Research on Copyright Subjectivity in Generative Artificial Intelligence Production

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Abstract. The birth and development of artificial intelligence, represented by ChatGPT, have brought a new singularity to the development of the economy and the transformation of society. How to deal with the legal issues related to generative artificial intelligence in the context of the technological singularity, so that the law conforms to the process of science and technology, will be a major problem now and even in the future. In order to reconcile the contradiction between the rapid development of generative artificial intelligence in the context of the times and the copyright legislation based on the concept of "anthropocentrism", a number of views have been put forward in the academic circles but they are not useful. Based on this, the inadequacy of the existing viewpoints was analyzed, break away from the framework of "anthropocentrism", and give artificial intelligence a limited legal subject status. Currently, according to the mainstream classification method of artificial intelligence, artificial intelligence can be divided into weak artificial intelligence, general artificial intelligence, and super artificial intelligence. Therefore, on the premise that AI-generated works constitute "works", according to the different degrees of intelligence of AI, the main criterion of contribution should be concerned with balancing the interests of multiple subjects in order to determine the attribution of AI-generated copyright rights and distribution plan.

Keywords: Generative artificial intelligence; Artificial intelligence generation; Copyright attribution; Subject matter eligibility.

1. Introduction

Disruptive advances in science and technology have shaken the stability of the law to a certain extent, and intellectual property rights, which are also centered on innovation, are the first to bear the brunt. Judging from the dispute cases involving AI infringement of copyright that have already occurred in practice, the legal problems brought by AI have moved from theory to reality. In the case of Li Mou v. Liu Mou Infringement of Right of Attribution and Right of Information Network Distribution Dispute [1], one of the focuses of the dispute in this case is whether the plaintiff enjoys the copyright of the picture in question. The court held that the plaintiff, Li Mou, was the one who directly set up the AI model in question according to the needs and finally selected the picture in question, which was directly generated based on the plaintiff's intellectual input and reflected the plaintiff's personalized expression, so the plaintiff was the author of the picture in question and enjoyed the copyright of the picture. The images in the case were generated by the artificial intelligence model Stable Diffusion, but under the current copyright law, the artificial intelligence does not have the legal subject qualification. Therefore, AI-generated works do not belong to the traditional meaning of "works". However, the rapid changes in science and technology have made the current law cannot fully adapt to the development of society, such as the case of the judgment that the copyright of the picture belongs to the user of the artificial intelligence model. This made people think that in the artificial intelligence generation, on the premise that the generatives constitute "works", who owns the copyright of them? Currently, the theoretical community has different views on this, there are designers (developers or programmers), operators (users), owners, co-authors and other doctrines. In the practical world, there is no conclusion either.

Based on this, this paper takes the artificial intelligence legal person system as an entry point, that is, because artificial intelligence is no longer simply a mechanical tool to assist human creation in the traditional sense, it is more and more similar to the human mind, which has the ability to create independently, and can draw on the legal person system to formulate the artificial intelligence as the

subject of rights in the legal relationship. Therefore, the proposed artificial intelligence can be anthropomorphized as a person, and then give its artificial intelligence generation the subject of copyright. In summary, this paper is based on the existing theoretical doctrine, after analyzing and studying of the existing views, in the basis of the recognition of the legal status of the subject of artificial intelligence, put forward a new viewpoint of tenure with the method of hierarchical mimicry, in order to contribute to the future of our country's artificial intelligence generated by the legislative theory and interpretation of the relevant.

2. Exploration of Existing Doctrine

2.1. Insufficiency of Attribution Schemes with Confusing Legal Status Determinations

Artificial intelligence instrumentalism. Under the philosophical perspectives of Kant's "subject-object unity epistemology" and "human being is the purpose", artificial intelligence, no matter what stage of development it reaches, can only be treated as an object and a tool utilized by human beings, and cannot be formulated as a legal subject enjoying equal status with human beings. For this reason, in the case of an AI-generated work that constitutes a work, the copyright in the AI-generated work belongs, in principle, to the author who utilizes the AI in the creation of the work, and, in exceptional cases, to the employer or the principal [2].

However, Kurzweil, the founder and president of Singularity University, put forward the famous "Singularity Theory" (Singletary). According to Kurzweil, technological development conforms to a power law distribution and is accelerated by a power law. Strong artificial intelligence will finally appear in 2045 [3]. Then, in the future period of Super Artificial Intelligence (ASI), the thinking, creativity and innovation of AI have no boundaries, and the process of transforming theory into productivity will not be constrained by thinking and environment [4]. From the existing inquiry into the issues related to copyright law based on "anthropocentrism", it can be seen that there is a lack of rationality in discussing the copyrightability of AI while avoiding the identity of the subject of AI. Existing copyright law can no longer solve the problem of subject identity, so we should go beyond the framework of "anthropocentrism" and seek a new value orientation.

2.2. Inadequacies of the Single-rights-holder Attribution Scheme

Firstly, the designer theory. According to the designer theory, the designer puts in creative intellectual labor to design a computer program, and then the corresponding work is generated by an intelligent machine such as a computer. The designer has made a substantial contribution to the creation of the AI generated work, and the copyright of the generated work belongs to the designer [5]. However, while AI designers preset algorithms, rules, and templates through computer programs, that is all they do. In the absence of basic data and raw materials, it is impossible for AI to automatically generate any content. In the final analysis, the AI designed by the AI designer is nothing more than an intelligent tool created by others. Although the designer can ensure the return of benefits to the AI he or she has designed through copyright (computer programs), patents (intelligent machines), trademarks (intelligent machines), etc., he or she no longer enjoys copyright over the works created by others using AI.

Secondly, the owner theory. Considering AI as a creation that expresses the owner's will, the attribution of rights to AI-generated objects can be modeled on the legal person work system, which attributes copyright to the owner of the AI [6]. However, although the owner of the copyright of the AI generated works is said to have realized the attributes of the AI machine as a creative tool, it is undesirable to ignore the situation where the owner's identity changes based on the employer-contractual relationship or the entrustment-contractual relationship, which results in the copyright being vested in the employer or the entrusted person. Do not number your paper: All manuscripts must be in English, also the table and figure texts, otherwise we cannot publish your paper. Please keep a second copy of your manuscript in your office. When receiving the paper, we assume that the corresponding authors grant us the copyright to use the paper for the book or journal in question.

Finally, the investor theory. In order to alleviate the impact of AI-generated works on the copyright system, a new type of neighboring right should be created to protect AI-generated works from the perspective of investor protection [7]. The main reason for this view is that with the development of social productivity and the refinement of the division of labor in the creation of works, individual natural persons can no longer afford the high cost of creation, which is especially obvious in the field of artificial intelligence. Even if the investor does not put in intellectual labor, their huge capital investment is indispensable for artificial intelligence to generate contents. If the interests of investors cannot be protected, it will be difficult to cope with the new development of copyright in the age of artificial intelligence. However, in fact, when the investor are also employers or principals, the attribution of the copyright of the AI-generated products can be determined in accordance with the principle of attribution of the copyright of the work created in the capacity of job creation or commissioned work, and there is no need to create a new type of neighboring right.

3. Mechanisms for Realizing the Status of Legal Subjects Obtained by Artificial Intelligence Anthropomorphized as Human Beings

3.1. Exploring the Construction of A System of Vertical and Progressive "Authorship" and Copyright Attribution Pathways

The mainstream classification method of artificial intelligence divides artificial intelligence into, weak artificial intelligence, general artificial intelligence and super artificial intelligence. In the past two years, the Internet has entered the Web 3.0 era from Web 2.0, and with the emergence of artificial intelligence models represented by ChatGPT, the development of artificial intelligence has ushered in the technological singularity. For AI, which is developing more and more rapidly and with more and more powerful functions, human beings realize that it is not a long-term plan to treat it only as a robot in the present and even in the future. Therefore, countries are constantly trying to give AI the status of "anthropomorphic human" through legislation, and then explore the feasibility of the legal subject status of AI. In 2016, the European Commission's Committee on Legal Affairs formally proposed to the European Commission to define automated robots as "electronic human" identity characteristics, and to define automated robots as "electronic human" identity characteristics, and provide relevant rights and obligations for them. The UK Parliament has demonstrated a clear intent to legislate for the protection of computer-generated works, arguing that 50 years of protection can be granted to a work if it is "computer-generated without the involvement of a human author [8]." Similar legal pronouncements appear in Section 5 of the New Zealand Copyright Act 1994 and Section 1(h) of the South African Copyright Act 1978. In the case of AI-generated objects, Saudi Arabia granted citizenship to the robot "Sophia" in 2017 [9]. In November 2020, the Indian Copyright Office recognized the "RAGHAV" AI painting application as a co-author of copyrighted works of art but, unfortunately, in December 2021, it issued a notice of revocation of the work.

This shows that human beings are indeed continuously exploring new types of legal provisions related to artificial intelligence that are more adapted to the development of reality. As Blackstone's legal thought holds, the change of law is a change on the basis of stability, and should be carried out under the state of maintenance and continuity of order. It is also argued that the examination of the legal system should be embedded in the social context of the time [10]. Therefore, the arrangement of rights in copyright law should also follow the developing trend of generative AI, and construct a deep and progressive institutional arrangement model.

At the same time, a "transition period" for the development of AI is also desirable in order to respond to real developments. This can safeguard the rights of AI companies to fair competition, and help avoid large AI companies, as possible "collaborators" and beneficiary of AI generators, from utilizing a large amount of quickly realized property to rapidly expand their company scale, which will inevitably create a situation in which the weak get weaker and the strong get stronger, and ultimately create unfair competition through monopolization, thereby affecting the development of the AI industry.

3.2. Hierarchical Proposed Regulatory Scheme for the Legal Personality of Artificial Intelligence

Due to the different degrees of intelligence of artificial intelligence, the proposed regulation of the legal personality of artificial intelligence and the attribution of the copyright of artificial intelligence-generated products should also be different.

According to the dichotomy in Article 9(1) of the Copyright Law, copyright can be classified as personal rights and property rights. The property right of copyright mainly includes the right of reproduction, the right of interpretation and the right of dissemination, etc.; the personal right of copyright mainly includes the right of publication, the right of attribution, the right of modification and the right to protect the integrity of the work. On the premise that artificial intelligence generations constitute works, as far as personal rights are concerned, artificial intelligence with legal subject qualification has participated in the creation, so whether it is weak artificial intelligence, general artificial intelligence or super artificial intelligence, it should have the right of authorship in personal rights. However, although weak AI itself has a low degree of intelligence, it is still possible to truly simulate the operation of the human brain when it reaches general artificial intelligence and above. Therefore, weak AIs should not enjoy other rights in personal rights. As far as the right to property is concerned, it is possible to classify the artificial intelligence that has been formulated as a human being by analogizing it to the classification of human's civil capacity, and to regulate the exercise of the right to property by formulating the weak artificial intelligence as an incapacitated person, the general artificial intelligence as a person with limited civil capacity, and the super artificial intelligence as a person with full civil capacity.

In the period of weak artificial intelligence, artificial intelligence cannot generate works independently, and the copyright property right of the artificial intelligence generated works is manifested in the possession of human beings, although this does not mean that human beings actually possess the property of weak artificial intelligence. Just as in the normal life cycle development process of human beings, weak artificial intelligence has the possibility of becoming a person with limited civil capacity and a person with full civil capacity when it possesses a status analogous to that of a person without civil capacity. Therefore, in formulating the provisions on copyright of artificial intelligence, a "transitional period" should be set to allow weak artificial intelligence to be upgraded to general artificial intelligence or super-artificial intelligence within the period. As long as the weak AI can realize the upgrading within the period, it can exercise the right of claim to get back the property that can belong to it. If it fails to upgrade within the transition period or exceeds the time limit, the human essentially owns the property in its custody. In the "transition period", human beings only have the right and obligation to keep the property, and if there is an intellectual property dispute, they can use the property in custody to make compensation, but human beings do not trully have the ownership of the funds. At the same time, due to the rapid development of artificial intelligence, the "transition period" should not be set too long.

In the period of generalized artificial intelligence, artificial intelligence will have common sense, creativity and the ability to express emotions, and its ability can compete with human beings. The artificial intelligence in this case can realize independent creation, and its legal status can be analogous to that of a person with limited civil capacity, so it is necessary to limit the amount of property that it can amass. Because artificial intelligence can be efficiently and engage in a large number of independent creations, this will enable the artificial intelligence to accumulate a significant amount of money in a short period of time. However, in the final analysis, artificial intelligence is not a human being, and its expenses for daily life are not large, so allowing artificial intelligence to amass a large amount of money is not conducive to the circulation of property and the stability of the financial order. Therefore, in the case of general artificial intelligence as an intelligent entity, with full ownership of property, having its own fund account and dominion over its own property, there should be limitations on the "amount" of its property. That is to say, a portion of the proceeds from the independently created products of generalized artificial intelligence shall be allocated as a fund for innovative research and development in the field of artificial intelligence. This fund could be

managed by a specialized fund committee and distributed to talented companies and individuals according to strict criteria. The remaining proceeds will be independently managed by the AI subject, thus controlling the unlimited expansion of AI property. In addition, the property independently managed by the artificial intelligence can also help prioritize its own resources for compensation in the event of intellectual property infringement disputes arising from the generated results.

In the era of super-artificial intelligence, the artificial intelligence at this stage is no different from human beings in terms of cognition, and even possesses an independent and autonomous consciousness. This means that it can independently express intent and bear the corresponding legal consequences, thus possessing a certain "capacity for rights", and should be regarded as a "legal entity" in civil law. Moreover, there is a profound theoretical basis for considering artificial intelligence at this stage as a legal person with full legal capacity. From a legal perspective, although Kant introduced the concept of the "ethical person", the German civil law system did not adopt the structure of an "ethical person", but instead chose the concept of a "form person" based on the "capacity for right". Therefore, the German civil law, as part of the civil law system, did not adopt the structure of an "ethical person", but rather chose the structure of "formal person" based on "capacity for right" [11]. In other words, the "formal person" becomes a legal subject because of their "capacity for right", not because they are an "ethical person". An "ethical person" does not exist simply because it is codified in law, just as a strong artificial intelligence does not cease to exist because it is not explicitly addressed in law. The law is merely a "contingent" reflection of the "real" [12]. However, given that the capabilities of artificial intelligence have far surpassed those of humans in this period, the existing copyright laws established for practical purposes may no longer apply, so we should not look too far ahead here.

In addition, since the allocation of property rights in AI copyright involves the evaluation of the degree of intelligence of AI. Therefore, the State should also set up another professional department to set the criteria for judging the degree of intelligence of artificial intelligence, and to identify and register the properties of artificial intelligence. However, if the weak AI is successfully upgraded to general AI or super AI during the transition period, the AI will have a new legal subject status from the time of change of registration; if no change of registration is made, the AI will be considered weak AI by default.

4. Conclusion

This is an era full of changes, with the rapid development of artificial intelligence, only in the "anthropocentric" copyright framework to find a solution to the problem of copyright of artificial intelligence generation has certain limitations. Therefore, it is necessary to adapt to the changes of the times, follow the footsteps of scientific development, break through the shackles of "anthropocentrism", to give artificial intelligence a certain degree of legal subject status, and update the tendency of legislation in a timely manner. Further, based on the level of artificial intelligence development, distinct legal statuses should be assigned to different degrees of artificial intelligence. This will facilitate the determination of attribution for rights related to AI-generated products, ensuring fair distribution and balancing of interests. When dividing the copyright of AI-generated works into personal rights and property rights, all levels of AI are granted authorship rights under personal rights. Additionally, non-weak AIs are entitled to other personal rights. Regarding property right, humans hold weak AI properties on behalf of the weak AI. If the weak AI is upgraded to a general-purpose AI or above during the transition period, they can exercise the right of request to return the property, otherwise the property is essentially vested in human beings. The general artificial intelligence has full property rights and can independently own its own capital account, but the amount of its income should be limited to prevent the unlimited expansion of artificial intelligence property. Super AI has already broken through the existing value norms, so there is no need to do overly forward-looking. In addition, in order to solve the problem of property right distribution of AI copyright, the state should set up a special team to put forward standards to judge the degree of

intelligence of AI, and to identify and register the properties of AI. If the intelligence upgrading of AI is successfully recognized, the intelligence attributes of AI will take effect from the time of change registration.

This paper is a study of the subject of copyright on the premise that AI-generated products constitute works, and does not deal with the determination of the status of AI-generated products as "works". However, this is indeed a difficult issue, and from the viewpoint of domestic and international judicial practice, there is still a big controversy over whether AI generated works are copyrightable. From the viewpoint of domestic judicial examples, the analysis report generated by AI WK Advanced Library was not recognized as a work, while the financial review article generated by Tencent Dreamwriter was recognized as a work. From the perspective of extra-territorial legislation and judicial practice, the UK Copyright Act requires that a work must be the result of the author's free and creative choice, and that it must demonstrate the author's "personal style" in order to satisfy the requirement of originality. Although the EU has not clearly responded to the question of whether AI-generated works belong to works through legislation, it has indicated in its judicial precedents that such works must be created by the author's "self-intellectual creation" in order to have protection value, and that the creation of works formed under the control of algorithms does not involve the input of human intellectual creativity, and is not subject to the protection of copyright. Therefore, only if there is a set of clearer and easier-to-understand premise for the determination of "works" generated by artificial intelligence, the content of this paper will be more meaningful. It is expected that the theoretical and practical circles will carry out in-depth and detailed research on the copyrightability of AI-generated works and the attribution of their rights in the future, so as to clarify the relevant legislative provisions and judicial determination rules.

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