Research on Legal Countermeasures for Artificial Intelligence Risk Prevention

Xiangxiu Wang[a,*], Lili Zuo[b]

School of International Law, Shanghai University of Political Science and Law, Waiqingsong Road 7989, Shanghai, China

[a]wxx5167@163.com, [b]349146458@qq.com

*corresponding author

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Abstract: The emergence and application of artificial intelligence has greatly changed people's life, study and work, creating tremendous productivity, but also bringing rule, social, governance and moral risks to society. It must be recognized that the necessity of risk prevention is not only an inevitable requirement of social governance, but also an era requirement for the transformation of social contradictions. In this regard, it is recommended that legislation in the field of artificial intelligence should be vigorously advanced, relevant laws and regulations should be revised; in law enforcement, we must grasp the initiative to transform government functions and ensure effective implementation of public policies; judiciary should keep pace with the times to balance the development of artificial intelligence with the protection of legal rights. In terms of law abiding, scientists should be advocated to adhere to conscience in development of universally beneficial intelligent products.

1. Introduction

The "China Internet Development Report 2018" shows that the scale of China's artificial intelligence industry reached 15.21 billion yuan in 2017, with a growth rate of 51.2%. It is expected that the industry scale will increase to 34.43 billion yuan in 2019[1]. The "Electronic Commerce Law", which was implemented on January 1, 2019, clearly stipulates the recognition of civil legal qualifications for intelligent service systems. As a product of the new generation of technological revolution, artificial intelligence has been deeply integrated into our lives.

All walks of life have begun to gradually taste the "sweetness" brought by the advancement of artificial intelligence technology. However, the development of things has two sides. While artificial intelligence technology brings great convenience and productivity to human beings, the risk crisis behind it is issuing warning signals and constantly challenging human society. Only by responding to the risks brought by the new artificial intelligence technology in a scientific, objective and cautious manner can we better enjoy the wisdom results of technological progress. Therefore, it is particularly important to speed up the research on prevention and control of artificial intelligence risks and legal countermeasures.

2. Strategic Positioning of Artificial Intelligence in the New Era

As early as the 1970s, China began to start research on artificial intelligence and included it in the national high-tech research program. After entering the new century, more attention has been paid to the development of artificial intelligence. Where, technologies such as computer vision, language recognition and language technology processing have developed rapidly and have entered the international advanced level. The notice of the State Council on "Made in China 2025" clearly points out the necessity to accelerate the deep integration of the new generation of information technology and manufacturing, drive the development direction of intelligent manufacturing, and adapt to the application and development of intelligent technology innovation and intelligent manufacturing.

In 2017, the Ministry of Industry and Information Technology released the "Three-Year Action Plan for Promoting the Development of the New Generation of Artificial Intelligence Industry (2018-2020)", which indicates that a new round of technological revolution and industrial transformation is rising, forming big data information and theoretical algorithms. Innovation, the enhancement of computer kinetic energy and the development of network facilities have pushed the development of artificial intelligence to a new milestone. Intelligentization has become an important direction for the development of technology and industry [2].

In the "2018 China Internet Development Report", Internet legal construction is selected and listed separately. Liu Shaowen, deputy director of Policy and Regulation Bureau, Central Network Office, pointed out that: First, cyberspace should not be considered as extraterritorial. Legal means are essential in cyberspace management. New legal relationships need to be regulated and adjusted by law. Second, countries around the world are beginning to step up their efforts to effectively influence rule of law on the Internet. Of course, China should not be excluded. Countries around the world have enacted laws and regulations on key information infrastructure protection and digital trade [3]. In the 21st century world, competition among countries has become information competition, science competition and technology competition. Whoever has the most advanced intelligent technology is the leader in the era of globalization. Artificial intelligence has become a favorable weapon for building a network power in the new era, also one of the core competitiveness of world powers in the new generation, so its strategic position is obvious.

3. The Risk Caused by Artificial Intelligence

The emergence and application of artificial intelligence has brought unprecedented impacts and challenges to established legal rules, social governance and ethical standards. The uncertainty, complexity and universality of artificial intelligence development pose a series of risk challenges for people and society. We must take the risk issues behind scientific and technological progress seriously, formulate predictive mechanisms and risk prevention and control measures in advance, strengthen supervision and monitoring to ensure safe and healthy development of artificial intelligence technology.

3.1. Rule Risk

China has now formulated a complete socialist legal system with Chinese characteristics. The system has enabled a historic leap from no laws to abide by to there are laws to abide by in China. However, the rapid development of artificial intelligence has caused a series of impacts on the legal norm system.

In terms of civil privacy protection, it seems that everyone has their own privacy space as every person has one phone. In fact, the big data analysis collection behind it has exposed the privacy of each of us to the sun. Data collection and analysis, if used improperly, will pose a privacy threat to people. So how can people's privacy be further protected? Can people exercise their right to be forgotten to protect their privacy? For example, on March 18, 2018, Cambridge Analytica was pointed out that it improperly analyzed 50 million individual user profiles on Facebook and interfered with the 2016 US presidential election.

In the field of Tort Liability Law, whenever an accident is created by a driverless car or an intelligent robot, can an intelligent robot have civil qualifications to assume responsibility? The "infringement" of artificial intelligence robots cannot simply assume that their manufacturers are responsible, and the algorithm programs behind may be jointly developed by many subjects with complex responsibilities.

In terms of intellectual property law, it was reported that in May 2017, Microsoft's artificial intelligence robot "Microsoft Xiao Bing" was able to create intelligent effects, who published a series of poems "Sunshine Lost in Glass Window". In 2018, more news was reported that it had made columns, lyrics and new songs. Independent creation of music and painting by robots is no longer a novelty. The issue of intellectual achievements behind brings a new round of problems and challenges to the theoretical community.

Although Asimov's "Three Laws of Robotics" was proposed 76 years ago, it still stimulates the world's thinking about the safety of artificial intelligence. These three laws are often referred to as "Asimov's Law" with contents as follows: First, the robot must not harm people, nor can it stand by when seeing people are hurt; second, the robot should obey all human orders, but must not violate the first law; third, the robot should protect its own safety, but must not violate the first and second laws [4].

Therefore, while developing artificial intelligence, it is necessary to ensure that it works within the framework set by humans to prevent it from breaking the rule. In January 2014, Google acquired Deepmind Deep Learning Company. According to the regulations in the transaction, Google must establish an artificial intelligence ethics committee to ensure the wise use of artificial intelligence technology. Although the specific details of the committee are unknown, the establishment of such a protective measure is still an important benchmark [5].

3.2. Social Risk

The change of artificial intelligence to people's lives will be all-dimensional. The Internet has re-established human communication models, consumption patterns and working methods by changing the way information is transmitted. On the one hand, artificial intelligence technology has gained rapid progress, widely used in electronic engineering, computer networks, service industries, etc., and providing strong technical support for medical services, communication facilities and financial payments. From a practical point of view, the expertise of artificial intelligence robots can solve problems such as answering calls, voice customer service, identification, document translation, language transition, travel, and even case studies. According to some statistics, 23% of the lawyers' business at this stage can be completed by artificial intelligence [6]. Some scholars have said that "the ones that are being eliminated are not 'we', but our current work [7]." This optimism has its rationality, but there is still unignorably possibility that artificial intelligence robot may cause large-scale unemployment in the future.

On the other hand, the artificial intelligence revolution is not simply to assist human decision-making and improve the efficiency of social services, but is more like an intellectual upgrading movement in human society [8]. Once an artificial intelligence machine is given "consciousness," it can not only think independently, but also act on its own without human control. On March 8, 2017, Stephen Hawking told the British newspaper "The Independent" that human beings must establish effective mechanisms to identify threats as early as possible to prevent further escalation of threat posed by new technologies (artificial intelligence) to the humanity [9]. Researchers have found that machines are gradually starting to learn by themselves, and even have their own attitudes. If they are put into the market with their own thinking ability as described in the movie, "when robots become complex enough, they are neither human servants nor human masters, but human partners [10]." Human freedom is confined within a certain legal framework. Similarly, once beyond people's control, artificial intelligence machines will have independent decision-making ability by its own algorithmic logic and become the master of its own decisions. Then, things will become extremely complicated.

3.3. Governance Risk

Law, policy and ethics all act as superstructures, which play a role in regulating and coordinating social behaviors. They complement each other and help build up the entire human community. However, the risk of artificial intelligence brings uncertainty to social governance beyond the scope of current social norms. Unlike other disruptive technologies, the development of artificial intelligence is not limited to specific industries, but is a common technology that can support all industry changes [11]. Governance issues that permeate all aspects of society do not require improvement in a part of governance, but involve multiple aspects.

From a historical point of view, from industrial revolution period which advocates "treatment after pollution" to today's greenhouse gas emission reduction actions, social governance often lags behind the development of advanced science and technology. This is also determined by its basic functional positioning, and social governance methods are often "conservative". For example,

control function and disciplinary mechanism of legal means are the means and tools providing people with security needs. After speculating and observing social phenomena for a period of time, they will "pull back" technology to a certain extent and regulate its development track to control governance failure. Therefore, emergence of artificial intelligence risk poses a challenge to the overall governance of society. At the same time, artificial intelligence governance is not simply at a single level, but involves a wide range, deep depth and demands comprehensive, full, multi-level governance.

3.4. Moral Risk

Intelligent robots operate fully according to the rules of procedure input by the programmer. They do not have independent thinking ability under the control of the program, but just "objects" piled up by massive data codes. However, it is worth noting that the code and algorithms input by the programmer are value-oriented. That is to say, these input code algorithms are endowed with personal ethical emotions and social value choices of programmers, which exactly embody certain goals and preferences [12].

With the rapid development of the scientific and technological revolution, big data flattens people's interactions, life and work, and people have easier access to diversified and rich information. Massive information seems to satisfy people's needs, but disorderly and chaotic social phenomena and values will also swarm in. The evil of human nature will also be exposed, leading to chaos and blind follow-up in personal value choices, and even affecting government ruling power. Once artificial intelligence replaces labor in large scale in the future, large-scale unemployment will occur. The loss of job for the survival of the laborer means the loss of significance for human existence, which forms a tremendous impact on the development of humanistic ethics and humanistic spirit, and will lead to a deeper social crisis.

4. The Necessity of Artificial Intelligence Risk Prevention

4.1. The Inevitable Requirement of Social Governance

In recent years, the state has always stressed the need to strengthen social governance and continuously improve the level of governance. The development of artificial intelligence requires that we should speed up the pace in social governance and do a good job in risk prevention. "Technology-risk" supplements each other and requires joint management. Countries and international organizations around the world are rushing to join the new round of "position-taking battle", and artificial intelligence technology governance has increasingly become part of global governance. China is already in the forefront of the world in technological exploration in certain areas of artificial intelligence, and some areas have even become "no man's land". Innovation drives development, and governance should not fall behind. We must seize this great opportunity, take advantage of the trend, swim against the stream, meet challenges and difficulties, and contribute to the improvement of the country's right to speak and the level of comprehensive national governance.

Driven by new theories and new technologies such as mobile Internet, big data, supercomputing and sensor networks, the application of artificial intelligence has brought a major impact on economic development and social progress, greatly improving the level of social intelligence management, and providing powerful engine power for public service and city management. More and more cities are actively using the new generation of artificial intelligence technology to serve urban intelligent management and vigorously advance the pace of smart city construction. For example, Hangzhou City uses Alibaba Cloud artificial intelligence technology to create an "urban brain" and actively applies it to traffic evacuation issues with gratifying results achieved.

Development may cause problems, but development itself is not a problem. Similarly, the development of artificial intelligence may bring a series of problems. In the next few years, artificial intelligence may become the "chief culprit" that replaces many professions and destroys human beings' way of making a living, but its development is not a problem in itself. There are not

only current risk problems, but more harm may appear in the future. It is impossible to make a final conclusion. However, positive response in law is needed as soon as possible to incorporate artificial intelligence related legal issues into the scope of adjustment, so that we can actively respond to uncertainty challenges in the future, keep up with the pace of the times and constantly improve comprehensive governance ability.

4.2. The Requirements of the Times for the Transformation of Social Contradictions

The development of any science and technology is inseparable from the background of the times. In his report to the 19th National Congress of the Communist Party of China, General Secretary Xi stressed that socialism with Chinese characteristics has entered a new era, and the main contradictions in our society have been transformed into contradictions between the people's growing needs for a better life and imbalanced, insufficient development.

To a certain extent, the development of science and technology reflects people's pursuit of the value of increasingly better life, conforms to the pursuit of the goal value of contradiction transformation in the new era, brings great convenience to people, and causes tremendous production power to the society. However, "good life" not only meets the conditions of material life, but the deeper demand is to pursue a more efficient, convenient, safe and healthy living environment. Where, security needs are indispensable. Pursuing peace is the lifeblood of Chinese traditional culture, and moreover, the long-cherished wish of the Chinese people. While bringing intelligence and convenience, artificial intelligence has brought impacts and challenges to all aspects of society, creating hidden safety hazard for people. If the prevention and control of artificial intelligence technology is not in place, it may lead to terrible social phenomena such as "information disclosure", "privacy exposure", "technology flooding" and "value distortion", which not only fails to meet the needs of a better life, but also causes massive social instability and regression.

Artificial intelligence represents uncertainty in the future. This requires prevention and control of already obvious threats and upcoming hidden threats in the future, recognition of the transformation of major contradictions in the real society and preparation for prevention as soon as possible.

5. Legal Countermeasures for Artificial Intelligence Risk Prevention

The 2018 World Artificial Intelligence Conference proposed that we should put development first, and at the same time make preparation in corresponding systems, laws, norms and standards [13]. Artificial intelligence is a double-edged sword featuring uncontrollability, complexity and extensiveness. It requires us to actively carry out risk prevention, foster strengths and avoid weaknesses, make reasonable regulation and adjustment in aspects of policies, laws and social ethics. We should seek "good intelligence" for human benefits through "good governance" of artificial intelligence [14].

5.1. Vigorously Accelerate Legislation in the Field of Artificial Intelligence and Amend Relevant Laws and Regulations

"If China only focuses on technological imitation, but ignores institutional construction, the late-starting advantage may turn into late-starting disadvantage [15]." Mere focus on technology progress and application is insufficient. Although the law sometimes lags behind, law must not be absent. Relevant departments must speed up study of legal theory, pay close attention to social reality, prepare for the challenges of new technologies, and further improve China's legal system with socialist characteristics. For example, in our preparation to formulate a new civil code, we should take into account the possible series of challenges brought by artificial intelligence, formulate corresponding legal rules in a timely manner, and keep pace with the times to make it a 21st century civil code [16].

The legislature needs to change the traditional rule of law thinking mode, as the development of artificial intelligence technology has raised new issues for many substantive and procedural laws. For instance, "imputation" of "unmanned driving", the status of legal subject of artificial

intelligence robots, the attribution of intellectual property achievements, etc.. The relevant departments need to speed up the research pace in artificial intelligence related law, formulate artificial intelligence-related risk prevention law based on "E-commerce Law" and "Network Security Law". It is necessary to speed up research on legal, ethical and social issues related to artificial intelligence, and establish and improve laws, regulations and systems. Only by legal framework-based regulation can we conform to the requirements of change of the times.

It is necessary to adopt "three way actions": prevent beforehand, supervise in the act and post-regulate, establish relevant legal supervision institutions to guarantee the vitality of law enforcement. The problem of artificial intelligence risk is unprecedented, which only lived in science fiction. Nowadays, however, "science fiction has become a reality." Human beings' supervision and control of the unknown field is uncertain and unclear. The research and development activities of artificial intelligence are the key to the development of artificial intelligence. Disposition of behavior damaging legal rights in normal R&D should reflect modest and restrained principle of criminal law and avoid pre-criminalization [17]. Process detection should be increased in artificial intelligence research and development during beforehand prevention, evaluation system and test feedback should be strengthened in supervision in the act, punishment should be strengthened in post-mortem supervision to give play to the role of legal disciplinary action and deter artificial intelligence technology R&D companies and researchers.

5.2. Grasp the Initiative to Transform Government Functions and Ensure the Effective Implementation of Public Policies

The report of the 19th National Congress of the Communist Party of China proposed to build a network powerhouse and required the overall improvement in government governance capabilities and public service levels while promoting the deep integration of the Internet, big data, artificial intelligence and the economy. This requires the government to actively accelerate functional transformation, improve relevant support policies, implement enforcement in artificial intelligence, actively formulate various matching technical specifications and technical standards in the field of artificial intelligence, and improve overall governance capabilities to better serve the risk society under advancement of science and technology.

Strengthen the social security system. For labor groups who lose job under the impact of artificial intelligence, the government should actively give play to the role of social security and do a good job in basic social insurance services. China is a labor-intensive country with a big population, and unemployment risk is particularly prominent in China. The government should do a good job in overall planning as soon as possible, and establish a prevention mechanism for unemployed people in advance. Efforts should be made to vigorously encourage the development of emerging service industries, create more job opportunities and prevent large-scale unemployment.

Formulate a biased taxation policy. The impact of artificial intelligence technology is highly biased. Companies that master artificial intelligence technology and big data information will be the biggest beneficiaries, and unemployed workers will bring a new round of polarization between the rich and the poor. The development achievements of artificial intelligence technology should universally benefit all human beings. Each advancement in science and technology should also aim to build a happier society, rather than monopolized by the few technical companies or technicians. In terms of taxation, a biased policy should be formulated to increase taxation on large enterprises, and tax revenues should be used in a new round of work to provide workers with learning, training and social security.

5.3. Advance with the Times, Balance the Development of Artificial Intelligence with the Protection of Legal Rights

According to the "New-Generation Artificial Intelligence Development Plan" issued by the State Council in 2017, China would focus on the hot and difficult issues in social governance, including judicial management, promoting the application of artificial intelligence technology, and advancing the modernization of social governance. In July 2015, the Supreme People's Court first proposed the establishment of a "smart court" to promote the intelligence and modernization of the trial system

and to improve the trial capacity. After more than two years of exploration, in March 2018, "Shanghai Case Handling System for Criminal Case Intelligent Assistance" officially began trial operation. In addition to Shanghai, Shanxi, Anhui, Fujian, etc. have begun to try to apply this system to help handle cases. The introduction of artificial intelligence analysis into the process of case handling can assist procurators in evidence capture and factor comparison. It can also assist judges in collecting statistics of relevant suspects, collecting and analyzing data on growth experiences, criminal records and crime rates in their living areas, thus judging the possibility of re-offending.

With the rapid development of artificial intelligence technology, intelligent law enforcement and judicial methods based on data and algorithms that reflect the development rule of intelligent Internet will become a revolutionary trend of social governance [18]. The development of artificial intelligence rule of law must not only guarantee advanced development of technology, but also safeguard exercise of citizens' legitimate rights, maximize the balance between the two, and achieve unity in flexibility and principle.

The judiciary must "determine responsibility" and "investigate responsibility" according to law in a timely manner. In the field of "determining responsibility" according to law, the first is the two fields of criminal and civil trials, followed by administrative trials. It should support the administrative department in carrying out its work, and also support the common people in filing lawsuits against the government and relevant departments in accordance with the law to ensure the law-based administration of the government at all levels. The development of the big data industry requires "application first". At the same time, it should not blindly pursue "bigger, more and faster." This requires the judicial department to adopt a low-cost, low-energy and benign development path to safeguard the public interest and the fair rule of law.

5.4. Adhere to the Conscience and Develop Universally Beneficial Intelligent Products

Science is borderless, but scientists have national boundaries. In the field of law-abiding, as scientists of the people, when designing artificial intelligence products, they should have a strong sense of responsibility and a strong sense of mission to the future of the country, society, nation and mankind. Entrepreneurs can't seek nothing but profits, they can't design any product demanded by the market, but stick to the bottom line of morality.

Artificial intelligence is a new high-tech in the new era, and people's expectations for technology are still rising. Scientific workers are the lifeblood of science and technology, so their status and role are self-evident. This requires scientific workers to develop new technologies based on social needs and value choices, adhere to the correct direction, and work hard under the guidance of the party and the government to realize their own value in the great cause of socialism, and research science and technology benefiting the mankind. They should adhere to the conscience, do not go against the right path under interest temptation, meet the challenges of future uncertainty with strict self-discipline, truth seeking from facts, hard work, and unremitting work attitude, and shoulder the social responsibility and responsibility of the times.

6. Conclusions

The development of artificial intelligence has greatly exceeded the expectations of human beings. Although technology itself is neutral, the risks caused by technology are not neutral, but destructive and unpredictable. Therefore, human beings must more cautiously regard scientific and technological progress, face risks with rational thinking, and actively respond to challenges. It is necessary to realize that although the role of legal means is rock-solid in social governance, law is not omnipotent, and the rule of law cannot be over-amplified.

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