Copyright Protection for AI-Generated "Text-to-Image" Works: A Case Study of the "Banxin Case"

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Abstract: The rise of artificial intelligence" text-to-image" technology poses new challenges to the existing copyright protection system. The "Banxin Case," as one of the typical judicial cases in this field, clarifies the central role of human creators in the copyright ownership of AI-generated content. Its core guiding value lies in establishing a human authorship recognition standard centered on "creative labor" and "originality." Case analysis demonstrates that users, through creative efforts such as prompt word design, iterative optimization, and post-generation modifications, play a dominant role in the formation of the work and can thus be recognized as the copyright subject. The court, in its ruling, invoked Article 11 of China's Copyright Law, which states that "the natural person who creates a work is the author," emphasizing that originality must stem from human intellectual labor and aesthetic choices. Furthermore, by defining the technical characteristics of "text-to-image" generation and its differences from traditional works, the judgment argues that AI serves merely as a tool rather than a creative subject. It also elaborates on the jurisprudential reasons why AI cannot be a copyright subject and outlines the conditions for recognizing human creators, namely that the work must reflect originality and be the direct result of intellectual labor.

Keywords: Originality; Copyright Subject; AI Text-to-Image Generation

1. Case Review and Analysis of Controversial Issues

1.1 Detailed Case Description

In the copyright infringement dispute case of Lin v. Hangzhou Certain Technology Co., Ltd. et al. (hereinafter referred to as the "Banxin Case"), on February 14, 2023, Lin generated images by inputting and adjusting a series of prompts in the Midjourney software. These images were then manually modified using Photoshop software and re-imported into Midjourney for further optimization. Eventually, one version was selected and finalized through additional editing in Photoshop, resulting in the work titled "Banxin". The artwork depicts a dark urban nightscape by a riverside, featuring skyscrapers, a tower resembling the Oriental Pearl Tower, water surfaces with reflections, and a semi-submerged, dark red giant heart pointing rightward at the center-right of the water surface (combined with its reflection to form a complete heart). Lin published the watermarked work on the platform "Xiaohongshu" (Little Red Book) and completed the registration of the artwork with the Copyright Administration.

In September 2023, Hangzhou Certain Technology Co., Ltd. and Qin Certified Company installed a half-heart-shaped inflatable installation (with the artistic words "Love in Qinhu" printed on it) on the lake surface of a square in Changshu. Subsequently, Hangzhou Certain Technology Co., Ltd. published videos, photos, and conceptual images of the inflatable installation on platforms such as Xiaohongshu, WeChat Video Channel, and Alibaba online stores. The conceptual images, aside from differences in aspect ratio, text on the balloon surface, and smudged reflections of the Oriental Pearl Tower, were consistent with the "Banxin" image and lacked attribution. Qin Certified Company also used a cropped version of the "Banxin" image on its official WeChat account.

Lin alleged that the two defendants used his work without permission and erected a physical installation, thereby infringing his rights of attribution, reproduction, and distribution, and information network dissemination. He thus filed a lawsuit with the court, demanding a public apology from the defendants and compensation for economic losses and reasonable expenses totaling 530,450 CNY.[1]

1.2 Extraction of Key Controversial Issues in the Case

The work in question was generated using artificial intelligence tools. However, the court emphasized that copyright law protects "human intellectual creation." Through a series of creative efforts-such as designing prompts, multiple iterative generations, manual selection, and post-generation modifications-Lin played a leading role in the formation of the final work, reflecting his personalized aesthetic choices and artistic judgment. Therefore, the court determined that Lin, as a natural person who invested creative labor in the creation process, is the eligible copyright subject and holds the copyright to the work "Banxin". The artificial intelligence itself was merely used as a tool and does not qualify as a legal author.

The defendants argued that the image in question was AI-generated and lacked human intellectual creation, thus should not be protected by copyright law. The court needed to examine whether "Banxin " possessed originality, specifically whether it reflected the author's personalized choices and arrangements. This included assessing whether Lin's efforts in designing prompts, iterating images, and performing post-generation edits constituted creative labor, and whether the image met the originality standards required by copyright law in terms of composition, lighting, color, and element combination.

2. Theoretical Basis for Copyright Protection of AI-Generated "Text-to-Image" Works

2.1 Definition of "Text-to-Image"

On November 27, 2023, the Beijing Internet Court issued a first-instance judgment in the case of "Li v. Liu regarding copyright infringement of images."[2] This case established that when humans initiate, guide, and control artificial intelligence to generate corresponding content, such AI-generated content can be recognized as works protected by copyright law. This ruling has sparked extensive discussion in academia and industry regarding the copyright regulation of generative artificial intelligence. It should be noted that while both this case and the "Banxin Case" involve humans generating "text-to-image" works by inputting prompts into generative AI, the "Banxin Case" places greater emphasis on the multiple iterations of "text-to-image" generation through repeated prompt inputs, combined with manual modifications, to achieve the final work.

AI "text-to-image" refers to a technological application based on generative artificial intelligence, where specific algorithm models (such as the "Diffusion Model" used by Midjourney or the "Latent Diffusion Model" in Stable Diffusion) perform semantic parsing and intent understanding of natural language descriptions input by users, thereby automatically generating visual images that correspond to the textual descriptions. Different algorithm models vary in their precision of semantic parsing and ability to understand intent, which directly affects the degree of control human users have during the generation process and the determinacy of the final work.

This process relies on deep learning models pre-trained on large-scale datasets. It is important to note that the scope of sources for pre-training data-which may include pre-existing copyrighted artistic works, photographic works, etc.-directly impacts the copyright compliance of "text-to-image" technology applications. If the training data involves infringing materials, it may lead to derivative infringement risks in the generated output, which is one of the core issues in current legal debates.

"Text-to-image" technology enables multi-dimensional transformation of textual semantics, including stylization (e.g., transforming "a heart by the river" into an impressionist-style image), scenarization (e.g., adding environmental details such as "rainy night by the river, warm streetlights"), and content-specific generation (e.g., specifically generating a combination of elements like "a half dark red heart and a tower resembling the Oriental Pearl"). Through this transformation mechanism, the final output image often possesses considerable originality and aesthetic significance, reflecting the creative characteristics of the combination of technology and human guidance.

From the perspective of technological implementation mechanisms, "text-to-image" not only involves the cross-modal integration of natural language processing (NLP) and computer vision (CV) but also demonstrates the leap in AI capabilities from "perception" to "creation." It is precisely for this reason that whether its generated content possesses "originality" under copyright law and how rights ownership should be defined have sparked widespread discussion.

2.2 Differences Between "Text-to-Image" Outputs and Traditional Works

Traditional works originate from the direct intellectual creative activities of natural human authors, where creative intent, emotional expression, and artistic technique permeate the entire process from conception to final expression. The author exercises a high degree of control over the formation of the work. In traditional artistic works, painters can flexibly adjust brushstrokes based on immediate perceptions and predetermined effects. For instance, in Van Gogh's creation of The Starry Night, he autonomously designed swirling brushstrokes to enhance the dynamic tension of the composition, while also exercising full control over color gradations, such as by adjusting the dilution ratios of various pigments to achieve tones ranging from deep and somber to bright and vivid. The originality of the work is directly manifested through the author's personalized choices and arrangements.

Some scholars argue that whereas machinery historically served as an auxiliary tool for human labor-replacing or alleviating physical exertion-advancements in computer science, internet technology, informatics, big data, genetic engineering, and neuroscience have now made it possible for machinery to replace or reduce intellectual labor. Artificial intelligence, in this sense, represents an externalized form and tool of human cognition and mentality.[4] The creation of "text-to-image" works exhibits a distinct "human-AI collaboration" characteristic, where the creative subject is not the AI itself, but the natural human user who designs instructions for the AI. In this process, human creative labor is embodied in a series of instructional and interactive behaviors, including the meticulous design of prompts, setting generative styles, multiple iterative refinements, and the final selection of outputs. Depending on the degree of human control during the generation process, "human-AI collaboration" can be further categorized into several modes: a low-control mode characterized by "simple prompts (e.g., 'a heart by the river') + single AI generation + direct use," where the user performs no iterations or modifications; a medium-control mode involving "multiple prompt optimizations + AI iterative generation + manual selection," such as generating multiple images and choosing one without post-processing; and a high-control mode encompassing "refined prompt design + parameter adjustment + multiple iterations + manual post-processing" (e.g., further adjustments using tools like Photoshop), where the user's creative investment is more profound and systematic. The proportion of human creative labor varies significantly across these control modes, directly influencing the determination of copyright ownership.

Furthermore, parameter adjustment plays a crucial role in "text-to-image" creation, serving as a key means for users to exert artistic control. For example, in Midjourney, "--ar 16:9" adjusts the aspect ratio, affecting composition and visual focus; "--q 2" enhances output quality, enriching image details; and "--style raw" reduces stylization, producing more realistic outputs. These parameters not only expand creative possibilities but also reflect the user's conscious guidance over the form and style of the final work, thereby highlighting the unique nature of "text-to-image" creation as a novel creative paradigm based on the interaction between algorithmic response and human direction. The user's creative labor is realized through a series of deliberate and interactive actions, including carefully designed prompts, style settings, iterative optimizations, and ultimate output selection.

3. Rationale for Excluding Artificial Intelligence as Copyright Subject

3.1 Conflict Between the Instrumental Nature of AI and the Essence of Creation

The core contradiction in recognizing artificial intelligence as a copyright subject lies in the fundamental conflict between its instrumental nature and the essence of "creation" as required by copyright law.

According to Article 11 of the Copyright Law of the People's Republic of China (hereinafter referred to as the "Copyright Law"), "copyright belongs to the author, except as otherwise provided by this Law. The natural person who creates a work is the author. Where a work is created under the auspices and representation of a legal person or unincorporated organization, and reflects the will of such entity, which bears responsibility for the work, the legal person or unincorporated organization shall be deemed the author." The fundamental obstacle to recognizing AI as a copyright subject lies in the incompatibility between its instrumental nature

and the concept of creation under copyright law. AI lacks autonomous consciousness or creative intent; its outputs are essentially algorithmic responses to data and instructions. It does not possess independent autonomous consciousness, creative intent, or emotional experience. Consequently, some scholars argue that AI is an intelligent tool created by humans, and the content it generates is essentially a work completed by humans using such tools. Therefore, humans should be recognized as the authors of such works. From this perspective, the creative human input in the generation process-such as prompt design, parameter adjustment, and the selection and optimization of generated results-plays a dominant role. Such labor can be characterized as human intellectual effort, collectively constituting creative behavior that meets the standards of copyright law.[5]

In the "Banxin Case," the court explicitly stated that although the images in question were generated with the assistance of generative AI, the originality truly reflected the intellectual labor invested by the plaintiff, Lin, through a series of actions including prompt design, image selection, iterative optimization, and manual post-processing. Generative AI merely functioned as a technical tool executing user instructions, lacking the legal capacity for "creation" in its own right. This ruling further reinforces the instrumental nature of AI and negates the possibility of it becoming a copyright subject. Precisely because generative AI lacks independent autonomous creative consciousness, it cannot constitute a copyright subject. Ultimately, generative AI is merely a tool assisting humans in creative activities.

However, an alternative view exists in academic circles, arguing that "existing laws on civil subjects do not limit civil subjects to natural persons. With social development, it is possible for non-living entities to become civil subjects, as exemplified by legal persons becoming civil subjects." Scholars holding this view argue that AI can be fully analogized to legal persons, which are eligible as copyright subjects, thereby granting AI legal personality and establishing its status as a copyright subject.[6]

This perspective overlooks two critical elements: First, legal persons are legal entities formed and operated by natural persons through collective will, whose will originates from and represents the collective will of real natural persons. Second, Article 57 of the Civil Code of the People's Republic of China explicitly states: "A legal person is an organization that has the capacity for civil rights and capacity for civil conduct, and independently enjoys civil rights and assumes civil obligations in accordance with the law." Legal persons possess independent property and organizational structures, enabling them to independently bear legal responsibility in their own name. This provision establishes the independent legal personality of legal persons. Although their will originates from natural persons, it is integrated and fictionalized through legal mechanisms, forming an independent organizational will and the capacity to independently assume responsibility. In contrast, AI lacks independent will, independent property, and the capacity to bear legal responsibility. Its ability to generate content entirely depends on the manufacturer's database and user instructions, rendering it incapable of creating works through its own will.

3.2 Legal Dilemmas in Recognizing AI as a Copyright Subject

If artificial intelligence were recognized as a copyright subject, it would inevitably trigger a series of severe legal dilemmas.

First, there is the issue of de facto rights vacuum. Copyright encompasses both moral rights and economic rights. Moral rights, such as the right of attribution and the right to protect the integrity of the work, are closely tied to the author's personal interests. If AI were fictitiously recognized as a legal subject, it would neither qualify to enjoy such rights nor be able to exercise or assert them in practice. Similarly, the ownership of economic rights would become ambiguous-should rights belong to the developer, the model subject, the training data provider, or the user? This would ultimately lead to significant uncertainty in rights allocation.

Second, there is the problem of unenforceable liability. Some scholars point out that the nature of AI science dictates that AI is not a legal subject, and the values of law determine that AI lacks the qualities of a legal subject. AI does not qualify as a subject of legal relations, meaning it lacks legal capacity, capacity to act, and capacity to assume liability. AI-generated content infringes on the rights of others (e.g., generating defamatory content), accountability often becomes problematic. Judicial authorities cannot penalize the algorithm itself, and pursuing liability among the numerous potential

stakeholders behind it lacks a clear legal basis.

Specifically, China's Copyright Law does not explicitly stipulate rules for allocating liability when AI-generated content infringes on rights, particularly regarding the legality of developer model training, the boundaries of user prompt responsibility, and the copyright compliance obligations of data providers. There is a lack of clear criteria for liability division. Furthermore, although Articles 1,194 to 1,197 of the Civil Code of the People's Republic of China specify the liability of network service providers in general infringement scenarios, their regulatory targets and elements of liability are designed around traditional online environments. They are difficult to directly apply to the unique infringement patterns arising from the collaborative actions of multiple parties in AI-generated content scenarios. For this reason, under the current legal framework, issues of rights infringement caused by AI-generated content remain mired in uncertainty regarding liable parties and the applicability of laws, further highlighting the institutional barriers to recognizing AI as a rights subject.

Since the algorithm itself cannot be held liable, and its development, training, and use may involve multiple parties-including developers, users, platform operators, and even data providers-it becomes challenging to identify the obligated party in practice. There is also a lack of clear legal basis for allocating responsibility. This uncertainty not only weakens the protection of rights holders but also undermines the fundamental purpose of the copyright system: to incentivize original creation and maintain a healthy creative ecosystem through clear definitions of rights and responsibilities. Therefore, insisting on the instrumental nature of generative AI is a necessary requirement for maintaining the stability and logical consistency of the legal system.

The "Banxin Case" addressed this issue from a judicial practice perspective. The court did not recognize AI as the author but instead identified the natural person who actually used the AI for creation-Lin-as the copyright subject. In its reasoning, the court further pointed out that although the images in question were generated using AI tools, the plaintiff Lin, through multi-layered, interactive prompt design and repeated adjustments, combined with personalized modifications using image-editing software, demonstrated unique aesthetic choices and intellectual judgment throughout the process. This met the requirement of "originality" as stipulated in the Copyright Law of the People's Republic of China. The court particularly emphasized that the object of protection under copyright law is the "work" rather than the "tool of creation," and the use of AI-assisted creation should not negate the work's protectability. This judgment avoided the vacuum of rights subject, clarified the ownership of the work, and aligned with the legislative purpose of copyright law to incentivize human creation.

4. Specific Conditions for Human Creators of AI "Text-to-Image" Outputs to Qualify as Copyright Subjects

4.1 "Text-to-Image" Outputs Must Reflect the Originality of Human Creators

According to Article 3 of the Copyright Law, "works" referred to in this Law are intellectual achievements in the fields of literature, art, and science that possess originality and can be expressed in a certain form. In the "Heart Companion Case," the court recognized Lin's copyright in "Heart Companion" primarily because he exerted a degree of creative control over the AI generation process through a series of actions. For example, he explicitly specified visual elements such as "a giant dark red half-heart with its tip pointing right" and "reflections in the water with slight ripples." Secondly, he engaged in no fewer than three iterative generations and screening processes, continuously adjusting prompts and selectively retaining and re-guiding intermediate results. Thirdly, he used Photoshop to make substantive modifications to the initial AI-generated output, including adjusting the balloon's form, edge details, and overall composition. These post-editing actions directly influenced and ultimately defined the core expression of the image in question. This ensured that the final image reflected his personal original intellectual input. Lin did not simply input commands; instead, he made substantive aesthetic choices and artistic judgments regarding the composition, color, lighting, and element combination through multiple prompt designs, parameter adjustments, iterative generations, and manual post-processing.

AI text-to-image outputs must reflect the author's originality. In the case of Li v. Liu concerning infringement of the right of

attribution, known as the "First AI Text-to-Image Case," the Beijing Internet Court also stated: "The plaintiff is the person who, according to needs, made relevant settings for the AI model involved and ultimately selected the image in question. The image was directly generated based on the plaintiff's intellectual input and reflects the plaintiff's personalized expression. Therefore, the plaintiff is the author of the image and enjoys the copyright thereto."[8]

In AI-assisted creation, the requirement of "creativity" means that the work must contain the author's personalized choices and artistic judgments. Specifically, this creativity should manifest as aesthetically significant artistic arrangements in aspects such as image composition, color matching, lighting effects, element combination, and overall style. These arrangements should transcend mechanical or conventional expressions, forming an external manifestation that reflects the author's unique visual aesthetics and artistic perspective.

4.2 "Text-to-Image" Outputs Must Be Direct Products of Human Intellectual Labor

AI text-to-image outputs must constitute direct products and external manifestations of the author's intellectual labor. Works produced by following fixed sequences, formulas, or structures-where different individuals would inevitably achieve identical results-represent "mechanical intellectual achievements" with singular expression and should be excluded from copyright protection. It is noteworthy that while certain models may yield varying outputs due to random seed values, such randomness alone does not reflect the user's intellectual input. Only when the user actively selects and adjusts these random outcomes to align with their personalized expressive intent can the output potentially demonstrate originality. This requirement emphasizes the necessity of a robust causal creative connection between the creator and the final work, fundamentally relying on the creator's dominant intellectual control over the generation process.

This control manifests at multiple levels:

First, in the design and optimization of prompts, the creator must demonstrate the translation of personal artistic conceptions into machine-executable instructions through precise semantic descriptions, multi-layered feature constraints, and iterative debugging and modifications.

Second, it is reflected in the selection and refinement of outputs, including curating results from multiple iterative generations based on aesthetic criteria, and employing professional software for post-processing, polishing, or even composite modifications. These actions collectively form a continuous creative process, establishing that the final work embodies the external realization of the creator's creative intent.

Scholar Cui Guobin further notes, "Copyright law does not explicitly require that intellectual achievements must be directly output through human physical actions to the exclusion of indirect presentation or generation via tools. As long as the intellectual contributions of natural persons (users or AI developers) ultimately shape the content of AI-generated outputs, treating such content as the intellectual achievements of natural persons aligns with the public's general understanding of 'intellectual achievements'"[10]

5. Conclusion

Copyright should protect the original intellectual creations of human authors. In cases concerning AI-generated "text-to-image" works, copyright should be granted to the natural person who contributes intellectual labor, as AI itself cannot be a copyright holder. Furthermore, the human author of such works must satisfy two key requirements: the output must reflect their originality and must result directly from their intellectual effort. This analysis begins with the "Banxin Case" to outline the facts and disputes, emphasizing the judicial affirmation of human creative labor. It then defines "text-to-image" generation and contrasts it with traditional works, establishing a theoretical basis. The argument proceeds by examining AI's role as a tool and its legal limitations to demonstrate why it cannot hold copyright. Finally, it clarifies that human authors must meet the criteria of originality and direct intellectual contribution to qualify as copyright subjects.

However, this study has limitations. It does not fully address the rights of involved parties such as model developers or data providers, nor does it explore specific copyright infringement standards for AI-generated images, such as similarity metrics. Future research should refine infringement criteria in line with technological advances and analyze multi-party rights

allocation, contributing to a more robust copyright framework for AI-generated content.

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