

Правовое регулирование сохранения культурных ценностей в рамках частного права в эпоху искусственного интеллекта

Precautions of the disappearing of cultural values and perseverance of cultural values under the private law in the era of artificial intelligence

Шэн Пэйчжуо,

Школа интеллекта и компьютера,
Тяньцзиньский университет, КНР
pangdongmei71@163.com

Чжу Сюэлинь,

Школа иностранных исследований, Университет Ланфан, КНР
pangdongmei71@163.com

Ван Чуньмэй,

Юридическая школа, Тяньцзиньский университет, КНР
pangdongmei71@163.com

Sheng Peizhuo,

School of Intelligence and Computer,
Tianjin University, China
pangdongmei71@163.com

Zhu Xuelin,

School of Foreign Studies,
Langfang Normal University, China
pangdongmei71@163.com

Wang Chunmei,

Law School, Tianjin Normal University, China
pangdongmei71@163.com

© Шэн Пэйчжуо, Чжу Сюэлинь, Ван Чуньмэй, 2021

DOI: 10.17803/2587-9723.2021.4.105-113

Abstract. Neither every dramatic change in ways of production and living, nor the renovation of cognition and culture in human history are not the result of science and technology revolution. Private law culture, important part of human organizational culture and legal culture, is based on humanity, freedom and equality, justice, order and harmony. Present Artificial intelligent revolution will not only change human way of living and developing, but also affect private law culture dramatically and destructively, which will affect human beings as a whole and may lead to devastating destroy to humans. Firstly, individuals become digital persons under two-tier space structure, under which self will not be an end, but a device and means to be used by humans. Humans and machines coexist, which promotes artificial machines to become subjects, to a great extent. The modern somatic technology may create somatic, emotional or intelligent supermen, furthermore, an inequality between supermen and normal humans will result in reification and objectification of the latter. Secondly, data hegemony may arise from the algorithms and data which are becoming resources, which will make natural persons lose privacy, personal lives, personal space and critical abilities, in the end, natural persons will become transparent ones, furthermore, freedom of the private law will be fading away. Thirdly, data decision-making replaces human decision-making, and algorithm equality replaces formal equality. However, the algorithm black box, the value deviation of built-in program code and deep learning of intelligent machines may lead to permanent prejudice and discrimination against subjects, giving rise to overused algorithm, completely challenge and deviate from fairness and justice that private law seeks for. Therefore, it is necessary to prevent the theories systems and rules the private law from losing cultural values so as to develop high technology, live up to the expectation of humans

for a better life, and produce an orderly and harmonious society, which is an important goal of developing an intelligent society: First of all, humans are the main users of technology. The negative effect of technology application is based on perception and morality of human beings. The loss of private law cultural values, caused by the development and change of precaution technology, forces people to consider related perception and ethics, absorb various cultural values, maintain, uphold and advocate technological humanism, guide the development and practical application of artificial intelligence technology with ethical goodness, construct scientific humanism, and integrate science -technology and humanity. Secondly, the value of justice is relative and developing, which requires integrating the concept of data justice, code justice and algorithm justice into the value and basic principles, providing a new standard of justice for the freedom and equality of the private law, weakening and eliminating data hegemony and algorithm discrimination so that free value and equality of the private law will be recovered. Finally, Related concepts and principles must be included in systems and rules so that the private law subject system is reshaped, the private law subject status of intelligent robots is accepted completely or partly, and the subject-object confusion caused by human-computer symbiosis is removed. Moreover, the legal behavior system must be changed so that the civil subject's online and offline behavior and man-machine collaborative behavior are integrated and standardized, and the potential risks of the harmonious private law order are eliminated. Furthermore, legal right systems are updated and restructured, so that legal attributes and uses of data and information are redefined or reorganized reasonably, and the protection of data, information and privacy are strengthened. Last but not the least, the basic imputation principle and causality of civil liability must be renewed so that the liability risks caused by human-machine coordination and the independent behavior of intelligent machines are distributed reasonably, and compensation systems are improved.

Keywords: artificial intelligence, civil subject, cultural values under the private law, freedom , equality
Fund project: This paper is part of Project No. 18BFX113 of the National Social Science Foundation entitled The Research on Subjectivity Related to Artificial Intelligence and Regulations under Private Law.

Science and technology is the source of human prosperity and civilization progress. Furthermore, scientific and technological revolution is the fundamental driving force for the phased progress of the human society and the evolution of civilization. Humans have been passing through three technological revolutions in history and is now facing the fourth technological revolution, which is another major change in human cognition and information technology, and which will break the law of human natural selection and be replaced by intelligent design rules.¹ Hence, the era of wisdom is around the corner.

Compared with the previous scientific and technological revolution, the current intelligent information technology revolution will not only fundamentally change the way of human living and development, but also have a profound impact on people's views of life, value, ethic, culture, science and technology, philosophy,² which will affect mankind both positively and negatively. How to avoid its negative effects will be an unsettled problem to us.

As far as the private law is concerned, the intelligent information technology revolution will not only greatly affect and challenge the traditional private law system and theory, but also weaken two core values — freedom and equality--- in traditional private law culture to a great degree, with the

result of stripping and weakening the humanistic foundation of the private law, losing the dominant position of humans in the private law, and finally shaking and even subverting the entire private law system. Therefore, as the era of wisdom develops, in order to live a better life of wisdom, we must fully understand, avoid the subversive impact that the disappearing of the cultural values under the private law have on human private law society and private law life.

1. A brief development history of human cultural values during science and technology revolutions

In Choen's book *Revolution in Science*, he points out that since the beginning of the 18th century, the word "revolution" has been "not only related to the government, but also to ideas and cultural undertakings, especially in the development of science".³ He maintains, "Revolution is a sign of political change, social change and economic change, and it is widely recognized that revolution is also a sign of scientific change".⁴

However, it has been shown in human history that every essential change in production and way of life,

¹ Yuval Noah Harari. *A Brief History of Humankind* / translated by Lin Junhong. Beijing : CITIC Press Group, 2014:375.

² Lin Dehong. *Fifteen Lectures on Philosophy of Science and Technology*. Beijing : Peking University Press, 2004: 241.

³ Cohen B. *Revolution in Science* / translated by Lu Xudong & Zhao Pei Jie. Beijing : Commercial Press, 2017 : 91.

⁴ Cohen B. *Op. cit.* P. 92.

every great change in social order and social system, and every renewal of values in cognition and non-material culture is only the result of a major scientific and technological revolution. Human beings have material and non-material duality.⁵

Human material needs and existence is superior to its non-material needs and existence, and the former is the base of the latter, while the latter is more profound and advanced. Hence, major scientific and technological revolutions in human history affect material culture, then affect non-material culture, that is to say, those revolutions affect and change production and way of life of people obviously and directly, and then change human cultural values implicitly and progressively.

Natural survival is the earliest and most basic way of human survival. In the primitive natural survival stage, i.e. the first stage of natural survival, nature provides certain materials for the survival and development of human beings, human beings mainly collected and hunted for a living, wholly depending on the change of nature. Humans in this stage have no ability to produce organisms, let alone the understanding and adjustment of nature.

Following that stage, in the stage of natural survival partly depending on agriculture, human beings began to domesticate more and more plant and animal species. Because a large quantities of living things become extinct, humans created livestock, a new form of life. Thus, the agricultural revolution led to the first change in the way of human production and life.⁶ After that, "The natural growth of plants and animals developed into agricultural and animal husbandry production state."⁷

The way of human life develops from migration life to settlement life. However, because natural survival still mainly depends on biological resources, still relying on the natural conditions of nature and the natural conditions of human beings themselves, it is not only impossible to effectively solve the two basic contradictions between the infiniteness of human needs and the limited nature of natural resources,⁸ the infinite nature of human needs and the limited ability of individuals, but also human beings lack subjective initiative and the desire for innovation, inevitably surrender to the authority of nature, so that they beg and rely more on God-given and natural blessings, with the result of forming the natural worship which is naturalism in terms of the relationship between man and nature, and which is the primitive humanistic agricultural culture in cognition.

Confucius and Zhuangzi's expressions—"cure it inside, but not outside it" and "nothing tired", that is, "seeking virtue without seeking things"—are the representative of this cultural value. However, settlement life also limits the scope of human activities, and most people begin to have "their own home" so that the boundaries with other species begin to appear, and humans begin to develop towards self-centered organisms.⁹

However, it should be noted that although the agricultural revolution brings about the first change of human production and way of life, but the agriculture and animal husbandry is still biological production. Although human beings, in the material creation activities, began to gradually replace natural things and human beings themselves with artificial objects, so that human beings began to release from labor, but the technology as a whole was not separated from the laborers and didn't exist independent of materials.

As a whole, the first change in human production and lifestyle and the formation of naturalistic cultural concepts are not the result of scientific and technological changes or revolutions. Only in the modern industrial revolution does the power of scientific and technological revolution begin to really appear.

Although the signs and situations of the two industrial revolutions in modern times are different, the energy is converted into their common core, which has greatly solved the shortage of human energy and raw materials, and made science and technology serve the production process directly for the first time, which has triggered the booming human productivity, thus brings the important turn from traditional agricultural society to modern industrial society.

On one hand, agricultural industrialization has reduced the requirement of a large amount of labors, on the other hand, the remaining labors crowded into cities and promoted the development of urban large-scale industry and commodity production, the state and the market have replaced families and communities and become an important sources of power, individuals have begun to have roots in the state and society, becoming a subject of independence, freedom and equality, in the end, commodity exchange and consumption became the basic way of their survival. In this process, technology is completely separated from the laborers' corporeal forms and independent of human labor organs, which become the human way of behavior, creation

⁵ Lin Dehong. Op. cit. P. 22.

⁶ Yuval Noah Harari. *Homo Deus: A Brief History of Tomorrow* / translated by Lin Junhong. Beijing : Publishing House of Electronic Industry. 2017 : 71.

⁷ Lin Dehong. Op. cit. P. 286.

⁸ Lin Dehong. Op. cit. P. 286.

⁹ Yuval Noah Harari. *A Brief History of Humankind*. P.2014:95.

and survival,¹⁰ and survival of human beings are transformed from nature stage into technical stage.

With the help of objects created by technology, human beings not only improve their ability to understand and transform nature, but also improve and strengthen human abilities not by themselves by virtue of technology so that machines become objects of worship and technical culture can be generated, combined with science and culture, and develop into the leading culture of industrial society — science and technology culture, advocating that science and technology is a great force and the first productive force to promote social progress.

However, on one hand, because modern science and technology itself was originated from the European Renaissance Movement, when the modern literary and artistic revolution was appearing, on the other hand, there was no clear professional restrictions and division of labor, most of the people engaged in scientific and technological research are very knowledgeable, with a high humanistic quality. As Engels points out in his assessment of the Renaissance: “This is the greatest, progressive change that mankind has ever experienced, an era that requires giants and produces giants — giants in terms of thinking, enthusiasm and character, versatility and knowledge.” ... The heroes of that time had not yet become slaves to the dividing labor, which restricted people and had one-sided effects that we often saw in their successors.¹¹

Therefore, while modern technicalism, science and technology culture advocate science and technology as the first productive force, the people-oriented people advocated and respected modern humanism, regarded human beings themselves as the object of worship and the center of the universe; regarded justice, freedom and equality as the source of meaning and authority of human survival, which has been affecting and guiding the development of science and technology, providing and accumulating a profound foundation and heritage of human culture. However, the two cultures are beginning to show some kind of unbalanced development.

Since the 1950s, with the development and popularization of computers and the Internet, human society has been involved in the information revolution,¹² the third industrial revolution in history, and after experiencing mechanization and electrification, humans entered into the information

age. In fact, with the popularization and application of scientific and technological inventions such as papermaking, printing, telegraph and telephone, there have been many cognitive and information revolutions in human history.

However, the information technology revolution represented by computers and the Internet not only solves the problem of overloading human memory, but also makes more informationized, immediate and convenient communication, and information itself becomes a shared resource and property, as well as the “new economy” of the Internet becomes the focus of economic growth and recovery.

At the same time, human beings began to go beyond physical space and into the infinite virtual space created by the Internet. the multi-intersected, closed free “circle of friends” could be built on wechat, Micro-blog and other new media,¹³ thus expanding and complicating the human social network and its scale to a considerable extent, the internet life has become a basic way of life and a normal phenomenon in the Internet age. In the virtual space created by the Internet, third-party payment, crowdfunding mode, virtual currency and other new business patterns affect business model, trading methods, equity relations and operational management methods dramatically of the traditional single physical space, resulting in a large number of emerging rights, and leading to old and new rights conflict, changing and reorganizing interest patterns and human ways of life and survival, but also deeply changing and shaping people’s values and cultural perceptions.

There are diverse social forces and social subjects on the internet, such is interests and values. Every subject can participate in national governance and public life with the help of various new models and platforms, everyone can be editor and journalist to publish information and discourse expression,¹⁴ realizing self-shaping and sharing of values, and sharing has become a new value and a kind of culture in the Internet age.

At the same time, the information technology revolution caused by the rapid development of information technology, biotechnology and new materials technology will bring about a third revolution in the way of human production and life.¹⁵ The development of information technology makes the Internet proceed from publishing and interactive models to survival one, and the barrier between

¹⁰ *Lin Dehong*. Op. cit. P. 226—217.

¹¹ *Engels*. Natural Dialectics / translated by Yu Guangyuan, et. al. Beijing : People’s Publishing House, 1984: 6—7.

¹² *Zhang Jiangjian*. Intelligent Wave. Beijing : Chemical Industry Press, 2019 : 73.

¹³ *Ma Changshan*. Deconstructing and Rebuilding Law Order in Internet plus Era // Exploration and Free Views. 2016. (10). P. 40.

¹⁴ *Ma Changshan*. Two-way Construction of Order in the Internet Era Tribune of Political Science and Law // Chinese Journal of Law. 2018. 1. P. 133—134.

¹⁵ *Lin Dehong*. Op. cit. P. 248.

physical and virtual worlds is completely eliminated,¹⁶ human beings can seamlessly switch to virtual and realistic “dual space”; isolated things in the physical world can also be extended into the virtual world and everything could be connected on the internet; algorithms become the core, and information and data become resources, which creates a new digital economy form based on the network platform, and creates a new social model of human-computer symbiosis and intelligent interaction.¹⁷

And “digitalization can virtualize everything”,¹⁸ virtual survival has become a new form of human survival.¹⁹ As Niglo Ponti put it: “Computers are no longer just computers. Computers do determine our existence”, so that mankind enjoys unprecedented freedom, but the power of the state has not been reduced, which is a two-way increasing strange phenomenon.²⁰

Not only that, this intelligent information revolution caused by the development and application of high technology is more likely to have a great impact on human beings themselves. On one hand, human intelligence is replaced or optimized, and the limitations of human brain are surpassed, on the other hand, human beings are transformed from the subject of technology into the object of technology, and human life and body are technicalized.²¹

Modern science and technology culture is coming into being, and negative effects of technological “double-edged sword” are appearing, human freedom, equality, fairness, justice advocated in human culture, and even human beings themselves, may be recognized, so that established experiences and cognitive precipitation in all the associated human evolution, are challenged subversively.²²

2. The impact of the intelligent information revolution on cultural values under the private law and the disappearing of cultural values under the private law

Human beings themselves have cultural attributes. Furthermore, private law culture, an important

component of human system culture and legal culture, is based on humanistic care, with freedom and equality as the core value, for the purpose of fair justice and harmonious order, making outstanding contributions to the construction and development of political order, economic order, social order. However, the private law culture is facing the challenge of the disruptive destruction and impact with the development of artificial intelligence and the information technology revolution. In a sense, this kind of destruction and impact is essentially on human beings themselves and even devastating to human beings.

Firstly, the “double-layer space” structure and human-computer symbiosis will result in the dual loss of nature and subjectivity of civil subjects. In thousands of years of the private law life, civil subjects have always been living in the one-dimensional real world, keeping physical contact by touching each other and speaking language in the real world, with basic understanding, knowledge and trust between each other, and it is these “people” in the real world and their behavior that have become the object of the private law. Although the civil legal acts carried out by the subjects related to each other in the real world may not fully express the free will of the subject, realize and meet the demands of the subjects, they can still manifest the subject’s self — nature and their value claims.

However, in the era of Internet and artificial intelligence, the activities of civil subjects extend from physical space to network virtual space, while living under the dual framework of “physical world— digital world, real life-virtual life, physical space-electronic space”,²³ which fundamentally challenges civil subjects: First, data becomes the center of the world, everything of civil subjects becomes the object of big data or algorithms analyzed and quantified,²⁴ and the civil subject is remodeled into data man, which no longer regarded self as a purpose, but regarded self as devices and tools. Some scholars put, “Using algorithms to deal with some of the activities unique to human beings may result in the loss of the most fundamental human nature in these activities”.²⁵ Second, human-machine coordination and human-

¹⁶ Brockman J. Digerati — Encounters with the Cyber Elite / translated by Wang Zhong, et. al. Haikou : Hainan Press, 1998. P. 157.

¹⁷ Ma Changshan. Legal Transformation in the Era of Intelligent Internet // Chinese Journal of Law. 2018 (4) : 21—22.

¹⁸ Lin Dehong. Op. cit. P. 256.

¹⁹ Negroponte N. Being Digital / translated by HuYong & Fan Haiyan. Haikou : Hainan Press, 1996 : 15.

²⁰ Yang Yanchao. Robot Law — Building a New Order for the Future of Human. Beijing : Law Press, 2019 : 4.

²¹ Lin Dehong. Op. cit. P. 249, 257.

²² Wang Tianyi. Artificial Intelligence Revolution: History, Present and Future. Beijing Times Chinese Press : 192.

²³ Ma Changshan. Legal Transformation in the Era of Intelligent Internet // Chinese Journal of Law. 2018 (4) : 21.

²⁴ Michael P. Lynch. The Internet of Us: Knowing More and Understanding Less in the Age of Big Data, Translated by Zhao Yanan. Beijing : Publishing House of Electronic Industry 2017 : 222.

²⁵ Luke Dormeh I. The Formula:How Algorithms Solve All Our Problems... and Creat More, Translated by Hu Xiaorui et.al. Beijing : CITIC Press, 2016 : 223.

computer symbiosis will become the universal pattern of the Internet and artificial intelligence era; civil legal relations between people under traditional private law will develop into human-machine, and even machine-machine ones, not only intelligent machines have obtained the great possibility of development as subjects, but also the borderline between subjects and objects under traditional civil legal relations are challenged, so that the natural person as the subjects of human relations will be completely broken.²⁶ Third, with the help of modern human technology, it is possible to create a “post-biological man” subject while strengthening human body and intelligence, but also it is possible that a few elites are upgrading into physical, emotional and intellectual super-human beings, who are highly superior to other intelligent people so that species hierarchy will be established,²⁷ which may eventually lead to the most unequal society in human history,²⁸ and most people will become meaningless, worthless people, losing their sense of existence and self-worthiness, seeking only sensory stimulation and happiness, furthermore, their personality will be completely materialized, with the loss of human subjectivity.²⁹

Secondly, algorithmic worship and data hegemony will give a fatal blow to the private law freedom. Freedom is the eternal value human beings seeking; freedom is the core value of private law, respecting the subject's personal freedom and property freedom, respecting the subject's free will and freedom of movement, so as to show the underlying humanism and rationalism of private law. However, with the development of Internet and platform economy, algorithms and data increasingly have the attributes of resources and property, becoming the new resources and new types of property in the Internet age, while data and information have become a competitive target of platform enterprises and Internet merchants, but also become the object of Internet economic worship, and even data hegemony, so that, instead of human beings, big data and algorithms control the world and all the new authority.

Under the hegemony of data, big data and the Internet of Everything, the everything related to subjects of natural persons will be transformed into data losing privacy, so that natural persons will lose their personal lives, personal space and critical thoughts, then become a “transparent person”, who

cannot feel and experience “sacrosanct human lives and human experiences”, and big data algorithms will replace the free wills of subjects; the human absolute control will be transformed into a “relative” one; “complete” control will be into part control in private law.³⁰ Private freedom will be fading away, or even eradicated.³¹

Finally, subjects will be discriminated or treated unfairly owing to big data decisions and algorithmic black boxes. Fairness and justice are the original connotation and basic characters of law, and also the main value claim and the ultimate aim of law. Modern private law also regards fairness as its core value, and the principle of equality and fairness among subjects under private law promotes the realization of the eternal justice.

However, with the development of the Internet and artificial intelligence, human decision-making is increasingly dependent on algorithms, furthermore, data decision-making will replace human decision-making; algorithm equality will replace formal equality.³² That is to say, although algorithmic decision-making may make decision-making more scientific and more fair to some extent, but human beings may suffer from permanent individual or group prejudice or discrimination due to the value deviation of “algorithmic black box” or built-in program code, or the deep learning of intelligent machines themselves, which may bring social honor confusion and self-fulfilling prophecies to specific groups,³³ and even harm the public interest, breed “overused algorithm”, “big data cheating acquaintance” price discrimination, etc. what's more serious may be that algorithmic decision-making and big data become a tool for some people to seek improper benefits, which will not only greatly damage the legitimate rights and interests of some, or even all civil subjects, but also may lead the subject of private law to a state of incurable inequality, and thus challenge and deviate from fairness and justice under private law completely.

3. Precautions of the disappearing of cultural values under the private law in the era of artificial intelligence

Cook once said that in the age of artificial intelligence, “I'm not worried about artificial intelligence giving

²⁶ Yang Yanchao. Robot Law — Building a New Order for the Future of Human. Beijing : Law Press, 2019 : 14.

²⁷ Yuval Noah Harari. Homo Deus: A Brief History of Tomorrow. P. 315.

²⁸ Yuval Noah Harari. 21 Lessons for the 21st Century / translated by Lin Junhong. Beijing : CITIC Press Group, 2018 : 67.

²⁹ Tencent Research Institute. Artificial Intelligence te. Beijing : CITIC Press Group, 2018 : 67 gies. Beijing : China Remin University Press, 2017 : 316.

³⁰ Yang Yanchao. Robot Law — Building a New Order for the Future of Human : 374.

³¹ Yuval Noah Harari. Homo Deus: A Brief History of Tomorrow : 294.

³² Yang Yanchao. Robot Law — Building a New Order for the Future of Human : 102.

³³ Yang Yanchao. Robot Law — Building a New Order for the Future of Human : 104.

computers the ability to think like humans. I'm more concerned about people thinking like computers, without values or compassion, without concern for consequences".³⁴ The rapid development of internet and AI technology leads to the change of subjectivity of private law subjects in human society and deviation from traditional freedom and equality. Therefore, how to control and adjust present concept, system and rules to prevent the disappearing of cultural values under the private law, guide the benign and normative development of artificial intelligence technology, live up to the people's expectations for a better life in an orderly, harmonious and healthy society, has become an important topic and mission of civil legislation in the era of artificial intelligence.

First, technical humanism should be advocated and integrated into cultural values, guiding the development and practical application of artificial intelligence technology with benign morality, with the result of the establishment of scientific humanism and realizing the new integration of science and technology and humanities. Technology is a double-edged sword, but people are the controller of technology, so the potential negative effects of technology application lies in people's understanding and morality.³⁵

Therefore, in order to prevent the disappearing of cultural values under the private law, caused by the development of artificial intelligence technology and its variation, people should change their stereotype of technology and ethics. On one hand, human beings should understand that technology has natural and social attributes, and the development of technology should follow natural logics and social logics,³⁶ so as to correct logics of machines by using human logics, and to reduce and control the alienation of artificial intelligence technology and the possible negative effects on human society and private law subjects.

On the other hand, benign morality should be incorporated into the research, development and application of artificial intelligence technology, removing its demonic nature and returning to the human standard, "actively creating a robot technology culture full of humanistic care and rationalism, cultivating the humanistic minds of social

subjects, especially robot research and development subjects", realizing the new integration of science and humanism,³⁷ respecting and maintaining the ethics and values of natural person subjects, maintaining the free claims and their equal status of private law subjects, and ultimately safeguarding the human nature and subjectivity of natural person subjects.

Secondly, the concept of data justice, code justice and algorithmic justice should be contained in value and basic principles for the purpose of weakening or eliminating data hegemony and algorithmic discrimination, and recovering freedom and equality of private law subjects. Although law originates from justice as if a baby is from its mother,³⁸ the value of justice is relative and dynamic.³⁹ People understand justice differently and pursue different justice in different historical stages, at different times, and even in different societies or different countries of the same historical stage. The rapid development of artificial intelligence and information revolution is forcing human society into an unprecedented situation. "Traditional, modern and post-modern elements suddenly meet together.", which breaks the existing balance, makes public policy, systems, value, identity, class and social order, etc., are in the deconstruction and reconstruction brought about by the overbalance.⁴⁰

If humans want to restore and rebuild the benign order of human society and restore the free value and equality of private law subjects, they need to add data justice, code justice and algorithmic justice to the "family" of justice, so as to standardize and guide the flow of data, code editing and algorithmic decision-making, eliminate data hegemony and algorithmic black boxes, and enhance human well-being.⁴¹

The generation and inclusion of a new justice can also provide a choice of social value and guidance for the value of civil subjects, standardize and set new forms of behavior, so that big data and algorithms can be more intelligent to meet the diverse and high-level requirements of private law subjects, to recover the free and equal values of private law subjects,⁴² so that private law is constantly moving towards justice after human nature is analyzed carefully by big data and algorithms.

³⁴ Cook. I'm Not Worried about Artificial Intelligence. I'm more Concerned about People Thinking like Computers. EB/OL // URL: <http://finance.china.com/industrial/11173306/20170612/30706950.html>. 2018-12-21.

³⁵ Lin Dehong. Op. cit. 275.

³⁶ Lin Dehong. Op. cit. 220—221.

³⁷ Zhao Wanyi. On the Legal Subject Status of Robots: Basic Requirements of Legal Restraints on Robots // Journal of Guizhou Minzu University. 2018 (3) : 160.

³⁸ Radbruch G. The Philosophy of Law / translated by Wang Pu. Law Press, 2005 : 32.

³⁹ Wang Limin. Spiritual Building of Civil Law: Philosophy's Perspective. Beijing : Law Press, 2010 : 113.

⁴⁰ Ma Changshan. Deconstructing and Rebuilding Law Order in Internet plus Era // Exploration and Free Views. 2016 (10) : 39.

⁴¹ Ma Changshan. Legal Transformation in the Era of Intelligent Internet // Chinese Journal of Law. 2018 (4) : 25.

⁴² See: Wang Limin. Spiritual Building of Civil Law: Philosophy's Perspective. Beijing : Law Press. 2010 : 115—125.

Finally, we should remodel private law systems and private law rules, allocate rights, obligations and liabilities reasonably, integrate and standardize the online and offline behavior of private law subjects, and strengthen data, privacy and personal information protection. "The legal system is a system of allocating rights, obligations and liabilities",⁴³ the private law of the intelligent society must deal with the challenges brought about by the information revolution, and redesign the rules of the private law and system.

Specifically, private law systems and rules could be made out as follows.

First, private law subject systems should be remodeled. The private law subject status of intelligent robots should be recognized completely or partly, depending on the diversity of private law subjects, and the problem of object and subject confusion brought about by human-machine symbiosis should be removed. Of course, this problem could be solved under private law systems based on how to position subjects of artificial intelligence robots. Therefore, on one hand, no matter whether artificial intelligence has human characteristics or not, its individual existence is very different from the corporate structure of legal persons, and its independent decision-making with high intelligence is also very different from the corporate decision-making and operation of legal persons,⁴⁴ so it is appropriate to regard artificial intelligence robots as "humanlike" rather than "grouplike". On the other hand, artificial intelligence is a high-tech product and belongs to technical existence, very different from the biological existence of natural persons and the real natural existence, and as a subject, its instrumentality is also very different from the ethics and values of natural persons, so it is more appropriate to regard artificial intelligence as a fourth subject independent of natural persons, legal persons, illegal organizations.

Second, the civil legal behavior system should be changed. The civil subject's online and offline behavior including artificial intelligence, human-machine coordination and even machine-machine coordination behavior should be integrated and standardized so that the potential loss of harmony in the private law order should be avoided. Under the dual space structure, the network is not a space

outside the law, so the regulation of the civil subject behavior under private law must govern the network. Subject's online behavior must be standardized and limited, so that the online or offline, virtual or real, electronic or physical behavior of civil subjects are subject to the right regulations, as well as network order should be purified and kept. At the same time, after recognizing the subject status of artificial intelligence robots, the private legal system of human-machine interaction and machine to machine interaction behavior is established to realize the benign development of human-machine relationship and human-machine order.

Third, the concept of legal rights should be updated and reconstructed.⁴⁵ Data should be classified and distributed reasonably. The legal characteristics of personal information should be collected, classified and utilized, the protection of data, personal information and privacy should be updated, legitimate rights and interests of civil subjects should be guaranteed. The traditional civil rights system focuses on the property right, obligatory rights and personality rights, and use tangible objects, human behavior and personality interests as objects. With the development of the Internet and information revolution, not only new things such as data, information and virtual property are emerging, but also the "self-behavior" of the "thinking" machine may appear except for human behaviors, which broaden the scope of the object and subject of legal relations.⁴⁶

However, how to accurately understand and define the legal nature of these new things from the perspective of legal philosophy, confirm the classification of data and information from the legislative perspective, reasonably regulate the behavior of collecting and utilizing data and information, balance and distribute data appropriately and information subjects, and collect and utilize data related to rights and obligations of subjects, is a problem to be solved under private law in the Internet and the digital age. However, it is certain that when data and information are becoming important resources and production materials, affirming the property classification and object status of data and information, and making out systems and rules is what the private law should do in the society of science and technology.

⁴³ Friedman L. M. The Legal System: a Social Science / translated by Li Qiongying & Lin Xin. Beijing : China University of Political Science and Law Press, 2004 : 23.

⁴⁴ Wang Chunmei. Enlightenment and Reflection on the Robot Duality in the "Grishin Act" // Jiangnan Tribune. 2020 (9) : 130.

⁴⁵ Ma Changshan. Legal Transformation in the Era of Intelligent Internet : 30.

⁴⁶ Chen Fusheng & Yang Changyu. The Expansion of the Object of Legal Relations in the Age of Intelligent Internet — Thinking on the Issue of Emerging Rights // Journal of Heilongjiang Administrative Cadre College of Politics and Law. 2019 (1) : 2.

⁴⁷ Wu Handong. Institutional Arrangements and Legal Regulation in Age of Artificial Intelligence // Science of Law. 2017 (5) : 128.

Fourth, civil liability principles and causation should be rebuilt. The liability risks caused by the coordination of human-machine behaviors and the independent behaviors of artificial intelligence machines should be distributed reasonably. The system of damage filling should be perfected, and the legitimate interests of victims are fully remedied and protected. The traditional civil liability risks are distributed in accordance with the doer's behavior and mainly rely on doer's fault.

However, with the development of artificial intelligence, especially with the advent of strong artificial intelligence era, intelligent machines will have certain "autonomy", therefore, their actions are "independent", and how to identify the subject of liability for damages arising from them will be complicated and uncertain in terms of liability principles and cause-effect relationships, which will bring about the possibility of reforming civil liability systems based on the fault of human behaviors. Of course, from the perspective of human-computer collaboration, how to judge the liabilities and cause-effect relationships in terms of damages arising from

intelligent machines is a serious and complicated problem, which may be solved in the future as the AI technology develops and integrates into the civil subject system, civil legal act system, tort liability system and other systems.

To sum up, the internet and intelligent information innovation not only bring an unprecedented challenge to the current legal rules and legal order, but also conflict with the existing legal system in civil subject law, copyright law, tort liability law, personality law, traffic law, labor law, and so on, which discloses the defects in legal systems,⁴⁷ and make the subjects under private law suffer from subjectivity deviation and permanent discrimination, challenge the freedom and equality under private law to a great extent, fundamentally subverting the justice and humanism of private law. It is the aims of reforming the private law in the era of artificial intelligence that concepts under private law should be renewed, private law system should be remodeled, the cultural values under the private law should be maintained, and the subjectivity and subject status of human beings should be guaranteed.

REFERENCE

1. *Brockman J. Digerati -Encounters with the Cyber Elite* / translated by Wang Zhong, et.al. — Haikou : Hainan Press, 1998.
2. *Cohen B. Revolution in Science* / translated by Lu Xudong & Zhao Pei Jie. — Beijing : Commercial Press, 2017.
3. *Harari Yuval Noah. 21 Lessons for the 21st Century* / translated by Lin Junhong. — Beijing : CITIC Press Group, 2018.
4. *Harari Yuval Noah. Homo Deus: A Brief History of Tomorrow* / translated by Lin Junhong. — Beijing : Publishing House of Electronic Industry, 2017.
5. *Lynch M. P. The Internet of Us: Knowing More and Understanding Less in the Age of Big Data* / translated by Zhao Yanan. — Beijing : Publishing House of Electronic Industry, 2017.
6. *Luke Dormeh I. The Formula: How Algorithms Solve All Our Problems... and Creat More* / translated by Hu Xiaorui, et. al. — Beijing : CITIC Press, 2016.
7. *Markoff J. Machines of Loving Grace* / translated by Guo Xue. — Hanzhou : Zhejiang People's Press, 2017.
8. *Schwab K. The Fourth Industrial Revolution* / translated by Li Jing. — Beijing : CITIC Press, 2016.
9. *Yang Yanchao. Robot Law — Building a New Order for the Future of Human*. — Beijing : Law Press, 2019.
10. *Zhang Jiangjian. Intelligent Wave*. — Beijing : Chemical Industry Press, 2019.