

The Impact of Artificial Intelligence on the Tort Legal System and its Response

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Abstract: The rapid development of artificial intelligence technology has had a great impact on our production and life, and at the same time has brought new risks and challenges to the legal system of tort liability. However, initially entering the era of weak artificial intelligence, the immaturity of artificial intelligence technology has led to the occurrence of damage caused by artificial intelligence products from time to time, such as traffic accidents caused by driverless cars, which has led to the consideration of the impact of artificial intelligence on the legal system of tort liability and its response methods. At present, there are controversies in the theoretical community on how to determine the responsibility after the occurrence of artificial intelligence causing damage to people, and the results of cases in judicial practice are not the same. Therefore, in the face of the new type of tort cases caused by artificial intelligence, we should continue to improve the relevant legal system of tort liability, break the barriers in the determination of liability and responsibility, so as to better meet the arrival of strong artificial intelligence and prevent the adverse consequences of artificial intelligence to human society.

Keywords: Artificial intelligence, Tort liability, Damage caused by artificial intelligence, Civil subject.

1. Organization of the Text

1.1. Introduction to the impact of artificial intelligence and artificial intelligence in tort law

1.1.1. The definition of artificial intelligence in this paper

Artificial intelligence belongs to a branch of computer science, which is a new technical science to study, develop, simulate and extend human intelligence through theories, methods, technologies and system applications. The artificial intelligence discussed in this paper is mainly the use of artificial intelligence technology manufactured products, such as intelligent robots, driverless cars, etc., in the process of work caused damage to people resulting from the determination of tort liability, because in general artificial intelligence products in a non-working state will not cause the consequences of causing damage to people

1.1.2. An Introduction to the Impact of Artificial Intelligence in Tort Legal Relations

In recent years, with the occurrence of cases of damage caused by artificial intelligence robots, this involves thinking about the impact of the legal system on tort. The influence of artificial intelligence in tort legal relations is firstly reflected in the influence of the subject of tort legal relations, that is, whether artificial intelligence can assume a certain range of tort liability as the subject of legal relations; secondly, artificial intelligence also affects the object of tort legal relations, the wide range of application of artificial intelligence technology infringes on the legitimate personal and property rights and interests of civil subjects; finally, artificial intelligence also affects the tort legal relations. Finally, artificial intelligence also affects the content of the tort legal relationship, in terms of the identification of tort liability and the principle of imputation are different from ordinary tort.

1.2. The impact of artificial intelligence on the subject of infringement and response

In order to make AI technology better for the benefit of mankind, in 2017, the State Council officially issued an announcement on the development plan for a new generation of AI, clearly proposing "to increase research on the legal issues involved in AI, such as determining civil and criminal liability, protecting privacy and property rights, safe use of information, etc., establishing a systematic tracking and accountability system, and clarifying legal subject and AI-related rights, obligations and responsibilities." Article 2 of China's Civil Code clearly stipulates three types of civil subjects, which enjoy certain civil rights, assume certain civil obligations and bear corresponding legal responsibilities when violating legal provisions. In terms of tort field, in order to better deal with the problem of artificial intelligence causing damage to people, we must first clarify the legal status of artificial intelligence in civil law, that is, whether it can be used as a legal subject and the subsequent issues related to the determination of liability. At present, there are three main views on the legal status of AI in the theoretical field, namely, affirmative, negative and neutral.

One of them is the affirmative statement. The affirmative view is that artificial intelligence has the status of an independent legal subject. Compared with animals, human beings have independent consciousness and the ability to think. With the continuous development of artificial intelligence technology, artificial intelligence robots can also simulate human thinking mode and have similar thinking ability with human beings. Therefore, it can exist as a legal subject, enjoy the rights and assume certain civil responsibilities as a civil subject. And because the law is always lagging behind, it is impossible to enumerate all civil subjects of law, and with the continuous progress of society, new civil subjects may appear, and it is entirely possible for artificial intelligence to expand to become a new civil subject. But artificial intelligence is always different from human beings, and it has certain limitations in assuming civil liability.

In order to solve this drawback, the theoretical community has put forward many new ideas. Some scholars advocate the "limited legal personality of artificial intelligence," he believes that the legal status of artificial intelligence and the legal status of natural persons there are certain differences, because of the limited ability of artificial intelligence to bear the civil legal consequences, so the civil legal norms applicable to artificial intelligence should be different from the current legal norms applicable to natural persons, that is, with reference to The principle of special over general, the management of artificial intelligence to apply more special legal norms. For example, it can be compared to minors, whose rights and behavioral capacity are restricted, and therefore require guardians to do their duty of supervision and management, while in artificial intelligence, the users and owners are responsible for supervision and management. Some scholars also advocate the "AI agency theory", in which he believes that AI can be regarded as an agent, which engages in certain legal acts according to the commission of the agent and completes certain tasks according to the orders of the owner or the user, so that the owner or the user can make profits. Therefore, when adverse legal consequences occur, it is the agent, such as the owner or user of the AI robot, who bears the corresponding legal responsibility.

The second is the negative statement. The negative theory indicates that AI does not have the status of an independent legal subject. Compared with human beings, AI does not possess the physical organization of the body, and AI does not enjoy the same rational and emotional consciousness as human beings. Although there are already companion AI robots that can express simple emotions, they are not the same as humans. Artificial intelligence can only be used as an auxiliary tool to improve the efficiency of human production and life, because the normal operation of artificial intelligence is dependent on the input of a large amount of human data, and according to a specific algorithm artificial intelligence can respond accordingly, which is also called "tool theory". At the same time, according to the principle of bifurcation of characters in civil law, the legal status of artificial intelligence either belongs to the legal subject or the legal object, from the perspective of tool properties, artificial intelligence is a product developed by human beings for the purpose of circulation in the market, that is, it should be regarded as an object, so artificial intelligence obviously belongs to the legal object and exists, and its instrumental value is also reflected in order to meet human needs so as to The instrumental value of AI is also reflected in the purpose of satisfying human needs so as to better benefit human society. In addition, the original purpose of creating artificial intelligence is to facilitate daily production and life, if the legal subject status of artificial intelligence is recognized, then when it really enters the era of strong artificial intelligence, it can independently make meanings, which is no different from human beings, and may even completely replace human beings, which will be a great challenge to the whole human society. Therefore, the scholars who support the negative theory think that AI should not be given the status of legal subject from the perspective of protecting human's own interests.

The third is the neutrality theory. The scholars in favor of the neutral theory say that artificial intelligence only has the qualification of legal subject under certain conditions. The legal subject in the civil law should enjoy civil rights and civil capacity, so it can be launched artificial intelligence can also

become a civil legal subject when the above conditions are met. For example, if an artificial intelligence such as a sweeping robot does not have independent thinking and the ability to think rationally, it does not have the civil rights capacity and does not meet the qualification of becoming a legal subject. For example, AlphaGo, the first artificial intelligence robot that defeated the Go world champion, not only has the ability to think independently and rationally, but also has the ability to learn deeply. Therefore, this powerful AI can be considered to satisfy the conditions of civil rights capacity and civil behavior capacity, and can become a subject of law.

The author prefers the negative statement. To qualify as a legal subject in civil law, it should have an independent name, will and property, as well as enjoy independent rights and assume certain obligations. First of all, as of now, the behavior of AI is based on human instructions, without human inputting a long list of codes and data into the computer, AI will not respond, so it can be seen that AI does not have an independent name and will. Second, when an AI is in a working state and causes damage to a person, it cannot bear civil liability such as compensation because it does not have independent property. Finally, the current civil code does not yet clearly stipulate that AI enjoys civil rights and is subject to civil obligations. Therefore, AI does not yet have the qualification of legal subject.

In 2017, Saudi Arabia announced the granting of citizenship to Sophia robots, which further triggered a rethinking of the legal status of AI in both academic and practical circles. From the current state of development of AI, AI has some independent thinking ability, and AI has basically replaced many repeatable jobs, such as AI customer service, drone delivery, intelligent translation, robot judges, etc. It can be seen that AI has some consciousness of its own and can make simple meanings. Based on this, some scholars propose that, with the continuous progress of artificial intelligence technology, it is entirely possible for artificial intelligence to surpass human beings and have completely independent rational thinking and even emotional expression like human beings. Therefore, the legal status of the subject of artificial intelligence should be affirmed. In recent years, artificial intelligence robots have also caused harm to people from time to time, which involves the issue of tort liability, whether the tort caused by artificial intelligence can be its own tort liability, which also further impacts the legal system of tort liability in the status of the subject of the act. However, the author believes that no matter how far AI technology has developed, it can only be regarded as an object of legal relations rather than a subject. First of all, without human beings, there is no artificial intelligence, and artificial intelligence always exists as an auxiliary tool. Second, the current AI does not have the full capacity of rights, behavior and responsibility. Moreover, from the current development of artificial intelligence, artificial intelligence will not affect the provisions of the current civil code on the types of civil subjects, and there is no need to update the types of civil subjects, artificial intelligence as a "person" in the legal sense. When the case of artificial intelligence causing damage to people, the existing tort liability legal system in the Civil Code, product quality law and road safety law can also solve the problem of tort liability determination. Perhaps in the future, artificial intelligence can fully simulate human beings themselves, not only has the biological structure of flesh, but also has the full capacity of rights and behavior, thus

expanding the existing types of civil subjects, but the current artificial intelligence is far from this standard, so in the case of damage caused by artificial intelligence, the determination of the status of the legal subject of artificial intelligence on the subject of tort is somewhat limited.

According to the aforementioned, the current classification of civil legal subjects in China's civil code is still fully applicable to the development of artificial intelligence, so we do not need to define artificial intelligence as a new civil subject. However, this does not mean that the legislation is unchanged, in order to solve many problems such as artificial intelligence causing damage, the legislation still needs to clearly deny the legal subject status of artificial intelligence, in order to follow up on the identification of tort liability and liability for compensation. At the same time, the legislator should also establish and improve the all-round regulatory system about the regulation of artificial intelligence, so as to prevent the occurrence of artificial intelligence tort cases as far as possible and to protect the flourishing of the artificial intelligence technology industry.

1.3. The impact of artificial intelligence on the object of infringement and response

The so-called tort object includes the civil subject's legitimate enjoyment of personal and property rights and interests. Artificial intelligence damage also belongs to a new type of tort cases, robots causing damage to people are accompanied by a new legal responsibility. As the application of artificial intelligence technology becomes more and more extensive, the tort liability arising from it also brings new challenges to the whole legal system of tort liability. For example, first, the development of artificial intelligence has impacted on the protection of personal information rights. Although the introduction of the Civil Code has completed the construction of the superstructure category of personal information protection, with the increasing number of personal information infringement cases of AI, especially in the context of today's Internet, the personal information of any one of us is exposed to big data, just like a completely transparent person. Jingdong monitors our shopping habits, 360 browser monitors our browsing history, Jitterbug pushes our favorite short videos in real time, etc. These processes of collecting personal information are often accompanied by the impact of artificial intelligence technology on the right to personal information. Therefore, it is particularly important to regulate the legal and reasonable use of personal information by AI under the civil law legal system. Second, the development of AI has adversely affected the protection of intellectual property rights. At present, AI can already create certain music, art, poetry and other works according to the needs of users, for example, Microsoft's AI product "Xiao Bing" has published a collection of AI poems "Sunshine Lost the Glass Window" in May 2017. This raises the question of who owns the copyright of the works created by AI, the developer of the AI product or the purchaser who enjoys ownership of the AI product? As mentioned earlier, AI cannot be regarded as a legal subject at present, and obviously as a legal object, it cannot enjoy copyright, which should be enjoyed by the purchaser, i.e. the owner. Thirdly, the development of artificial intelligence has impacted the protection of data property rights. Data property, as a new type of property, is mainly divided into personal data, enterprise data and public institution data, and in practice, artificial intelligence in the process of collecting and using

and reprocessing data, thus the subject of data property right has been cross-mixed, and it is difficult to define who owns the new data property right formed by the original data processing. In order to protect the data property rights of individuals, enterprises and public institutions as well as the data security of the whole country, it is urgent to improve the relevant legal system. The above list is only the impact of artificial intelligence on some of the objects of infringement legal relations, in order to better cope with the risk challenges brought by artificial intelligence, future legislation needs to further regulate the use of artificial intelligence technology.

1.4. The impact of artificial intelligence on the content of infringement and response

Compared with traditional tort cases, artificial intelligence tort is more complex in terms of the subject matter of tort, more diverse in terms of the manner of tort, and uncertain in terms of the principles of imputation, which determines that artificial intelligence will bring a huge impact to the existing tort legal relationship. For example, Google has announced that it is expected to develop a flying car within five years to realize the beautiful vision of the car soaring freely in the sky, which will completely overturn the existing tort legal relationship, the current tort liability law and road traffic safety law may no longer adapt to the determination of liability for traffic accidents of flying cars, which reflects the impact of artificial intelligence on the existing tort legal relationship in the future, the scope of artificial intelligence tort. This reflects the impact of AI on the content of existing tort legal relationships in the future, and the scope of AI tort is even broader, and it is worthwhile to further explore the issue of how to determine liability.

Artificial intelligence to cause damage to people there are two possibilities, one is due to the artificial intelligence products own function of defects in the consequences of damage to people, the Civil Code, Article 122 clearly provides that due to defects in the product caused by others, the producer shall bear tort liability, such cases can be applied to product liability; Second, the quality of artificial intelligence products are not defective, but due to the fault of the user caused damage to others Article 165 of the Civil Code provides that the perpetrator shall bear tort liability for damage caused by fault infringement of other people's rights and interests, such cases should be applied to general tort liability.

First of all, product liability applies to damage caused by defects in artificial intelligence products. The damage caused by defects in artificial intelligence products is only one of the types of damage caused by artificial intelligence, because it is similar to the principle of attribution of product liability, so it can be applied with reference to product liability. In the legal relationship of damage caused by artificial intelligence, the legal subject of responsibility is generally the producer, the seller, the transporter, the warehouse or the user of the artificial intelligence product at fault. In the current judicial practice, product liability is applied to a certain extent in cases of traffic accidents due to defects of driverless cars. Another example is the consequences of damage caused by household smart electrical, the victim can request the producer or seller responsibility. In practice, there have been several cases of artificial intelligence causing damage to people. On September 6, 1978, a cutting robot in a factory in Hiroshima, Japan, suddenly had a problem while cutting a steel plate and took a worker as a steel plate, which was the first robot murder

in the world. In July 2015, a worker in a German Volkswagen factory was hit in the chest by a robot while assembling and adjusting the robot that crushed against a metal plate, resulting in death. Similar incidents of casualties caused by AI robots have been reported in China. In November 2016, at the 18th China Hi-Tech Expo in Shenzhen, a robot named Fatty suddenly malfunctioned without instructions, breaking the glass of the booth, damaging part of the booth and injuring one person. The above cases are the legal consequences of causing damage caused by the existence of certain defects of artificial intelligence products themselves, and the similarities with product liability can be referred to the application of the principle of imputation of product liability, and obviously there is no dispute about the responsibility of the producer of artificial intelligence in law. However, the producer of artificial intelligence is different from the producer of ordinary goods, the producer of ordinary goods is easy to trace, while artificial intelligence due to its high-technology, it is often designed by different people, the subject of tort liability is more diverse, simple and brutal pursuit of the producer's responsibility is obviously unreasonable.

Secondly, tort liability applies to damage caused by the fault of the AI user. In general, the principle of the rule of fault liability applies when an AI user infringes on the personal or property rights and interests of others due to improper use. For example, if a user turns on a kitchen smart robot due to improper operation, resulting in injury to the person next to him, this situation is obviously due to the user's own tort and subjective fault, resulting in adverse damage consequences. In most cases, the AI itself generally does not have the consequence of causing damage to a person, but rather the liability is formed due to the user's fault. For example, if a driver of a driverless car improperly controls the operating system and causes a traffic accident, the driver should be held liable for tort damages under tort liability law and road traffic safety law. For example, the American Society of Motor Vehicle Engineers has divided the standard of autonomous driving into six levels from 0 to 5. Only driverless cars of level 4 and 5 are fully automated. If a driver is driving a Level 3 driverless vehicle on the road and is in the process of automatic cruising, and the driver does not notice the oncoming sprinkler due to the driver's head down playing with his cell phone and causes a traffic accident, it is obvious that the responsibility cannot be attributed to the producer of the driverless car when determining the responsibility of the traffic accident, because the Level 3 driverless car belongs to conditional automation, and after turning on the automatic driving mode, it also The manufacturer of the driverless car can not be blamed for the traffic accident, because the driverless car is an automated car and has done its duty to warn the driver to avoid danger. Therefore, the driver, not the manufacturer of the product, should be held liable for the consequences of the damage caused. The driver of the driverless car is responsible for the tort liability after the subject of liability is determined.

In the case of damage caused by artificial intelligence, should improve the identification of tort liability and bear the way, mainly divided into the main body of responsibility can be identified and can not identify the main body of responsibility in two cases. If the subject of responsibility can be identified, the subject directly by the tort liability; if the subject of responsibility can not be identified, the tort liability is shared by the relevant personnel, according to the principle of no-fault treatment. Because the development of artificial

intelligence products involves a number of different subjects, each subject may have a certain degree of responsibility for the consequences of causing damage to people. Of course, in the general case of damage caused by artificial intelligence, the producer is a well-funded compensation subject, but also the most direct danger controller of artificial intelligence products. Article 41 of China's product quality law also clearly provides for the occurrence of accidents caused by product defects, the producer to bear the responsibility for compensation, it can be seen that the producer should bear no-fault liability. This move is conducive to stimulate the production of the improvement of product quality and technical safety, to avoid unnecessary risk of AI tort. However, in practice, there are also some cases of infringement not due to the existence of defects in artificial intelligence itself. Article 186 of the Civil Code provides that if the victim and the perpetrator are not at fault for the occurrence of the damage, both parties shall share the loss, which is also known as equitable liability. This situation is due to the principle of fairness in civil law, so that the producer of artificial intelligence and all relevant subjects such as designers and users share a certain degree of responsibility in order to raise the awareness of subject responsibility and prevent and reduce the risk of damage caused by artificial intelligence. Compared with the producer, the user's ability to pay for tort liability is weaker, so in the case of AI product infringement, the user bears the fault responsibility, and the appropriate allocation of responsibility also helps to stimulate the user to fulfill the obligation of reasonable use.

In addition, in the future, artificial intelligence may surpass human intelligence and replace a large number of human occupations, so artificial intelligence is a technology with both benefits and risks. Once a case of damage caused by AI occurs, it may not always be possible to quickly trace the designer, manufacturer, seller, etc. of AI products, and the amount of compensation required may be huge, and it may be difficult for ordinary designers and others to bear the huge compensation responsibility. Therefore, in order to protect the legitimate rights and interests of victims, the compulsory insurance mechanism of motor vehicles can be introduced into AI technology. In China, motor vehicle owners or managers should take out compulsory third party liability insurance, and the state should set up a road traffic accident social assistance fund to guarantee that victims of traffic accidents are compensated according to the law. The purpose of establishing an insurance mechanism is also to reduce greater losses by paying a smaller amount. With reference to this insurance system, in the case of damage caused by AI, in the event that the designer is unable to compensate, the state can first pay with the social assistance fund and then recover the remaining amount from the responsible subject.

2. Summary

The era of weak artificial intelligence has come, and the era of strong artificial intelligence will surely come, the problem we need to solve is the identification of the status of the legal subject of artificial intelligence and how to deal with the case of artificial intelligence causing damage in practice, which requires continuous improvement of the legal system of the identification of tort liability and the way to bear it. At present, artificial intelligence does not yet have the qualification to become a legal subject, the existing legal system of tort liability and product quality law can still solve the problem of damage caused by artificial intelligence, artificial intelligence

only by the progress of technology is not enough to cause changes in the overall social relations, and the rapid development of artificial intelligence technology does not break through the adjustment of the civil law, but only in the face of the risks and challenges brought by artificial intelligence. Although the rapid development of artificial intelligence has brought a huge impact on the legal system, in order to better serve human society and prevent and resolve the risks and challenges brought by artificial intelligence, the author believes that a complete legal system regulating artificial intelligence technology can be formed from the three aspects of the subject, object and content of the legal relationship of tort, so as to expand the welfare brought by artificial intelligence to social production and life and To better defend against the new risks brought by AI and effectively regulate the development of AI technology.

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