

# Research on Copyright Protection Issues for Generative Artificial Intelligence Works in the Context of Divergent Judicial Attitudes in China

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**Abstract:** *In the era of rapid development of artificial intelligence technology, the copyright system is facing significant challenges. Failing to provide adequate protection for AI-generated works could dampen the enthusiasm for AI technology development. To address this issue, it is essential to review copyright protection models in different regions, understand various perspectives, establish judicial guidelines that align with the Chinese legal system, and fill the legal gaps in the protection of copyrights for AI-generated works. The neighboring rights protection model is a feasible option. This model does not require assessing originality, which is advantageous for safeguarding the interests of AI-generated works and also embodies the concept of a balanced rights framework. However, in the system's design, it is crucial to clarify the rights holders of AI-created works, determine the allocation of rights and interests, and establish reasonable legal protection periods.*

**Keywords:** Generative Artificial Intelligence Works; Judicial Attitudes; Neighboring Rights Protection Model.

## 1. Introduction

In 2022, the American artificial intelligence company OpenAI launched the highly popular application ChatGPT. With this tool, humans can engage in conversations and generate various text content by providing keywords through human input.<sup>1</sup>The popularity of this tool has led to various major internet companies also introducing their generative artificial intelligence tools. Google released its Open Large Language Model API (PaLM 2), Adobe unveiled its new creative generative AI called Firefly, and China's Baidu launched the Chinese AI generative tool "Wenxin Yiyuan," among others.<sup>2</sup>

However, with the emergence of AI-generated creations, many copyright challenges have also arisen. For example, first, whether creations generated by artificial intelligence can be legally recognized as "works" from a legal standpoint. Second, if they can be recognized as "works," who owns the rights to these creations?

To answer this question, it is necessary to clarify what the

definition of a work is. In the copyright laws of many countries, a work is considered to be an expression that possesses originality or creativity.<sup>3</sup> Simultaneously, the creator of a work is typically limited to natural persons or legal entities formed as a collective of natural persons.<sup>4</sup> With the rapid advancement of artificial intelligence technology, its level of creativity has also seen significant improvement. AI-generated content has approached the level of human creations, to the extent that it has become increasingly difficult for the general public to distinguish between the two. As Russ Pearlman has stated:

'...a strong AI represents intelligence that is generalized and more closely resembles human mental capabilities, such as reasoning and problem-solving.'<sup>5</sup>

In the case of AI-generated creations, if we were to grant it legal status as a work without considering the creator, it would

<sup>3</sup> For example, the Copyright Act of Australia specifies that copyright pertains to original literary, dramatic, musical, or artistic works. See Article 32 of the Copyright Act of Australia 1968. The Copyright Law of China also defines "works" as intellectual creations in the literary, artistic, and scientific domains that possess originality and can be expressed in some form. See Article 3 of the Copyright Act of China (adopted on 7 September 1990 and amended on 27 October 2001; 26 February 2010; 11 November 2022). The Copyright Law of Japan defines "work" as a creatively produced expression of thoughts or sentiments that falls within the literary, academic, artistic, or musical domain. See Article 3 of the Copyright Act of Japan (adopted on 1970 and amended on 2018).

<sup>4</sup> According to the Copyright, Designs and Patents Act of the United Kingdom, in the case of a computer-generated literary, dramatic, musical, or artistic work, the author shall be considered as the person who undertakes the arrangements necessary for the creation of the work. See Article 9(3) of the Copyright, Designs and Patents Act of the United Kingdom 1988. According to the Copyright Law of China, the author of a work is the natural person who created it. In the case of a work created under the direction, on behalf, or under the responsibility of a legal entity, that legal entity is also considered the author of the work. See Article 9 of the Copyright Act of China. The Copyright Law of Japan defines "author" as a person who creates a work. See Article 2(2) of the Copyright Act of Japan.

<sup>5</sup> Russ Pearlman, 'Recognizing Artificial Intelligence (AI) as Authors and Investors under U.S. Intellectual Property Law' (2018) 2 Richmond Journal of Law & Technology i, 10.

<sup>1</sup> Jonathan Vania, 'Why tech insiders are so excited about ChatGPT, a chatbot that answers questions and writes essays' (CNBC, 13 December 2022) <<https://www.cnbc.com/2022/12/13/chatgpt-is-a-new-ai-chatbot-that-can-answer-questions-and-write-essays.html>> accessed 15 September, 2023.

<sup>2</sup> The numbers of generative AI tools are proliferated after Open AI released Chat GPT in 2022. See Frederic Lardinois, 'Google launches PaLM 2, its next-gen large language model' (TechCrunch, 11 May 2023) <<https://techcrunch.com/2023/05/10/google-launches-palm-2-its-next-gen-large-language-model/>> accessed 13 September, 2023. See Aashish Aryan, 'Adobe launches generative AI model Firefly' (The Economic Times, 22 March 2022) <<https://economictimes.indiatimes.com/tech/technology/adobe-launches-generative-ai-model-firefly/articleshow/98888955.cms?from=mdr>> accessed 15 September, 2023. Simon Sharwood, 'China's Baidu reveals generative AI chatbot based on language model bigger than GPT-3' (The Register, 7 February 2023) <[https://www.theregister.com/2023/02/07/baidu\\_erniebot\\_generative\\_ai\\_chatbot/#:~:text=The%20bot%20will%20be%20named%20%E2%80%9CWenxin%20Yiyuan%E6%96%87%E5%BF%83%E4%B8%80%E8%A8%80%E2%80%9D%20or,Knowledge%20Integration%20%28Ernie%29%20model%20first%20proposed%20in%202019.>](https://www.theregister.com/2023/02/07/baidu_erniebot_generative_ai_chatbot/#:~:text=The%20bot%20will%20be%20named%20%E2%80%9CWenxin%20Yiyuan%E6%96%87%E5%BF%83%E4%B8%80%E8%A8%80%E2%80%9D%20or,Knowledge%20Integration%20%28Ernie%29%20model%20first%20proposed%20in%202019.>)> accessed 15 September, 2023.

have a profound impact on the existing copyright system. This is because if we simply deny the rights of AI-generated creations based solely on the creator, it would go against the original intent behind the establishment of the copyright system. Such an approach would not be conducive to the dissemination of culture, the development of its industries, and it could also dampen human enthusiasm for the research and advancement of AI technology.

In the current context, seeking solutions is of utmost importance. One feasible approach is to examine and study existing cases to gain insights into the various strategies adopted by different regions when facing this issue. For instance, in 2019, a judge from the Beijing Internet Court in China ruled that one of the requirements for a work to qualify as such is that it must be created by a natural person. Clearly, text content generated by artificial intelligence, even if it possesses originality, does not originate from a human; therefore, according to copyright law, such text is not considered a work.<sup>6</sup> This judgment is similar to the reasoning of a federal judge in Washington, D.C. in 2023.<sup>7</sup> However, in 2020, the Nanshan District Court in Shenzhen, China, issued a ruling that recognized articles clearly generated by artificial intelligence as eligible works, a stance that sharply contrasts with the previous attitude of the Beijing Internet Court judges.<sup>8</sup> The reason for the inconsistency in the two judgments is that China currently lacks legislation to address this issue, leaving judges in different regions to rely on their discretion to make rulings. This has also resulted in conflicting judicial practices across the entire country.<sup>9</sup>

Therefore, in the current absence of legislation, this paper aims to analyze existing cases in China regarding copyright protection for AI-generated creations and the legislation that has emerged in other countries. Based on this, it intends to formulate a set of rules that align with the Chinese legal system and promptly address the legal gaps in the protection of copyrights for AI-generated creations.

## 2. Chinese Courts Have Shown Divergent Attitudes towards Copyright Protection for Generative Artificial Intelligence Creations

In the judicial practice of Chinese courts, we can observe significant disparities in their attitudes towards copyright protection for generative artificial intelligence creations. Particularly in cases such as "Beijing Feilin Law Firm vs. Beijing Baidu Netcom Technology Co., Ltd." and "Shenzhen Tencent Computer Systems Co., Ltd. vs. Shanghai Qianheng

<sup>6</sup> *Beijing Feilin Law Firm vs. Beijing Baidu Netcom Technology Co., Ltd.* [2018] Beijing Internet Court 239.

<sup>7</sup> In this case, the court ruled that copyright protection for a work necessitates the presence of a human being, and in the absence of human involvement, a work cannot be granted copyright protection. See *Stephen Thaler vs. Shira Perlmutter* [2023] The District of Columbia 22-1564.

<sup>8</sup> *Shenzhen Tencent Computer Systems Co., Ltd. vs. Shanghai Qianheng Information Technology Co., Ltd.* [2018] Nanshan Primary People's Court, Shenzhen, Guangdong 14004.

<sup>9</sup> Due to Mainland China being a statutory law country with unified national legislation (except for a few specific local regulations), the varying regional judicial practices can easily lead to parties seeking litigation in courts they believe to be favorable to them, resulting in judicial inequality. See Jin Huang and Andrew Xuefeng Qian, 'One Country, Two Systems, Three Law Families, and Four Legal Regions: The Emerging Inter-Regional Conflicts of Law in China' (1995) 5 *Duke Journal of Comparative & International Law* 289, 311.

Information Technology Co., Ltd.," we can see that the courts have conflicting views on the recognition and protection of generative AI works, highlighting the pressing need for clear legislative regulations. This chapter will delve into these cases and the legal challenges arising from the courts' varying stances on generative artificial intelligence creations.

### 2.1 Beijing Feilin Law Firm vs. Beijing Baidu Netcom Technology Co., Ltd. Case

In September 2018, the plaintiff published a report generated by the LexisNexis Legal Information Database on behalf of the plaintiff's firm, Feilin Law Firm. The report was subsequently reproduced on the defendant, Beijing Baidu Netcom Technology Co., Ltd.'s platform without permission. The defendant removed parts of the content and the author's attribution. The plaintiff filed a lawsuit against the defendant in the Beijing Internet Court, claiming that the defendant had infringed upon their right to attribution, the right to protect the integrity of the work, and the right to disseminate information over the internet.<sup>10</sup> The issue of the dispute in this case is whether the involved report qualifies as a "work" protected by copyright law.

After reviewing the case, the court analyzed the graphical and textual content of the report's generation process. Regarding the graphics, the court deemed that the differences stemmed from various data, software, and choices of graphic categories, and lacked originality, therefore not falling under the category of graphic works as listed in copyright law.<sup>11</sup> Regarding the textual component, the court found that it met the formal requirements of textual works, possessed a certain degree of originality, but did not constitute a sufficient condition for textual works. This is because the creation by a natural person is also one of the requirements, and the text content in question was not created by a natural person, hence it does not qualify as a "work" under copyright law.<sup>12</sup>

While the court denied the work status of the report in question, it does not prevent it from entering the public domain and being freely used by the public. During its usage, it may generate rights related to the dissemination of network information, which should be granted to the users to encourage software use and dissemination.<sup>13</sup> Hence, the plaintiff, although not holding full copyright over the report, still retains the rights to attribution and the rights related to the dissemination of network information.<sup>14</sup>

### 2.2 Shenzhen Tencent Computer Systems Co., Ltd. vs. Shanghai Qianheng Information Technology Co., Ltd.

<sup>10</sup> *Beijing Feilin Law Firm vs. Beijing Baidu Netcom Technology Co., Ltd.* [2018] Beijing Internet Court 239, 1-3.

<sup>11</sup> The Implementing Regulations of the Copyright Law of China categorize works into 13 types, and graphic works are one of these categories. See Article 4 of the Implementing Regulations of the Copyright Law of China. Also see *Beijing Feilin Law Firm vs. Beijing Baidu Netcom Technology Co., Ltd.* [2018] Beijing Internet Court 239, 14.

<sup>12</sup> *Beijing Feilin Law Firm vs. Beijing Baidu Netcom Technology Co., Ltd.* [2018] Beijing Internet Court 239, 14-15.

<sup>13</sup> *Ibid.*, 16-17.

<sup>14</sup> In China, the Copyright Law defines "right to attribution" and "right of communication through information networks" as rights under copyright. Therefore, when a report doesn't meet the full requirements for copyright but possesses certain copyright-related interests, it can be considered to have partial rights related to copyright. See Article 10 of Copyright Law of China.

## Case

Since 2015, the plaintiff's employees have been using the Dreamwriter (a generative artificial intelligence tool) purchased by the company to create approximately 300,000 works each year. The plaintiff has also published four sports event articles on Tencent's website, which were also generated using Dreamwriter. These articles conclude with the statement "This article was automatically written by Tencent's robot Dreamwriter," indicating the plaintiff's authorship.<sup>15</sup> The defendant, without permission, copied these four articles and disseminated them to the public through "Huati Sports" website. The plaintiff filed a lawsuit seeking compensation, but the defendant did not appear in court and did not submit a defense statement.<sup>16</sup> The issue of dispute in this case is whether the articles in question constitute textual works and are protected by copyright law.

The court determined that, firstly, the articles in question were generated by the plaintiff using Dreamwriter, meeting the formal requirements of textual works and possessing originality.<sup>17</sup> Secondly, the automatic operation of the Dreamwriter software was not determined by self-consciousness but rather by the plaintiff's choices. The presentation and arrangement of the articles were personalized choices made by the plaintiff, demonstrating originality.<sup>18</sup> Therefore, considering both their external characteristics and the generation process, these four articles meet the conditions for protection as textual works under copyright law.<sup>19</sup>

This is the first time that a Chinese court has recognized content generated by generative artificial intelligence tools as "works," as long as the generated content is influenced by the personalized arrangement and choices of a natural person, demonstrating a certain degree of originality and deserving protection under copyright law. This ruling aligns with the viewpoint upheld by the same court in the case of Shenzhen Tencent Computer System Co., Ltd. v. Shanghai Yingxun Information Technology Co., Ltd., which was decided in the same month.<sup>20</sup>

### 2.3 Judicial Divergence Caused by Different Court Attitudes

In the two cases mentioned above, the courts adhered to the requirement that a "work" must align with the existing copyright law's definition of the concept. However, the differing analyses of how to distinguish human intervention from complete automation in the content generation process became the basis for their distinct rulings.

The reason for the ultimate difference lies in determining when the creative process begins. Beijing Internet Court, in

analyzing the generation process of such content, believed that in this type of content generation, natural persons did not play a dominant role as it involved autonomous learning by artificial intelligence. Furthermore, they asserted that natural human authorship was a necessary condition for a work, leading to the conclusion that such content does not qualify as a work because it lacks human authorship.<sup>21</sup> The Nanshan District Court, on the other hand, believed that the creative process should be counted from the initial preparations made by a natural person, including data input, condition setting, template selection, and other preparatory steps for artificial intelligence, up until the final content is generated. From this perspective, the autonomous generation process by artificial intelligence is just one part of the overall process leading to the creation of such content. Therefore, the generated content is considered a result of the choices made by a natural person according to their own will, meeting the formal requirements for a work and possessing originality, making it eligible for protection under copyright law.<sup>22</sup>

These two different viewpoints have resulted in different judicial protection methods for similar issues. For creations classified as having only copyright interests, they can only obtain "information network dissemination rights," and therefore can only claim rights related to the income generated from the dissemination of information on the internet. However, for content classified as "works," it implies full copyright protection, including moral and property rights. Although the courts have provided their respective reasons in these cases, the boundary and distinction between completely autonomous "creative generation" by artificial intelligence and artificial intelligence merely assisting authors in creation remain unclear. This has resulted in discrepancies in judicial practice in China. These issues require legislative bodies to provide clear responses through legal legislation.

## 3. Controversial Issues in Judicial Protection of Artificial Intelligence Creations

So why has China's legislation been slow to respond to artificial intelligence-generated content? Here are some of the current challenges.

### 3.1 The Lack of Specific Legal Interpretation for the Originality Standard of Works

"Originality" or "Creativity" are recognized as the most fundamental criterion for constituting a work.<sup>23</sup> However, many countries have not provided explicit legislative definitions for what constitutes "originality." Therefore, in practice, the interpretation of the standard of originality is left to the discretion of judges.<sup>24</sup>

Originality is generally understood to have two layers of meaning: firstly, it requires independent creation, and

<sup>15</sup> *Shenzhen Tencent Computer Systems Co., Ltd. vs. Shanghai Qianheng Information Technology Co., Ltd.* [2019] Nanshan Primary People's Court, Shenzhen, Guangdong 14004, 4-6.

<sup>16</sup> *Ibid.*, 3.

<sup>17</sup> *Ibid.*, 9-10.

<sup>18</sup> *Ibid.*, 10-11.

<sup>19</sup> *Ibid.*, 11.

<sup>20</sup> *Shenzhen Tencent Computer Systems Co., Ltd. vs. Shanghai Yingxun Technology Co., Ltd.* [2019] Nanshan Primary People's Court, Shenzhen, Guangdong 14010.

<sup>21</sup> *Beijing Feilin Law Firm vs. Beijing Baidu Netcom Technology Co., Ltd.* [2018] Beijing Internet Court 239, 16-17.

<sup>22</sup> *Shenzhen Tencent Computer Systems Co., Ltd. vs. Shanghai Yingxun Technology Co., Ltd.* [2019] Nanshan Primary People's Court, Shenzhen, Guangdong 14010, 10-11.

<sup>23</sup> Howard B. Abrams, 'Originality and Creativity in Copyright Law' (1992) 55 *Law and Contemporary Problems* 3, 7-8.

<sup>24</sup> Niva Elkin-Koren and Orit Fischman-Afori, 'Rulifying Fair Use' (2017) 59 *Arizona Law Review* 161, 169.

secondly, it necessitates that the creative outcome possesses a minimum degree of originality.<sup>25</sup> Judging independent creation is relatively straightforward; as long as the work is independently created by the author and not plagiarized from others, it can be considered as meeting the "independent creation" criterion. Taking textual works as an example, in judicial practice, the most direct way to determine if a textual work qualifies as independently created is by checking its level of repetition.<sup>26</sup> So, when it comes to determining whether AI-generated content qualifies as independently created, it involves two criteria: first, considering the process of AI content generation, and second, assessing the level of repetition in the final result. Meeting both of these conditions allows for a judgment to be made.

### 3.1.1 Whether the Work Generated by Artificial Intelligence is Independently Created

Artificial intelligence analyzes data in a database using deep learning algorithms and constructs its own "knowledge tree."<sup>27</sup> When a user inputs keywords, artificial intelligence generates possible results based on rules and outputs the one with the highest probability, forming the generated content.<sup>28</sup> This process is entirely independent of human intervention, thus meeting the requirement of "independent creation." Specifically, in practice, artificial intelligence databases are constantly updated, which means that even if a human inputs the same conditions, they can obtain different results at different points in time.<sup>29</sup> From the perspective of the generated results, artificial intelligence-generated content can achieve lower repetition rates compared to human-created works.<sup>30</sup> Therefore, artificial intelligence-generated content meets the requirement of "independent creation."

### 3.1.2 Whether it Meets the Minimum Level of Originality

The key question lies in the second requirement, what is meant by "minimum level of originality"? The level of originality can determine whether something is protected by full copyright or neighboring rights. Copyright protection requires a higher level of originality in the work.<sup>31</sup> Originality should reflect the author's "individuality," for

instance, Germany once upheld a high standard of originality, requiring works to embody the author's "individuality." Although this standard has undergone multiple adjustments in judicial practice, even if only a "small coin's thickness" of originality is considered eligible for copyright protection, it still necessitates that the work possesses the author's "individuality."<sup>32</sup> Currently, artificial intelligence lacks self-awareness and, naturally, does not possess "individuality," thereby not meeting the standard of originality. In the *Filin Law Firm vs. Baidu* copyright dispute case, the Beijing Internet Court adopted this viewpoint. The judge pointed out that although AI-generated content may meet the minimum standard of originality, there must be human involvement in the creation of the work. Since artificial intelligence cannot exhibit "individuality," it is not considered a work.<sup>33</sup>

## 3.2 Can Artificial Intelligence Have Copyright Like a Natural Person

Artificial intelligence is the technology that enables computers to mimic human intelligence and perform a variety of cognitive tasks.<sup>34</sup> However, this definition clearly sets the highest expectations for artificial intelligence. Based on the current level of artificial intelligence, machines can only achieve tasks like automatic recognition, processing, and responses, allowing for basic interactions between computer systems and humans. Machines still operate based on pre-set programs and do not possess the same level of cognitive abilities and self-thinking as humans.<sup>35</sup> Therefore, artificial intelligence cannot be considered equivalent to natural persons and, naturally, cannot enjoy the same rights.<sup>36</sup>

## 3.3 Who Owns the Copyright of AI-Generated Creations

If the AI-generated creation is original and eligible for copyright protection, it is necessary to determine the ownership of the copyright for that creative work.

As mentioned above, currently, artificial intelligence does not possess legal personality and cannot be the owner of copyright for works. Furthermore, from the perspective of the relevance of the artificial intelligence creative process, the artificial intelligence designer and the artificial intelligence owner are the two most relevant legal entities. However, the copyright for works generated by artificial intelligence cannot

<sup>25</sup> Jean-Marc Deltorn, Franck Macrez, Authorship in the Age of Machine Learning and Artificial Intelligence. in Sean M. O'Connor (ed), *The Oxford Handbook of Music Law and Policy* (Oxford University Press 2013)

<sup>26</sup> Toebagus Galang Windi Pratama, 'The Urgency for Implementing Crytomnesia on Indonesian Copyright Law' (2020) 5 Saudi Journal of Humanities and Social Sciences 508, 512.

<sup>27</sup> Madhusree Kuanr, Puspanjali Mohapatra and Sasmita Subhadarsinee Choudhury, TSARS: A Tree-Similarity Algorithm-Based Agricultural Recommender System. in Sachi Nandan Mohanty, Jyotir Moy Chatterjee, Sarika Jain, Ahmed A. Elngar, Priya Gupta (eds), *Recommender System with Machine Learning and Artificial Intelligence: Practical Tools and Applications in Medical, Agricultural and Other Industries* (Scrivener 2020), 391.

<sup>28</sup> In simple terms, the process of artificial intelligence generating content is the mathematical optimization of probability and statistics. See Zoubin Ghahramani, 'Probabilistic Machine Learning and Artificial Intelligence' (2015) 521 Nature 452, 455-456.

<sup>29</sup> Trifon Totlis, Konstantinos Natsis, et al, 'The Potential Role of ChatGPT and Artificial Intelligence in Anatomy Education: A Conversation with ChatGPT' (2023) 2023 Surgical and Radiologic Anatomy 1,9.

<sup>30</sup> Kai-Qing Zhou, Hatem Nabus, 'The Ethical Implications of DALL-E: Opportunities and Challenges' (2023) 2023 Mesopotamian Journal of Computer Science 17,19.

<sup>31</sup> Ryan Littrell, 'Toward a Stricter Originality Standard for Copyright Law' (2001) 43 Boston College Law Review 193,193-194.

<sup>32</sup> Paul Goldstein, Marketa Trimble, *International Intellectual Property* (Foundation Press 2012), 210.

<sup>33</sup> *Beijing Feilin Law Firm vs. Beijing Baidu Netcom Technology Co., Ltd.* [2018] Beijing Internet Court 239, 16.

<sup>34</sup> Ashraf Alam, T Employing Adaptive Learning and Intelligent Tutoring Robots for Virtual Classrooms and Smart Campuses: Reforming Education in the Age of Artificial Intelligence. in Rabindra Nath Shaw, Sanjoy Das, Vincenzo Piuri, Monica Bianchini (eds), *Advanced Computing and Intelligent Technologies* (Springer 2022), 401.

<sup>35</sup> Manh-Tung Ho, 'What is a Turing Test for emotional AI?' (2022) 1 AI & Society 1.

<sup>36</sup> Although legal entities, such as corporations, are a form of legal entity, their existence is primarily aimed at better organizing and managing economic activities. Artificial intelligence, on the other hand, is still controlled and guided by natural persons and cannot replace the role of legal entities. With the continuous development of technology, this issue may be reevaluated in the future, but the current legal framework does not adequately apply to the conditions and requirements of considering artificial intelligence as a legal entity. See Nataliia Martsenko, 'Influence of Artificial Intelligence on the Legal System' (2021) 54 Studia Prawnoustrojowe 385, 385-386.

be enjoyed by either the artificial intelligence designer or the artificial intelligence owner.<sup>37</sup>

This dilemma stems from the emergence of deep learning technology. Before the rise of machine learning, computer-generated creations relied on input from programmers, with computers serving as mere tools. However, machine learning technology has changed this paradigm, enabling artificial intelligence to learn and create autonomously, making automatic decisions based on input data.<sup>38</sup> This has allowed artificial intelligence creations to surpass the control of artificial intelligence (algorithm) designers, and as a result, the designers cannot claim copyright.

Similarly, the owner of the artificial intelligence pays for the acquisition of this tool. However, the intellectual input of the artificial intelligence owner is limited and difficult to meet the originality standard, making it challenging to claim copyright.<sup>39</sup>

Faced with this legal challenge, lawmakers need to clearly define the ownership of copyrights for artificial intelligence-generated works to address the deficiencies in existing regulations. Some countries have already taken action, such as the Copyright, Designs and Patents Act of the United Kingdom, which stipulates that in the case of computer-generated literary, dramatic, musical, or artistic works, the person who makes the necessary arrangements for the creation of the work will be regarded as the author.<sup>40</sup> However, the exact meaning of "the person who makes the necessary arrangements" remains unclear and requires further research and interpretation.

#### 4. Design of Copyright Protection Models for AI-Generated Creations

From the perspective of the challenges mentioned above in practice, the copyright of AI-generated creations urgently requires a clear and systematically designed framework for protection. This chapter suggests that neighboring rights can provide a direction for establishing a copyright protection system for AI-generated creations.

##### 4.1 Feasibility Analysis of Protecting AI-Generated Creations through Neighboring Rights

###### 4.1.1 Open Development Trends in Neighboring Rights

<sup>37</sup> Colin R. Davies, 'An Evolutionary Step in Intellectual Property Rights – Artificial Intelligence and Intellectual Property' (2011) 27 *Computer Law & Security Review* 601, 601-609.

<sup>38</sup> Mohsen Soori, Behrooz Arezoo, Roza Dastres, 'Artificial Intelligence, Machine Learning and Deep Learning in Advanced Robotics, A Review' (2023) 3 *Cognitive Robotics* 54, 55.

<sup>39</sup> Andrés Guadamuz, 'Do Androids Dream of Electric Copyright? Comparative Analysis of Originality in Artificial Intelligence Generated Works' (2017) 2 *Intellectual Property Quarterly* 1, 10-12. Chinese courts also concurred with this perspective in the case of Beijing Feilin Law Firm v. Beijing Baidu Netcom Science and Technology Co., Ltd., affirming that neither the artificial intelligence (algorithm) designer nor the user can be considered the copyright holder of artificial intelligence-generated creations. Also see Beijing Feilin Law Firm vs. Beijing Baidu Netcom Technology Co., Ltd. [2018] Beijing Internet Court 239, 18-19.

<sup>40</sup> Article 9(3) of the Copyright, Designs and Patents Act of the United Kingdom 1988.

##### Compliance

Neighboring rights constitute a relatively open intellectual property system, with trends characterized by an increasing number of protected subjects, expanding scope of rights, and changes in protection periods. This trend is primarily driven by technological advancements.<sup>41</sup>

On the one hand, the objects protected by neighboring rights are continuously increasing. With the continuous advancement of technology, the means of distributing works are also expanding, leading to a greater diversity of fields involving intellectual property rights.<sup>42</sup> The scope of neighboring rights protection in China has expanded to include various areas such as performer's rights, sound recording producer's rights, broadcaster's rights, layout designer's rights, and videogram producer's rights.<sup>43</sup> This expansion indicates that the content of neighboring rights is continuously expanding to adapt to new technologies and innovations.

On the other hand, AI-Generated Creations are products of modern technology, and they align closely with the types of protection offered by neighboring rights because they lack originality but involve intellectual effort and property attributes.<sup>44</sup> The appearance and usage of AI-Generated Creations are similar to the scope protected by neighboring rights, making it possible to apply the same legal standards.

###### 4.1.2 The Neighboring Rights Protection Model Does Not Require Assessing Originality

The controversy regarding the assessment of originality for AI-Generated Creations is still ongoing, and the root cause of this lies in the lack of uniformity in the standards for determining originality.<sup>45</sup>

Faced with the dilemma of determining originality standards, alternative approaches can be explored to address this issue. From the perspective of the existing neighboring rights protection scope, performers, sound and video recording producers, and broadcasting organizations do not possess originality.<sup>46</sup> This simplifies the process of protecting the interests of these entities since their activities, such as performances, sound and video recording production, and

<sup>41</sup> Tim Simcoe, 'Open Standards and Intellectual Property Rights' (2006) 1 *Open Innovation: Researching a New Paradigm* 1, 8-10.

<sup>42</sup> Typically, the practice in various countries is to include them within the scope of neighboring rights protection, leading to an increasingly broad range of protection under neighboring rights. In terms of categories, the Copyright Act of Japan specifies four types of neighboring rights. See Chapter IV of Copyright Act of Japan. The Russian specifies five types of neighboring rights. See Article 35 of Law on Copyright and Neighboring Rights 1993.

<sup>43</sup> Chapter IV of the Copyright Act of China.

<sup>44</sup> Vincenzo Iaia, 'To Be, or Not to Be ... Original Under Copyright Law, That Is (One of) the Main Questions Concerning AI-Produced Works' (2022) 71 *Journal of European and International IP Law* 793, 793-812.

<sup>45</sup> Shlomit Yanisky-Ravid, Luis Antonio Velez- Hernandez, 'Copyrightability of Artworks Produced by Creative Robots and Originality: The Formality-Objective Model' (2018) 19 *The Minnesota Journal of Law, Science & Technology* 1, 25.

<sup>46</sup> Seagull Haiyan Song, 'How Should China Respond to Online Piracy of Live Sports Telecasts - A Comparative Study of Chinese Copyright Legislation to U.S. and European Legislation' (2010) 3 *University of Denver Sports and Entertainment Law Journal* 3, 10.

broadcasting, do not involve creative acts.<sup>47</sup> Instead, these activities are about reproducing, replicating, and disseminating the works of others. AI-Generated Creations, fundamentally speaking, lack originality and are rather expressions generated automatically based on relevant instructions, which provides a premise for applying neighboring rights protection.<sup>48</sup> Therefore, AI-Generated Creations align with the objects of neighboring rights protection, which not only resolves the dilemma of originality determination but also provides reasonable protection for artificial intelligence-generated creations.

## 4.2 Designing the Model of Neighboring Rights Protection for AI-Generated Creations

### 4.2.1 Objects of Neighboring Rights Protection for AI-Generated Creations

Some modern neighboring rights protection objects and works are not directly related, and the right holders are not the direct disseminators of the works.<sup>49</sup> Therefore, although most countries currently do not grant AI-generated creations the status of work subject, there is no obstacle to their being treated as objects of neighboring rights.<sup>50</sup>

However, not all AI-generated creations can be accepted as subjects of neighboring rights, and only creations in forms similar to works of art can be considered objects protected by neighboring rights.<sup>51</sup> First, the law should stipulate that all AI-generated creations must have an appearance that resembles works of art and should also be replicable. Secondly, it should require creators to make necessary "low creative input" into AI-generated creations. Furthermore, AI-generated creations, like other forms of art, should also adhere to basic ethical, moral, and legal principles, while catering to humanity's spiritual and cultural needs. Lastly, neighboring rights do not protect AI-generated current events news. Current events news is not granted exclusive protection under copyright law, indicating that human-authored current events news cannot receive exclusive protection.<sup>52</sup> Therefore, AI-generated current events news would similarly not be eligible for protection.

### 4.2.2 Clarifying the Ownership of AI-Generated Creations

Neighboring rights not only protect developer but also owner, both of whom are indispensable actors in the dissemination of works and intangible information.<sup>53</sup> Developer drive the

dissemination of works or intangible information, while owners are critical factors in promoting the translation of technological achievements.<sup>54</sup>

So, when it comes to AI-Generated Creations, assuming that the goal of granting them neighboring rights is to promote dissemination and use, the key question in system design becomes how to maximize the promotion of dissemination and use. If neighboring rights are granted to developers, who currently have significant economic value in AI-Generated Creations, developers may not easily grant authorization to others for use. On one hand, this can lead to a monopoly by developers over AI-Generated Creations, where AI programs developed by them only serve their own profit.<sup>55</sup> On the other hand, it diminishes the public service aspect of AI-Generated Creations themselves, which hinders their role in fostering a thriving cultural market.<sup>56</sup>

If neighboring rights are granted to the owner of the artificial intelligence, it does not hinder the developer from recouping their investment. This is because when the owner of the artificial intelligence enters into agreements with developers for technology transfer or authorization of use, significant fees are paid to the developer. These fees are sufficient to compensate the developer's initial investment and align with the goal of neighboring rights to protect investors. On the other hand, since AI-Generated Creations exist independently of the developer and can be generated automatically based on the owner's input, the developer plays no actual role in the creation process. The owner has decisive control over the final output of the AI-Generated Creations.<sup>57</sup> Therefore, it is more reasonable for neighboring rights to be granted to the owner.

## 4.3 The Rights Content of AI-Generated Creations

Under the neighboring rights protection model, AI-generated creations bestow upon their right holders two categories of rights: personal rights and property rights. This chapter will analyze these two aspects separately.

### 4.3.1 Personal Rights

Since artificial intelligence is essentially a program without human-like thoughts and emotions, it naturally lacks what we would consider personality.<sup>58</sup> Therefore, it cannot be granted full personal rights in its creations. However, restrictions on attribution rights can be relaxed, meaning that the name of the artificial intelligence can be credited on the creations it generates.

Incentive-Based Neighboring Rights Approach' (2020) 1 European Intellectual Property Review 1, 20.

<sup>54</sup> *Ibid.*

<sup>55</sup> Vitaly Kalyatin, 'Rights to Intellectual Works Generated with Artificial Intelligence: A Russian View in the Global Context' (2021) 1 Legal Issues in the Digital Age 42, 53.

<sup>56</sup> *Ibid.*

<sup>57</sup> Jie Zhang and Xin Xie, 'Research on the Copyright Protection of Artificial Intelligence Generation in the Smart Media Environment' (Proceedings of the 2023 3rd International Conference on Public Management and Intelligent Society, Wuhan, March 2023), 658-660.

<sup>58</sup> Ina Roy-Faderman, Ann Leckie's Ancillaries: Artificial Intelligence and Embodiment. in Barry Dainton, Will Slocombe, Attila Tanyi (eds), *Minding the Future Artificial Intelligence, Philosophical Visions and Science Fiction* (Springer 2021), 127-161.

<sup>47</sup> *Ibid.*

<sup>48</sup> Binyuan Cao, 'Research on the Copyright Protection Mechanism of Creative Works Generated by Artificial Intelligence' (2023) 6 Academic Journal of Humanities & Social Science 42, 44. Neighboring rights are a system that provides protection for certain cultural products that lack originality and cannot be considered as works but are related to works, due to the development of technical information. Also see Ruth Towse, 'Copyright And Artists: A View From Cultural Economics' (2006) 20 Journal of Economic Surveys 567, 573.

<sup>49</sup> *Supra* note 49, 19.

<sup>50</sup> *Supra* note 51, 48.

<sup>51</sup> Binyuan Cao, 'Research on the Copyright Protection Mechanism of Creative Works Generated by Artificial Intelligence' (2023) 6 Academic Journal of Humanities & Social Science 42, 44.

<sup>52</sup> Rowland, Diane, 'Whose News? Copyright and the Dissemination of News on the Internet'(2003) 17 International Review of Law, Computers and Technology 163, 170.

<sup>53</sup> Martin Senftleben, Laurens Buijelaar, 'Robot Creativity: An

Furthermore, reference can be made to the Copyright, Designs and Patents Act of the United Kingdom, which addresses computer-generated works. Apart from attribution rights, it does not establish personal rights such as the right to publish, modify, or protect the integrity of the work.<sup>59</sup> In cases where others publish without permission, falsely use, or maliciously alter AI-generated creations, thereby infringing upon the personal rights of the author, the rights holder of the AI-generated creation can, based on unjust enrichment clauses, request the other party to bear corresponding infringement liabilities, safeguarding their legitimate rights and interests.

#### 4.3.2 Property Rights

In the neighboring rights protection model, property rights are at the core of the rights content and serve as the fundamental guarantee for the sustainable development of artificial intelligence and its creations.<sup>60</sup>

Artificial intelligence relies on big data and the replication of online resources as the basis for its creations.<sup>61</sup> Therefore, the reproduction right of artificial intelligence creations is a key aspect of protection. Only when the right to reproduce is secured can artificial intelligence continue to create. Furthermore, both the creation and dissemination processes of artificial intelligence creations require replication to achieve economic value.<sup>62</sup>

At the same time, AI-generated creations essentially need to operate in an internet dissemination environment, achieving the distribution effect of artificial intelligence creations through interconnected networks, thereby realizing the expected return on investment.<sup>63</sup> Therefore, the reproduction right and the right of communication to the public through information networks are crucial for AI-generated creations, serving as the primary means to ensure investors can recoup their costs.

In addition to the two property rights mentioned above, the rights related to AI-generated creations are fundamentally similar to copyright. This means that the relevant rights holders of AI-generated creations have the right to use the work in various forms and receive corresponding economic rewards, including but not limited to reproduction, distribution, exhibition, communication to the public through information networks, creation, adaptation, translation, and other rights.<sup>64</sup>

#### 4.4 Legal Protection Duration for AI-Generated Creations

<sup>59</sup> Article 9(3) of the Copyright, Designs and Patents Act of the United Kingdom 1988.

<sup>60</sup> Adam Mossoff, 'Is Copyright Property?' (2005) 29 San Diego Law Review 29, 40.

<sup>61</sup> Pauline T. Kim, 'Big Data and Artificial Intelligence: New Challenges for Workplace Equality' (2019) 59 Forthcoming University of Louisville Law Review 1, 10. Also see Eduard Fosch Villaronga, Peter Kieseberg, Tiffany Li, 'Humans Forget, Machines Remember: Artificial Intelligence and the Right to Be Forgotten' (2018) 34 Computer Law & Security Review 1, 5.

<sup>62</sup> Daron Acemoglu and Pascual Restrepo, 'Artificial Intelligence, Automation, and Work' (2018) 59 NBER Working Papers 197, 198.

<sup>63</sup> Tianxiang He, 'The Sentimental Fools and the Fictitious Authors: Rethinking the Copyright Issues of AI-Generated Contents in China' (2019) 27 Asia Pacific Law Review 218, 236.

<sup>64</sup> Daniel Gervais, 'The Derivative Right, or Why Copyright Law Protects Foxes Better than Hedgehogs' (2019) 15 Vanderbilt Journal of Entertainment and Technology Law 785, 823.

The protection duration for AI-generated creations under the neighboring rights model should not only adhere to the fundamental principles of neighboring rights but also consider the technical characteristics of artificial intelligence itself.<sup>65</sup> AI-generated creations possess the characteristics of low cost, high efficiency, and no inherent lifespan limitations.<sup>66</sup> Therefore, the protection duration for their creations should not be equated with that of human works. If AI-generated creations are granted the same protection duration as regular works, it could lead to an imbalance in interests between natural persons and the market. Considering that AI creation relies on big data, has rapidly changing information, and lower originality, an extended protection period would result in an overflow of AI-generated creations. Therefore, the protection period should not be excessively long. At the same time, if the protection period is too short, it might discourage investments and research in the AI industry by not providing sufficient returns.

The process of artificial intelligence is very similar to that of databases, as both involve computer programs generating content. Therefore, the protection period can draw inspiration from Germany's neighboring rights for databases. Germany provides a protection period of 15 years for databases and a protection period of 25 years for "special rights" in databases.<sup>67</sup> Additionally, the Rome Convention sets a baseline of twenty years for the protection periods of the three types of neighboring rights.<sup>68</sup>

Taking into consideration the shorter protection periods mentioned above, setting the protection period for artificial intelligence-generated creations' neighboring rights at twenty years would be reasonable. This duration is sufficient to ensure that the rights holders can obtain an adequate share of the market benefits.

## 5. Conclusion

In today's rapidly advancing field of artificial intelligence technology, the copyright system faces unprecedented challenges, especially concerning the legal status and copyright protection of AI-generated creations. As these creations become increasingly difficult to distinguish from human works in appearance, the debate over whether to grant them legal work status continues to intensify. This controversy not only challenges the original intent of copyright law but also has the potential for profound implications on cultural dissemination and AI technology development. Therefore, it is imperative to find solutions, including drawing from experiences in various regions and formulating rules suitable for the Chinese judicial system.

This paper analyzes the divergent positions of different Chinese courts regarding copyright protection for

<sup>65</sup> Celine Melanie A. Dee, 'Examining Copyright Protection of AI-Generated Art' (2018) 1 Delphi 31, 36.

<sup>66</sup> Daria Kim, 'AI-Generated Inventions': Time to Get the Record Straight?' (2020) 69 GRUR International 443, 446.

<sup>67</sup> Alter, Lisa, et al, 'European Community No Proposed Resolution' (1995) 1 Computer 245, 246.

<sup>68</sup> James A. Hayes, 'Copyright and Related Rights in Canada and Abroad: A View towards a More Globally Unified System of Neighbouring Rights' (2017) 64 Copyright and Related Rights 411, 412.

AI-generated creations. The Beijing Internet Court believes that although these creations may not meet traditional standards, they can still enjoy some copyright interests. However, the Shenzhen Nanshan District Court has recognized, for the first time, that content generated by generative AI tools can be considered a work as long as the content is influenced by the personalized choices and arrangements of natural persons. Such inconsistency has led to judicial discrepancies that need to be addressed through legal clarification.

The paper also explores the contentious issues faced by various countries regarding judicial protection for AI-generated content, including the lack of legal interpretation regarding the "originality" standard, the question of whether AI can be a subject of copyright, and the issue of copyright ownership of AI-generated creations. These issues require further legal research to ensure that the copyright matters concerning AI-generated creations are treated fairly.

Finally, the paper proposes the use of the neighboring rights protection model as a viable solution, emphasizing the open development trend of neighboring rights, the absence of the need to determine originality, and the promotion of cultural dissemination. In terms of system design, it suggests treating AI-generated creations as objects of neighboring rights, clarifying ownership and rights content, and establishing appropriate legal protection periods.

In conclusion, this paper aims to provide in-depth analysis and feasible solutions for addressing copyright protection issues related to AI-generated creations, promoting the dissemination of works, and the flourishing of AI technology.