copyright is a composite right comprising both moral and economic rights.[71] Economic rights refer to the legal ability of authors to use their works in various ways and receive remuneration for such use. These rights include reproduction, distribution, adaptation, *et cetera*. Article 16 of the Copyright Law specifies: "The publication, performance, and production of audio and video works using works produced by adapting, translating, annotating, arranging, or compiling existing works shall obtain the permission of those works' copyright holders and of the copyright holders for the original work, and pay remuneration."[72] As exclusive rights, the exercise of these rights generally requires the consent of copyright holders. However, the purpose of copyright law is not solely to establish monopolies; rather, it seeks to achieve dual objectives: encouraging creativity through limited monopolistic rights while promoting the dissemination of works to enrich cultural and intellectual life.[73] To strike a balance between incentivizing creation and facilitating access to creative content, licensing and fair use systems have been developed.

The principles underlying AI-generated works rely on the use of a large volume of third-party data, the proportional use of which is challenging to quantify or allocate. Protecting such works solely through a "licensed use" framework would impose impractical requirements, such as obtaining permissions from numerous rights holders, and generate significant transaction costs, rendering the licensing chain for training data infeasible. Therefore, this Article proposes a "Dual-Purpose Theory of AI Creation," which distinguishes between different types of user intent when employing generative AI—specifically differentiating creative expression from functional or efficiency-oriented use—to establish appropriate and differentiated standards for copyright protection. For users whose primary purpose is not to achieve economic gain through copyright-protected works, fair use could be applied to allow platforms to reutilize such user-generated content. This would further promote innovation in AI and support database development. Such an intention-based, differentiated application of fair use would not only balance the interests of creators and platforms but also provide greater opportunities for innovation in the AI industry.

### *I. Expand the Interpretation of Article 24, Paragraph 13*

In Chinese academic discourse, the 12 "limitations of rights" listed in Article 24 of the Copyright Law are referred to as "fair use." The scope of fair use is largely defined by a semi-closed set of enumerated scenarios. Additionally, the law set a premise, stating that such uses must not "effect the normal use of that work, and also must not unreasonably harm the rights holders' lawful rights and interests." Although Article 24 lists these 12 scenarios, in the context of AI-generated works, it is difficult to ascertain precisely which portions of the copyrighted works are being reproduced and used in the creation of new content. As such, it is overly simplistic to rely solely on these 12 scenarios to determine whether AI-generated works qualify for fair use.

Currently, in practice, the "three-step test" remains the standard used to assess fair use. This test states that a work may qualify for fair use only if: (1) it is used for a specific purpose; (2) the use does not conflict with the normal exploitation of the work; and (3) the use does not unreasonably

[71] *See* Qian, *supra* note 37, at 178.

[72] *See* Zhuzuoquan Fa (著作权法) [Copyright Law] (promulgated by the Standing Comm. Nat'l People's Cong., Sep. 7, 1990, last amended Nov. 11, 2020, effective Jun. 1, 2021), Order No. 62, 1, 6, art. 16 (China)
("To use a work produced by adaptation, translation, annotation, sorting, or compilation of an existing work for publication, performance, and production of an audiovisual work, the permission of the copyright owner of the work and the copyright owner of the original work shall be obtained and remunerations shall be paid to the copyright owners.").

[73] *See* Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975).

harm the legitimate interests of the copyright holder. Moreover, in judicial practice, Chinese courts also refer to the four factors established by Section 107 of the U.S. Copyright Act of 1976,[74] which are: (1) the purpose and character of the use; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used; and (4) the effect of the use upon the potential market for or value of the work. U.S. jurisprudence also made a significant development in fair use, introducing the concept of "transformative use."[75] This rule focuses on whether the use adds something new to the original work, with a different purpose or character, thus altering its expression, meaning, or information. It examines whether and to what extent the work has been "transformed."

Considering U.S. developments on fair use, using existing copyrighted work under AIGC for training could be seen as a typical example of "transformative use." In the process of AI-generated works, the AI system independently identifies patterns and unique features in large data sets, constructs its own model, and generates content based on human-provided input. The essence of this process involves "scraping" existing works and reassembling them into new content, driven by statistical probability and the AI's syntax and logic, rather than by an intention to replicate the original expression.

Although some scholars argue that AIGC lacks expressiveness due to its lower level of control,[76] if audiences find '"new information, new aesthetics, new insights, and understandings'" in the content, the purpose of transformative fair use is fulfilled.[77] From this perspective, AI-generated works can be considered to serve the purpose of "transformative use." However, whether AI-generated works meet the standard for transformative use should be assessed based on the relevant factors. Specifically, AI-generated works may qualify as transformative use if they: (1) produce creative expression compared to the original one;[78] (2) the nature of the copyrighted work;[79] (3) do not merely substitute for the original but undergo substantial transformation, resulting in clear distinctions from the original work;[80] and (4) do not adversely affect the potential market or value of the original work.[81]

Furthermore, in determining whether the quantity and quality of the AI-generated works exceed reasonable proportions and result in substantial similarity to the original work, we must consider the principles behind large model generation. The generation process is based on statistical probabilities and big data models, and the generated content or ideas may not accurately reflect the original materials or reality. Specifically, deep learning algorithms such as neural networks often fail to trace direct correspondence between generated results and the training data. Therefore, the training phase and the AIGC phase are separate, with no direct causal link between them. In this context, the amount of training data used does not directly determine the volume of content generated by AI. This suggests that AI-generated works differs significantly from the original, making the traditional "substantial similarity" test inappropriate in this context.

Finally, when assessing whether AI-generated works affect the market or value of the original work, it is important to examine the nature of the AI's copying behavior. According to copyright law's incentive theory, if a copying behavior does not diminish the original creator's incentive to create, it should be considered outside the scope of traditional reproduction rights. While AI-generated works might involve complete copying of original works during the training stage, from a copyright perspective, this copying is more accurately characterized as "temporary copying."

[74] *See* 17 U.S.C. § 107 (1976).

[75] *See generally* Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569 (1994).

[76] *See generally* Thaler v. Perlmutter, 687 F. Supp. 3d 140 (D.D.C. 2023).

[77] *See* Cariou v. Prince, 714 F.3d 694, 706 (2d Cir. 2013); Katherine Lee et al., *supra* note 40, at 95.

[78] *See* Pierre N. Leval, *Toward a Fair Use Standard*, 103 HARV. L. REV. 1105, 1111 (1990); Frank Houston, *The Transformation Test: Artistic Expression, Fair Use, and the Derivative Right*, 6 FIU L. REV. 123, 124 (2010).

[79] *See* 17 U.S.C. § 107(2).

[80] *See id.* at § 107(3).

[81] *See id.* at § 107(4).

This type of copying is technically inevitable, performed for probabilistic statistical use, rather than for reproducing the original creator's intellectual expression. This situation is similar to the temporary caching done by search engines for technical reasons, which is not intended to replicate the expression of the work. Thus, AI-generated works does not infringe upon the adaptation rights of the original work, nor does it affect the potential market or value of the original work.

Given that the concept of "transformative use" has not yet been widely incorporated into judicial practice in China, this Article suggests that a more practical approach would be to interpret the "catch-all provision" in Article 24, paragraph 13 of the Copyright Law. Specifically, if AI-generated works satisfy the criteria for transformative use, do not result in substantial similarity, and do not affect the market or value of the original works, then they should fall within the scope of fair use.

### *II. Establishing a Whitelist for AI-Generated Works*

As previously mentioned, the current Chinese Copyright Law does not provide a clear legal framework for emerging practices such as the use of AI in data mining and training. This lack of clarity has led to uncertainties regarding whether the use of copyrighted works in AI processes requires permission from the original authors and whether such use constitutes infringement. In addition to applying the concept of transformative use to establish fair use, this Article proposes amending the Regulations for the Implementation of the Copyright Law ("Regulations for the Implementation") to include AI data mining and training activities within the scope of copyright limitations.

Specifically, a "whitelist" mechanism could be introduced within the Regulations for the Implementation of the Copyright Law, which would define AI data mining and training activities that meet the four factors of fair use and enumerate the specific scenarios in which they are applicable. This whitelist mechanism would not only provide theoretical support but also offer practical guidance for judicial practice. Through this mechanism, the determination of whether AI-generated works qualify for fair use could be standardized and regulated, thus ensuring greater consistency in legal application.

For instance, AI-generated works intended for non-commercial purposes, such as research, education, or news reports could be classified as fair use under copyright law. In these cases, such activities would fulfill the purpose element of fair use, as they align with societal goals of knowledge dissemination and innovation without adversely affecting the copyright holder's rights. Conversely, AI-generated works created with the intention of generating economic benefits should not fall under the fair use doctrine. These works, driven by a commercial motive, would be subject to general copyright protection, ensuring that the original copyright holder retains control over reproduction and licensing rights.

Additionally, when evaluating the "market impact" of AI-generated works, if such works do not significantly harm the potential market or value of the original work and demonstrates substantial innovation and transformation, it could be deemed as not infringing upon the original copyright. However, as outlined in this framework, for creators who seek to use AI tools to generate works for commercial purposes, the fair use doctrine would not apply. Instead, such creators could engage in individually negotiated licensing agreements with AI platforms to customize the scope of copyright protection and permissible reproduction.

Moreover, given the rapid evolution of AI technology, it would be beneficial to establish a periodic review mechanism to update the "whitelist" in response to technological advances and market demands. This mechanism would ensure that, while maintaining the integrity of the original framework of copyright law, the legal system remains flexible in addressing new issues arising from AI technologies. Such an approach would foster technological innovation while preserving a fair and balanced copyright protection environment.

In summary, by amending the Regulations for the Implementation and introducing a whitelist mechanism, the law would be better equipped to address the challenges posed by AI technologies. This would provide clearer guidance for both practitioners and innovators, ensuring that copyright law remains adaptable and relevant in the face of technological advancements, while still safeguarding the rights of original authors.

## G. Conclusion

With the rapid advancements in data scale, computational power, and algorithmic innovation, generative AI has fundamentally reshaped the landscape of content creation. By significantly reducing the costs of content production and distribution, redefining the role of humans in the creative process, and reorganizing industry structures into collaborative value chains, generative AI has introduced unprecedented opportunities and profound challenges for IP law. These challenges include the need to redefine "creative behavior" in the context of human-AI collaboration, maintain innovation incentives in the era of mass AIGC, and address gaps in copyright mechanisms related to data acquisition and ownership of AI-generated outputs.

In China, the rise of AIGC has posed significant challenges to the existing copyright law framework. The BIC has acknowledged that AIGC can be copyrightable when there are demonstrable human intellectual input and originality. However, the BIC emphasized that such determinations must be made on a case-by-case basis, particularly in scenarios involving hybrid human-AI collaboration. At the same time, the academic debate in China remains divided on whether AIGC satisfies the legal definition of a "work" under copyright law, with differing views on the necessity of human authorship and originality. As the debate over the copyright eligibility of AIGC continues, it is evident that legal reforms are required to balance the protection of human creativity, equitable distribution of benefits among stakeholders, and the promotion of innovation in the evolving AI-driven content ecosystem.

To address these challenges, this Article proposes several amendments to China's copyright law. First, it recommends expanding the interpretation of Article 24, Paragraph 13 of the Copyright Law to include AI-generated works within the scope of fair use. Given the transformative nature and relatively low levels of creativity in many AI-generated works, this approach would allow for more flexible and nuanced assessments of whether such works should be protected. By acknowledging the transformative use of AIGC, this proposal aims to foster innovation while ensuring that copyright law remains adaptable to emerging technologies.

Second, the Article advocates for the establishment of a "whitelist" mechanism in the Regulations for the Implementation. This mechanism would explicitly outline specific scenarios in which AI data mining and training activities qualify as fair use, thereby providing clearer guidance for legal practitioners and promoting greater consistency in judicial practice.

The Article also underscores the importance of evaluating the purpose of AI-generated works when determining their eligibility for fair use. On one hand, works generated with the intent of achieving economic benefits should not qualify for fair use and should instead receive full copyright protection to ensure that creators' moral and economic rights are upheld. On the other hand, for non-commercial AI-generated works, the scope of fair use can be appropriately broadened to promote the development of the AI industry and encourage the dissemination of creative content.

In conclusion, while the Article supports extending fair use to AI-generated works, it emphasizes the need to carefully consider factors such as the uniqueness of the work, market scarcity, and the bargaining power of authors. It further notes that developers and trainers of AI, who can obtain compensation through alternative means such as licensing fees or subscription services, do not necessarily require copyright protection for their contributions. The proposed reforms aim to protect genuinely creative works while fostering a balanced framework that

supports the growth of the AI industry and the broader creative economy. Through these measures, copyright law can evolve to meet the challenges and opportunities posed by generative AI, ensuring both the protection of human creativity and the promotion of innovation.

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