On the Ownership of the Rights of Artificial Intelligence-Generated Works: Systematic Response Based on the Identification and Norms of Legal Subjects

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Abstract: The essence of the problem of copyright ownership of audiovisual works generated by artificial intelligence is that in the digital age, there is a crisis in the identification and regulation of legal subjects. Traditional civil and commercial law constructs the framework of rights allocation based on 'anthropocentrism', which leads to structural conflicts in new creative features such as algorithm autonomy and data resource dependence. Through the analysis of the legal subject, this paper analyzes the institutional problems faced by the content of artificial intelligence generation in the qualification of the right subject, the division of contribution weight and the attribution of responsibility, and puts forward the construction of 'dynamic right generation model' to reshape the civil and commercial law system. Through the comparison method and case analysis method, the feasibility of the 'three-subject framework' and the 'contribution chain distribution mechanism' is demonstrated, which provides a theoretical path to fill the gap between technological innovation and legal lag.

1 INTRODUCTION

When the deep learning algorithm gradually produces the ability to 'think' in the Internet age, and the generative artificial intelligence breaks through the boundary of human imagination, the production order of the cultural industry faces a new crisis with the development of science and technology. In the collision between this technological revolution and the legal tradition, a fundamental question becomes clearer: when the autonomy of the algorithm dissolves the physical carrier of 'creative intention', when the data dependence separates the causal chain of 'author-work', is the existing copyright system with anthropocentrism as the theme experiencing an unprecedented paradigm crisis in the history of civilization?

The current legal system has exposed deep structural contradictions in dealing with generative artificial intelligence. Although judicial practice tries to maintain the logical self-consistency of 'instrumentalism' and attributes the ownership of rights to the degree of intervention of human operators, it is difficult to explain the autonomous evolution of creative decisions generated by artificial intelligence in the black box of algorithms. When the generated content is neither the technical achievement preset by the developer nor the intellectual expression completely controlled by the user, the subject identification logic of the traditional civil and commercial law 'either-or' faces the lack of judicial interpretation. It is worth pondering whether the 'machine reading' of massive works in the process of data training constitutes a digestion of the creative intention of human creators, and whether the unexpected ideas generated by algorithm iteration can be included in the scope of existing rights generation.

The academic community's response to this shows two different propositions of theoretical construction and institutional construction. Some scholars advocate the expansion of the subjectivity of the existing law, trying to fill the vacancy of the system through the creation of legal personality, but they are faced with the contradiction between the compatibility with the traditional civil law value system; Another part of scholars tried to construct a new contribution evaluation model by improving the distribution of rights and interests between different subjects, which was also plagued by the problem of how to quantify the black box of technology (Wu, 2020 & Geiger, 2024). These explorations reveal the complexity of the problem at different levels, but

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have not yet constructed an effective legal normative framework that is deeply compatible with the creative characteristics of generative artificial intelligence. When algorithmic autonomy has become a prominent feature in the creative process, should institutional innovation adhere to the bottom line of human-centeredness, or need to breed a new type of rights ecology adapted to human-machine symbiosis?

Based on the paradigm crisis brought by generative artificial intelligence to the legal system at this stage, this paper focuses on the innovation of the existing laws on the regulation of subjectivity, and tries to put forward solutions to the three dilemmas faced by the current laws: First, to solve the contradiction between the 'tool-subject' binary opposition, and to create a normative space for the autonomy of the algorithm in the civil and commercial legal system; Secondly, in the transmission chain of 'data-algorithm-output', a traceable and quantifiable contribution identification system is constructed. Third, balance technological innovation incentives, protect fairness and justice in the distribution of rights and interests, and prevent technological advantages from evolving into a monopoly of rights. This paper hopes to open up a new institutional channel for man-machine collaborative creation by creating a 'dynamic rights generation model' and a 'gradient weight evaluation mechanism', so that the copyright law will still radiate new vitality in the era of artificial intelligence.

2 DECONSTRUCTION OF THE PARADIGM OF LEGAL SUBJECTIVITY CRISIS

As the proportion of algorithmic content in the digital content market exceeds 60 %, new challenges facing the legal system have emerged, Under the background that the algorithm system gradually breaks through the boundary of tools and shows its characteristics of quasi-subjectivity, does the subject category of the current 'copyright law' with natural persons and legal persons as the core have an institutional conflict with the gradually developing technological civilization (WIPO, 2024)? The traditional civil and commercial law theory has fallen into the dual dilemma of " absence of subjectivity " and " imbalance of interest distribution " when dealing with the ownership dispute of generative artificial intelligence (Coase, 1960). It is urgent to realize the paradigm transformation through the expansion of legal subjectivity theory and institutional innovation.

At present, judicial practice always adheres to the logic of 'instrumentalism' and regards artificial intelligence as the dominant creative medium. The U. S. Copyright Office's 2023 'Generative Artificial Intelligence Copyright Policy Statement': 'Human Creative Control' is the core standard for rights attribution (United States Copyright Office, 2023). In the typical case of generative artificial intelligence, 'Fehling Case', Fehling Law Firm uses legal data analysis software to automatically generate 'judicial big data analysis report of film and television entertainment industry', which covers data screening, statistics and visual chart design. However, the court held that the core content of the report was automatically completed by the algorithm and lacked the 'original expression of natural persons', which did not constitute a work in the sense of copyright law. In spite of this, the court still recognized the user's investment in the operation of the software, giving it the right to prohibit unauthorized dissemination by others (Beijing Internet Court, 2018). This judgment reflects the current legal attitude towards generative artificial intelligence. It still focuses on the traditional " tool theory, " regards generative artificial intelligence as a creative tool, and regards whether the user's intervention in the generation process of artificial intelligence is sufficient to constitute original labor as the criterion for judgment. However, when the generated content exceeds the developer's preset range, the causal relationship between the user's instructions and the output results is also separated due to the autonomy of the algorithm. The developer is not directly involved in the content generation, and the user cannot fully control the generated results. At this time, the 'tool theory' ownership standard has fallen into a theoretical dilemma. For example, the image created by deep forgery technology with adversarial training is not the design result obtained by the developer directly, nor the creation result that the user can fully control.

At the same time, the limitations of the 'natural person-legal person' dual subject structure of traditional civil and commercial law have become more and more significant in the context of the gradual enhancement of the autonomy of modern algorithms. On the one hand, the behavioral responsibility of AI-generated content is difficult to clearly identified, and the boundary of responsibility between developers, users and AI systems is blurred due to the black box of technology; on the other hand, the mechanism of income distribution also faces the risk of imbalance. It is difficult to quantify and

objectively measure the basic contribution of developers to the algorithm architecture and the proportion of rights and interests invested by users. The more fundamental contradiction is that the autonomy of the algorithm leads to the opacity of the creative process, which leads to the contradiction in the logic of 'creative intention-expression result' that the traditional copyright law relies on. The 'Artificial Intelligence Act' promulgated by the EU attempts to strengthen the responsibility of developers through technical transparency, but it does not respond to the criteria of " developer presupposition " and " user control " that cannot prevent algorithms from generating autonomous creation and their autonomy (Artificial Intelligence Act, 2024). If Coase's property rights theory is introduced into the field of artificial intelligence generation, the initial rights allocation will take into account both efficiency and fairness (Coase, 1991). Users can achieve deep intervention in artificial intelligence by adjusting parameters, just like the labor contribution in the 'partnership enterprise law', giving them copyright property rights. The developer's basic contribution to the algorithm architecture can rely on the 'technical contribution weight' to obtain income distribution. This path not only retains the tradition of legal protection of creative labor, but also reserves the institutional interface for the autonomous development of future algorithms.

3 STANDARD PERSPECTIVE ON THE DILEMMA OF RIGHTS OWNERSHIP

In the scenario generated by artificial intelligence, the copyright law has two contradictions in the presupposition of the concept of 'human author'. On the one hand, if the generated content is completely free from human intervention, it will fall into a state of 'right vacuum'. The current legal system has not yet formed a unified normative framework for the ownership of the rights of artificial intelligence-generated content, and there are two main contradictions between legislative gaps and interpretation disputes. Article 3 of China's 'Copyright Law' regards 'natural person creation' as the core element of the identification of works, but it is not clear whether the content generated by artificial intelligence can be included in the category of creation. Although the EU's 'Artificial Intelligence Act' requires developers to take responsibility for content compliance, it does not break through the logic of 'anthropocentrism' (Artificial Intelligence Act, 2024).

At the same time, at the level of normative interpretation, the definition of the qualification of 'author' in judicial practice is not yet clear. The Beijing Internet Court regarded artificial intelligence as a 'reative tool' in the 'Feelin case', and determined that the user's original expression formed by parameter adjustment can become the subject of rights (Beijing Internet Court, 2018). Then when artificial intelligence has substantial intellectual input to content generation, it faces another problem, whether developers and users can constitute co-authors. Such contradictions reflect the conflict between the principle of 'the uniqueness of the creative subject' in the traditional copyright law and the continuous development of the characteristics of artificial intelligence technology at the present stage.

At present, the difficulties in the application of law mainly focus on the technical aspect of the right division mechanism. The rules of cooperative works and commissioned works in the current law are premised on the traceability of human behavior, but the black box of the algorithm of artificial intelligence-generated content makes it difficult to quantify the contribution. Although Article 7 of the 'Measures for the Administration of Generative Artificial Intelligence Services' requires the legalization of data sources, it does not solve the relationship between the ownership of the trained data and the ownership of the generated data. This kind of normative lag makes the judicial practice rely heavily on the contract agreement but the existing but user agreement rights transfer clause often has the risk of obvious unfairness.

The dispute over the legality of data training has exacerbated the problem of ownership. During data training, massive works are faced with the problem of defining rights conflicts caused by 'machine reading'. Wu Handong advocates the rational use of rules in data mining (Wu, 2020). Japanese policy documents show that the industry is deeply worried about data ownership and needs to establish a transparent data tracking system (Japan's Cabinet Office, 2024). In judicial practice, data mining, like artificial intelligence, is used as a creative tool, but training data with copyright protection may bring new infringement risks. The contradiction between this normative gap and technological progress has caused the dilemma of the ownership of the rights of artificial intelligence to generate audiovisual works.

4 ANALYSIS OF THE DILEMMA OF THE OWNERSHIP OF ARTIFICIAL INTELLIGENCE-GENERATED WORKS

The identification of the ownership of artificial intelligence-generated works is special. The existing legal framework based on the copyright ownership rules preset by human creators (such as the authorship identification standard stipulated in Article 11 of China's 'Copyright Law') is difficult to apply directly. However, there are still logical faults and institutional gaps in the theory of 'AI tools' and 'fiction authors' proposed by the academic community in terms of ownership distribution standards and incentive mechanism design (Geiger, 2024). The current copyright law framework has the following dilemmas in dealing with the characteristics of artificial intelligence creation. First of all, the subject of rights system still uses the single mode of " human or legal person, " which obviously cannot fit the new form of mixed creation of human-computer cooperation. In addition, the definition of " subject " generated by artificial intelligence is vague, which makes the legitimacy of data mining depend on case discretion, and there is no expected definition standard (Floridi, 2023).

The rapid development of industrial practice is pushing forward the change of law. Japanese policy documents point out that the application of generative artificial intelligence in the fields of film and television soundtracks and virtual actors has led to the emergence of the phenomenon of 'virtual creation subject'. The human-led principle established by China's 'Fehling case' may encounter fundamental challenges in the context of the increasing proportion of AI-generated content. The EU has implemented a risk classification system, based on which a hierarchical regulatory framework has been constructed, and some progress has been made in security management (Japan's Cabinet Office, 2024). However, the system does not touch on the core issue of rights attribution. This gap between institutional supply and technological innovation urgently needs to be integrated and bridged by theory.

To break through the shackles of the traditional 'instrumentalism', it is necessary to implant the system design of 'class subject' in the civil and commercial law system. The EU's 'Artificial Intelligence Act' assigns responsibility to 'digital legal persons' for high-risk systems, and the Japanese policy document proposes to treat developers as 'co-authors' (Artificial Intelligence Act, 2024 & Japan's Cabinet Office, 2024). These are attempts to expand the subjectivity of the law.

5 EXPLORING THE RECONSTRUCTION PATH OF LEGAL SUBJECTIVITY THEORY

Wu Handong proposed to give artificial intelligence a 'limited legal personality', making it a legal relationship participant with specific legal capacity (Wu, 2020). In EU legislation, this idea has not yet been fully formed. The 'Artificial Intelligence Act' of EU legislation is reflected in the establishment of 'digital legal person' responsibilities for high-risk artificial intelligence systems, but has not yet been extended to the field of copyright (Artificial Intelligence Act, 2024). The Japanese policy suggests that developers should be regarded as 'co-authors', and breakthroughs should be made in the existing main framework. This progressive improvement method is practical and operational (Japan's Cabinet Office, 2024).

5.1 Imbalance in the Allocation of Rights in the Current User Agreement and Countermeasures

Most of the current user agreements have imbalances in the allocation of rights. Taking the Mid journey service clause as an example, the agreement of 'copyright ownership platform of products' conflicts with the invalidity rule of the standard clause of Article 497 of the Civil Code of China. This article advocates drawing on the 'author presumption rule' of Article 32c of the German 'Copyright Law' (Hilty & Köklü et al., 2021). The platform should bear the burden of proof, otherwise it should regard the user as the subject of rights. In terms of responsibility distribution, a three-tier framework system should be constructed: that is, the three-tier responsibility system of 'user-developer-platform'. Among them, the user's actual control over the generated content will define its rights boundary. Developers bear the strict responsibility of systemic risk because of the defects of the algorithm. The platform shall perform the corresponding duty of care in accordance with the provisions of Article 42 of the 'E-commerce Law', and build a content traceability mechanism and infringement warning system. When users know that the data is flawed but still use the resulting content,

they need to bear the corresponding liability according to Article 52 of the Copyright Law. If the platform fails to fulfill its duty of care (such as not building a traceability mechanism), it should bear supplementary responsibility. Developers suffer from systematic infringement due to defective algorithm design, and need to bear serious responsibility.

5.2 Institutional Innovation Path of Responsibility Distribution and Interest Balance Mechanism

In the process of promoting the innovation of the interest balance mechanism, the system design can be carried out along three paths: One is to refer to the EU's special protection model for databases and establish neighboring rights for AI-generated content (Artificial Intelligence Act, 2024). Secondly, Japan's 'algorithm contribution value evaluation' technology can be introduced to construct a quantitative rights allocation system (Japan's Cabinet Office, 2024). Thirdly, the application scope of statutory license should be broadened and a set of perfect training data authorization mechanism should be constructed. These schemes are not only connected with the traditional system, but also meet the special needs of technological development.

More fundamentally, the reconstruction of the theory of legal subjectivity needs to adapt to the value system of civil and commercial law. When the content generated by the algorithm has the nature of social welfare, the scope of statutory license can be appropriately broadened according to the provisions of Article 185 of the Civil Code. If it comes to public areas such as cultural communication, the fair use mechanism of Article 24 of the Copyright Law should be opened. This layered response strategy not only ensures that the traditional system is not subverted, but also leaves room for technical iteration, and finally achieves the dual legislative purpose of encouraging innovation and maintaining fairness.

6 CONCLUSION

The research status of artificial intelligence law in China shows an imbalance of 'structure-function': in terms of theoretical construction, most of the subjective research is limited to philosophical speculation, and does not connect with the systematic development of civil and commercial law system. In the study of comparative law, the reference of EU and Japan's legislation is limited to the transplantation of corresponding provisions, and does not deeply analyze the social reality contradictions generated by the system. In terms of practical response, judicial decisions have not yet established stable case-like rules, and many policy recommendations remain at the level of principle declaration.

Therefore, future research needs to focus on constructing a binary subject of 'human-AI' and designing more detailed rights identification standards. The legal system can distinguish the ownership of rights according to the control intensity of human data screening, parameter adjustment and result optimization by constructing the index system of 'creative participation'. At the same time, it is necessary to improve the evaluation framework of data training legitimacy, and clarify the difference and legal nature between basic model training and fine-tuning optimization. More importantly, it is essential to explore the right distribution mechanism of 'creative contribution chain', and achieve the dynamic balance of interest distribution through more perfect and reasonable technology. Through the continuous optimization of the existing legal system, this systematic reconstruction can not only maintain the core function of the existing copyright law to stimulate innovation, but also adapt to the new mode of human-machine collaborative development in the future.

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