A Study on the Identification of Artificial Intelligence-generated Content Works and Copyright Attribution: Taking Sora, a Large Model of Text-generated Video, as an Example

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Abstract: The emergence of a large model of text-generated video, represented by Sora, sheds new light on the identification of works and the discussion of copyright attribution of AI-generated content. Under "anthropocentrism", works protected by copyright law have the requirement of originality, so whether the content generated by AI in text-generated videos meets the requirement of originality is of great significance for the determination of In addition, determining the works. copyright attribution of AI-generated content is conducive to the division of rights and obligations over AI-generated content. Based on the literature research method, this paper argues that as a tool for the creation of human spiritual products, the content generated by the text-generated video big model constitutes a work. And on the issue of copyright attribution, this paper argues that the model of meaning autonomy priority and agreement attribution should be adopted to determine the attribution of copyright.

Keywords: Artificial Intelligence-generated Content; Text-generated

1. Introduction

In early 2024, Open AI made waves in the AI industry with the release of its text-generated video model, Sora, a text-generated video macromodel that automatically generates high-fidelity videos of no more than 60 seconds in length by simply typing in text, enabling the creation of character representations that include highly detailed backgrounds, complex multi-angle shots, and realistic and emotionally expressive characters. Compared to previous generative AIs, Sora's visibility, high simulation, and spatial and temporal extensibility allow it to generate

content that is closer to the level of human creativity, and its ability to create and emerge independently is greatly enhanced. Due to the specificity of the text-generated video AI represented by Sora, the new copyright issues it triggers have injected new discussion significance for the identification of works and copyright attribution. First, it needs to be clarified whether the content generated by text-generating video AI can be recognized as a work and protected by copyright law. After confirming the qualification of the subject, it is necessary to further explore the attribution of copyright and the division of rights and obligations of the generated content. Only by researching and drawing conclusions on the above two basic issues can we better cope with the demand for copyright protection and legal risks brought about by the application of the model text-generated large of video represented by Sora, and promote the healthy development of text-generated video AI.

2. Formulation of the Issue

2.1 Copyrightability of Text-Generated Video AI-Generated Content

As non-human subjects, AI-generated video content does not seem to meet the "anthropocentrism" of traditional copyright law as a work. Wang Qian (2023) argues that AI-generated content does not meet the requirements of what constitutes a work under copyright law, and therefore AI-generated content cannot be recognized as a work [1]. It is questioned whether AI-generated content is the same as that generated by general computer programs and does not meet the requirement of originality. Article 3 of China's Copyright Law defines a work as: a work is an intellectual achievement in the field of literature, art and science that is original and can be expressed in a certain form. In practice,

it is generally recognized that a work needs to satisfy four elements: firstly, it is created by human beings, i.e. the requirement of "anthropocentrism"; secondly, it is capable of being expressed in a certain form and perceived by others; thirdly, it belongs to the fields of literature, art and science; and fourthly, it is an intellectual achievement of originality. For Sora, a large model of text-generated video, it has the functions of generating animation based on images, expanding videos forward or backward in time, and realizing seamless conversion from one video to another, etc. The content generated by Sora and other text-generated video AIs is in the form of video, which undoubtedly meets the requirement that the work can be perceived by others. Based on such multi-functional positioning, Sora has a wide range of application scenarios, including but not limited to film and television production, advertising industry, education and training, game development, social media content creation, news reporting, and personal entertainment. Therefore, it also meets the requirement of belonging to the field of literature, art and science. The controversy over whether the AI-generated content of text-to-video can constitute a work mainly focuses on the two substantive elements of "creative subject" and "original intellectual work".

2.2 Copyright Attribution of Content Generated by Artificial Intelligence for Text-generated Video

With breakthroughs in AI technology, AI-generated content is becoming a new driver of innovation. In particular, the emergence of Sora has brought unprecedented changes to the film and television industry. Compared with the complex human and material processes in the traditional film and television creation model, Sora is able to provide a full chain of automatic generation services from script creation to scene rendering, character design until the completion of the production, which greatly shortens the creation cycle and opens up unlimited creative space. In practice, some people have begun to upload Sora-generated videos to short video platforms, and some film and television production companies have begun to try to use Sora to produce film and television works. Therefore, it is urgent to solve the problem of copyright attribution of the content generated by text-generated video AI such as Sora. Contributors and stakeholders in the AI generation process are potential candidates for rights attribution [2]. Then for text-generated video AI such as Sora, there are the following main candidates for rights attribution: first, the AI itself, i.e., Sora; second, the design developers of the program, including the program design, training, and technology developers, i.e., OpenAI, Google, etc.; and third, the users of the AI. For the copyright attribution of AI-generated content, scholars in China mainly have the following views: Zhang Huaiyin and Gan Jingyuan (2019) believe that the copyright system is more inclined to protect the creation, compared to the neighboring rights system is more inclined to protect the investment, incentives for investors to disseminate further dissemination investment and of the dissemination of the starting point of its legislation, this tendency to protect, more suitable for the needs of the business model of the era of artificial intelligence production [3]. Feng Xiaoqing and Pan Bohua believe that giving the ownership of the carrier of the results of artificial intelligence generation to the user is the protection of the investment paid by the user to obtain the right to use the artificial intelligence, and at the same time, it is also conducive to the user's development and dissemination of the results of the generation of artificial intelligence [4]. Wu Handong (2020) believes that the copyright can be attributed to a single subject: applying the creator's ownership model, based on the criteria of substantial contribution to the creation of the work, the copyright is attributed to the AI user or AI; applying the investor's ownership model, the copyright is attributed to the developer of the program design [5]. This paper argues that the copyright of the content generated by the AI of the text-generated video is attributed to the AI user and the program design developer to better adapt to the current trend of the development of the artificial intelligence era.

3. Text Generation Video Artificial Intelligence Generated Content Work Identification

3.1 Inability to Protect by Neighboring Rights

Some scholars believe that although the video content generated by artificial intelligence cannot satisfy the constituent elements of works, it may still find a way out under the framework of copyright law, and the neighboring right system in copyright law is one of them. For this reason, under the premise of clarifying the judgment standard of the object of neighboring right, it is necessary to analyze whether the generated video content can be regarded as the object of neighboring right. The criteria for judging the object of neighboring rights include the criteria of "non-originality", "relatedness to the work or information similar to the work", "function of dissemination", and "non-creative input". The "non-creative input" criterion [6]. The text generation video big model represented by Sora needs to go through the stages of data collection, data training and model design. The resources invested by the developers are mainly used for the construction of basic capabilities, which is specifically manifested as economic and technical inputs; while the inputs of Sora users are mainly economic inputs and creative inputs in the category of cue text, which has a guiding role in the creation of the big model, but is not a creative input. In addition, from the point of view of the content of the text-generated video, the text works created by users can be presented through the video generated by the big model, which is indeed conducive to the dissemination of the ideas of the text works. Therefore, the content generated by the text-generated video meets the criteria of "non-creative input", "related to the work or similar information of the work" and "dissemination function". The key at this point is whether the "no originality" criterion is met. The content of the text-generated video does not meet the criterion of "non-originality". The originality of a work is related to the boundary between copyright and neighboring rights. As the neighboring rights system is in the auxiliary and subordinate position in the copyright law system, the "non-originality" criterion of the object of neighboring rights is conducive to the protection of the interests of the copyright owner of the original work, so that copyright and neighboring rights are parallel and mutually reinforcing. Therefore, "non-originality" is the core criterion for determining the scope of protection of neighboring rights, and although the subject of creation of Sora-type large models is not human, the content of its creation is of original value from the perspective of objectivity, and the adoption of copyright and neighboring rights protection for human works and AI-generated content of the same originality is unable to create a difference in the scope of protection and neighboring rights protection between them. The adoption of copyright and neighboring rights protection for human works and AI-generated content of equal originality will not result in a "difference in order" in terms of the scope and intensity of protection, which is contrary to the purpose of neighboring rights protection. This is also the decisive factor why text-generated video content cannot be used as the object of neighboring rights.

3.2 Text-generated Video-generated Content Belongs to The Human Intellect

As the latest achievements of artificial intelligence, the text generation video model can assist humans in generating videos efficiently under human instructions, which belongs to the tools of human creative works, only more intelligent attributes compared to the stone and industrial society machines [7]. In the "Spring Breeze Pattern", the court held in the decision that "when people use artificial intelligence models to generate pictures, it is still essentially a human being using tools to create". Although the content generated by AI in this case is a picture, but the video is composed of a frame by frame of continuous pictures, therefore, the "Spring Breeze Pattern" decision conclusion on the text to generate a large model of the video of the copyright attribution has an important reference value. As a tool for human creation of audio-visual works, the audio-visual works generated by the Text Generation Video Big Model are integrated into human intellectual activities and belong to the intellectual achievements of human beings. Take Sora as an example, at present, the cues displayed on Sora's official website include two types, one type of cue is more detailed, such as "the camera follows a white vintage SUV with black luggage racks on the roof, the vehicle accelerates up a steep hill along a steep dirt road surrounded by pine trees, dust rises from the tires, the SUV, which has been tanned by the sun, accelerates down

the dirt road, and the scenery on the dirt road glows with warmth. The landscape glowed with warmth. The dirt road curved and stretched into the distance with no other vehicles in sight. The trees on both sides of the road are redwoods, dotted with patches of green. From behind you can easily see cars traveling along the curves on what looks like a rugged mountain road. The dirt road itself is surrounded by steep hills and mountains, with a clear blue sky and sparse clouds overhead." The video corresponding to this cue word was generated by large model semantic analysis based on the original content contained in the cue word, and is the result of the user's intellectual input. The other cue word is shorter in length, such as "California during the Gold Rush." In the image generated from this cue word, there are creeks, people, horses, buildings, distant mountains, weeds, and villages of various shapes, etc., which are not directly given by the cue word. This is because Sora first uses GPT to convert short user prompts into longer detailed captions, which are then sent to the video model, which in turn generates high-quality video based on the longer detailed captions. Trainers have been using human feedback-based reinforcement learning training since at least GPT-3, during which GPT generates multiple outputs for each text cue, which the annotator sorts from best to worst, which in turn builds a new labeled dataset. The new data is used to train a reward model, and the outputs are adjusted according to that model. This means that subjective human preferences are incorporated into the text being stretched, and the videos generated based on cues with human preferences are human intelligence outputs. It has been argued that the user of an AI to accomplish a specific task cannot decide the content generated by the AI by virtue of his/her free will [8], and it is proposed that the act of creation must correspond to a unique outcome; however, experiments have shown that the same cue words and parameters produce different results, and thus this argument suggests that the user's behavior is not creation, and that the generated content is not the result of the user's intellectual input. This paper argues that the act of creation does not necessarily correspond to a unique result, and that understanding the same thing from different perspectives will lead to different conclusions. In addition, when

using the big model of text-generated video, the user can continuously debug the result through commands, which in turn makes the big model output the content desired by the user, that is to say, the content of the text-generated video can still be decided by human's free will. There is also an exception to copyright protection for text-generated videos, i.e., if the content of a text-generated video is a mere factual message, calendars, generalized number lists, generalized tables and formulas, and original expressions of ideas with uniqueness, it will not be a work protected by copyright law. Mere factual news refers to the mere narration of objective facts such as time, place, person, cause, passage, and result, excluding the author's subjective feelings, thoughts and emotions, or rhetoric and commentary [9]. The Copyright Law does not protect pure information or facts, nor does it protect the mere reporting of said information or facts, as these materials do not have the necessary conditions to be called a work. When the video generated by the Big Model is a work of journalism based on pure facts, it should be protected by the Copyright Act. In addition, the sole expression of an idea should not be protected by copyright even if it constitutes an audiovisual work, e.g., if different people use Sora to predict that the movement of the same nematode in the next 10 seconds will produce the same video, the copyright in that video should not be attributed to a particular subject.

3.3 Text-Generated Video Generates Content with Originality

From as far as the determination of originality is concerned, some scholars have pointed out that "audiovisual works are defined as consecutive images with or without accompaniment, and their originality stems from the articulation. selection and arrangement of consecutive images as a whole" [10]. In different contexts, the meaning embodied by successive frames varies, either interpreting the storyline, conveying a specific message, or displaying artistic aesthetics, and so on. Therefore, when judging a continuous picture, the state of the continuous picture, the connection between the upper and lower parts of the picture, and the overall sense of the picture should be judged as a whole. However, to what extent should the originality of a work be evaluated positively? In this paper, we believe that there should not be a "high" limit, but a "minimum standard of creativity", i.e. "a series of interrelated moving images with or without accompanying sound" as the form of expression. That is to say, a "series of interrelated moving images" with or without accompanying sound. That is to say, with "a series of interrelated moving images with or without accompanying sound" as the form of expression, the creator in the lens language and lens articulation of independent creation, expressing the author's personality, creative intent or thoughts and feelings, its originality can meet the minimum innovation [11]. According to this standard, even if it is a simple video clip, as long as the expression of the camera language and camera linkage does not have forced logic and is not "everyone's cup of tea", the work should be recognized as having originality [12]. In fact, Sora and other large models of text-generated video can not only perform high-quality video editing tasks, such as creating seamless looping videos, adding motion effects to still images, and expanding the length of videos in the timeline, but also generate complex and accurate details, as well as complex scenes with multiple characters, specific motion types, themes, and backgrounds. Moreover, even with the same textual instructions, it can generate different original video content based on different initial states of noise or slightly adjusted transformation steps. As a result, the originality of Sora-generated videos is no less than that of professional video producers. Thus, the video content of the large model of text-generated video is original.

4. Copyright Attribution of Artificially Intelligent Content Generated by Text-generated Video

4.1 Inability to Give Artificial Intelligence a Legally Fictitious Personality

Artificial intelligence does not conform to the "anthropocentrism" of copyright law, so some scholars suggest that artificial intelligence be given legal personality, so that it becomes a creative subject [13]. Some scholars adopt "limited legal personality" to classify AI into weak AI, general AI and super AI, and believe that the generated content of weak AI is shared by AI and humans, and AI has property rights to its generated works and separate property rights to its generated works after it "grows" to general AI. AI has a property right to its generated works, with a separate fund account [14]. In practice, in 2017, a female robot named "Sophia" was even officially granted Saudi Arabian nationality and a passport. However, based on the fact that today's AI is still basically at the level of weak AI, it has not vet crossed over into the realm of general AI or super AI. At present, it is not feasible to develop a virtual legal personality for it. Article 11(2) of China's Copyright Law provides that the "citizen" who creates a work is the author, which to some extent reflects that China's copyright law is still fundamentally centered on the protection of works created by human beings. Even if a work is created by a corporate enterprise, the protection is still the subjective rights of the human beings who make up the corporate enterprise. Today, society has not yet fully embraced artificial intelligence, and is even highly prejudiced against it, believing that it will encroach on human living space. The understanding and acceptance of the products of science and technology requires a gradual process. If artificial intelligence is legally endowed with an anthropomorphic personality at this time, so that it is treated as a creator of works with an independent personality, it will stimulate potential conflicts between human beings and artificial intelligence to a greater extent, which is not conducive to the stability of society.In addition, AI-generated content is the product of condensing the interests of different natural classes, and AI, as an object dominated by natural persons, cannot ipso facto be regarded as a collection of natural persons, as legal persons are, and anthropomorphized into an independent personality [15]. For the AI itself, it does not have free will of thought, and still depends on the design training of programmers and the creative inspiration input of AI users. And artificial intelligence can not independently assume the legal rights and obligations, in the world's first case of artificial intelligence infringement to generate ottoman case, finally still by the program design and development of the legal person company to assume responsibility for the infringement of rights and obligations, and therefore can not be given to the artificial intelligence legal anthropomorphic personality at present.

4.2 The Rational Approach to Copyright Attribution: Prioritizing Attribution by Agreement on Autonomy

Text-generated video AI-generated content in the case of the composition of audiovisual works, as a private right of copyright attribution should adhere to the basic principle of autonomy of meaning [16], on this basis, the measurement of intellectual input in the generation of different videos, taking into account the results of the attribution of copyright to the interests of the investor, the interests of the community and the interests of the state.

4.2.1 Application of the principle of autonomy in the attribution of copyrights

In the context of the market economy, text artificial generation video intelligence generated audiovisual works will rapidly enter the trading market, at this time, investors and users to freely dispose of their rights is not only necessary, but also in a key position, the transfer of intellectual property rights, licensing, and other contracts also need to be more meaning of autonomy. Meaning autonomy means that the subject of private law has the right to implement private law behavior in accordance with his or her personal will, and others shall not interfere; the subject of private law is responsible for the implementation of private law behavior only on the basis of the freely expressed true meaning; and the agreement voluntarily reached by the subject of private law takes precedence over the application of private law in the event of non-violation of the provisions of the law. The copyright of audiovisual works belongs to private rights, and the agreement on copyright should be the main basis for the attribution of the copyright of text generated video AI generated content. By agreeing on attribution, it is not only conducive to the formation of rights and obligations between large model investors and users, maintaining the stability of legal relations, but also conducive to saving transaction costs and resolving disputes.Not all copyright attributions are legally valid due to the disparity in power between the investors and the majority of users of large models of text-generated video in terms of their ability to develop, use and transform. The prerequisite

for autonomy is freedom of will, and only when the parties are on an equal footing can the provisions of the contract not be skewed and the content of the contract be the consent of the parties [17]. Effective autonomy of meaning not only requires the realization of formal equality between the parties, but also requires that formal equality be concretized and materialized through substantive equality. This requires the copyright attribution agreement to realize both the reasonable distribution of copyright interests and the fairness of judicial decisions. From the viewpoint of the status of investors and users of the big model, investors possess the absolute advantage of capital and resources, which is easy to form a situation where investors are more dominant relative to users. Especially when the user makes a large intellectual input on the input cue information, the distribution result of agreeing that the investor enjoys the copyright deviates from the substantive value of the autonomy of meaning, and may even lead to the copyright to the ultimately impede monopoly, and the competition, and impede the progress of science and technology and innovation. In addition, in the pursuit of substantive equality of copyright ownership between users, trainers and investors, two issues should be noted: first, taking into account the public interest of society and the national interest, to prevent one-sided efficiency instead of fairness of the value orientation; second, the content of the agreement does not belong to the invalid agreement and other circumstances, and shall not conflict with the mandatory provisions of the law [18].

4.2.2 Attribution of copyright in the absence of agreement

In the absence of agreement, the attribution of copyright shall include general and specific attribution. In the case of general attribution, copyright in audiovisual works may belong to natural persons, legal persons or unincorporated organizations. Natural persons include users and trainers of large-scale models. Copyright attribution of AI-generated content in text-generated videos should be determined based on whether the user and trainer have made substantial intellectual input. For videos generated by user input of simple instructions, the user neither contributes artistic and substantial skill or labor in the

video nor makes the necessary arrangements for the production of the final generated work, and thus cannot be considered an author within the meaning of copyright law. In response to short instructions entered by the user, a text-to-generate-video AI like Sora can extend the user's instructions and generate a video based on the extended instructions. Thus, for videos generated by a user issuing simple instructions to a large model, the trainer is similar to the person who programmed and designed the graphics of a computer game, both of whom put in essentially the same or similar intellectual labor, and whose copyright should be attributed to the trainer.In special cases of attribution, if the trainer of a large model wants the user to create with that model. the user of that model also wants to create with the model developed by the trainer. Thus, if the generated video demonstrates substantial intellectual work by the user and is extended accordingly to the user's intellectual input, the corresponding video constitutes a collaborative work, and the user and the trainer constitute the collaborative authors of the video. If the video is divisible, the user owns a copyright in the video corresponding to the cue word and the trainer owns a copyright in the video corresponding to the extension of the cue word, provided that the respective copyright owners do not infringe on the copyright of the video as a whole in the course of exercising their copyrights. In addition, if the generated video represents the will of a legal person or an unincorporated organization and meets the other constituent elements of a legal person's work, the copyright of the generated video may be owned by the legal person or unincorporated organization in question.

5. Conclusion

The current artificial intelligence technology continues to develop rapidly, rapid iteration, Sora and other text-generated video artificial intelligence will be artificial intelligence technology to a new era, the development of opportunities and new challenges co-exist. This not only brings revolutionary tools or new high-quality productivity for the content generation industry, but also provides a world simulator for breaking through the space-time limitations. It can be foreseen that the future of the big model or will be based on the creation of works, deriving more diversified application scenarios and business models, and triggering the reconstruction of the global value chain. However, at the same time, attention should also be paid to its impact on the current copyright legal system, how to define its works or determine its copyright attribution is still a proposition worth exploring. Regardless of the development of AI technology, it should be regarded as a simulation and extension of human intelligence, insisting on copyright compliance as the red line of technological research and application development, and adhering to the basic stance of people-oriented copyright governance. Artificial intelligence is an important part of the construction of the world's digital industry, and the compliant, efficient and sustainable development of large models of artificial intelligence should be continuously promoted to give full play to the value of AI technology for productivity promotion.

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