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ARTIFICIAL INTELLIGENCE AS AN ISSUE OF CRIMINAL LAW

INTELIGÊNCIA ARTIFICIAL COMO QUESTÃO DE DIREITO PENAL

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ABSTRACT

Objectives: Study is relevant since the irreversible and progressive development of science will result in the transition to "Criminal Law 2.0". Article aims to determine criminal consequences for the introduction of AI into society and developing proposals for the effective integration of AI into elements of a crime.

Methodology: Methodological toolkit is represented by a complex combination of philosophical, general, and special scientific methods of cognition.

Results: Article concludes that a digital person and AI (in any form of their existence) will inherit the intellectual and volitional qualities of a person and become full-fledged subjects of law.

Contributions: Authors of the article have tried to introduce an electronic intellectual person into the structure of a crime. Currently, this introduction is of a probabilistic and prognostic nature but soon it will help to assess prospects for the development of criminal law and prevent new types of socially dangerous acts.

Keywords: digital reality, criminal law 2.0, artificial intelligence, electronic intellectual person.

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RESUMO

Objetivos: O estudo é relevante uma vez que o desenvolvimento irreversível e progressivo da ciência resultará na transição para o "Direito Penal 2.0". O artigo visa determinar as consequências criminais da introdução da IA na sociedade e desenvolver propostas para a integração efetiva da IA nos elementos de um crime.

Metodologia: O kit de ferramentas metodológicas é representado por uma combinação complexa de métodos de cognição filosóficos, gerais e científicos especiais.

Resultados: O artigo conclui que uma pessoa digital e IA (em qualquer forma de sua existência) herdarão as qualidades intelectuais e volitivas de uma pessoa e se tornarão sujeitos de direito de pleno direito.

Contribuições: Os autores do artigo tentaram introduzir um intelectual eletrônico na estrutura de um crime. Atualmente, esta introdução é de natureza probabilística e prognóstica, mas em breve ajudará a avaliar as perspectivas de desenvolvimento do direito penal e prevenir novos tipos de atos socialmente perigosos.

Palavras-chave: realidade digital, direito penal 2.0, inteligência artificial, pessoa intelectual eletrônica.

1. INTRODUCTION

Today, scientists all over the world make significant efforts to develop new technologies in the field of artificial intelligence. This will bring life to a whole new level. The existing legal norms do not fully correspond to the emerging level of technological development. They do not cover those promising social relations that might arise with the introduction of AI and other related technologies into the lives of citizens and their relations with the state. This also applies to the current edition of criminal law that is inconsistent with new types of encroachments. Since possible threats and consequences are important for both society and the state, it is necessary to determine the further development of criminal law and prevent new types of socially dangerous acts by defining liability for them. Within the framework of this article, we form our vision of the future development of criminal law in terms of determining responsibility for AI-enabled crimes (Denisov, 2019; Efremova, 2018; Brenner, 2012).

2. METHODS

The philosophical and worldview basis of the study is laid by such ideals and values as the rule of law, constitutional state, the division of law into private and public, etc. The article also utilized the dialectical method of cognition. It helped to identify and describe

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the objective dependence between the transformation of criminal law for the protection of public relations and the impact of digitalization on the field of law.

In the course of the study, we used the following general scientific methods: analysis, synthesis, deduction, induction, classification, the structural-functional method, etc.

The systemic method and the method of dialectical materialism played a crucial role and acted as a prerequisite for analyzing all the research tasks and solving the given problem.

3. RESULTS

At the end of the second decade of the 21st century, the reverse engineering of the human brain will lead to the creation of AI, the emergence of "intelligent machines", and the cloning (continuation of life) of a person in a digital form.

In our opinion, the emergence of a "digital person" will complete the transition from the traditional criminal law of the industrial society in the 20th century to the criminal law of the digital world in the 21st century ("Criminal Law 2.0"). First of all, this is confirmed by the fact that AI and a digital person will fundamentally change the scope of criminal law protection (Russkevich, 2019; Decker, 2008; Grabosky, 2016).

An indicator of the transition to Criminal Law 2.0 will be a change in the traditional understanding of a subject and subjective aspects of crimes.

A digital person and AI (in any form of their existence) will inherit the intellectual and volitional qualities of a person and become full-fledged subjects of law. This means that they should also be recognized as subjects of criminal responsibility. Thus, the theory of criminal law about the subject of a crime will move to a fundamentally new stage of development. Not only an individual and/or a legal entity but also the digital clone of an individual and the non-biological substrate of a person possessing AI will be recognized as the subject of a crime (Lopatina, 2006; Begishev, Khisamova, 2018; 2019).

New ideas about subjects will naturally give rise to the revision of such categories as guilt, motive, and purpose of committing a crime. The psychological theory of guilt remains acceptable only to the physical representatives of Homo Sapiens. In relation to AI and individuals who continued their lives in a digital form, this theory can only be applied through legal fiction.

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4. DISCUSSION

Modern people convert practically everything that can be virtualized into a digital form. Initially, this referred to music, films, books, newspapers, etc. Now, this process has spread to the credit and financial sector, insurance, health care, and transportation. The usual objects of criminal encroachments are acquiring an additional (digital) dimension. Legal practice is already accustomed to digital copies of postal messages, intellectual property, cash, securities, payment cards, official documents, etc. It is not difficult to qualify criminal attacks on such items within the framework of the current criminal legislation.

However, the reverse engineering of the human brain will lead to the creation of AI, the emergence of "intelligent machines", and the cloning (continuation of life) of a person in a digital form. According to H. Leonhard, it will be a point of no return when "our bodies cease to be the center of our identity" (Leonhard, 2018, p. 69).

The emergence of technology for emulating the biological human brain means the possibility of a completely new form of life when the very concept of a person is no longer associated with their biological shell. This life in the cloud will require the same criminal law protection as in the real physical world since one deals not just with a computer code but with a person. As a result, one needs to extend the effect of traditional criminal prohibitions (murder, kidnapping, human trafficking, etc.) to all encroachments against a digital person. The very moment of a person's death will lose its exclusively biological definition and receive additional meaning, i.e. what we now call the destruction of computer information.

A related problem is the protection of subjects who have human-like consciousness of non-biological origin. Addressing this issue, Raymond Kurzweil, Google's Engineering Director and one of the most famous professional futurists of our time, wrote, "today few people worry about causing pain and suffering to our computer programs (but we often complain about the pain caused by computer programs), but if in the future computer programs get the intellectual, emotional and moral qualities of a person, it will cause a new problem" (Kurzweil, 2019, p. 244).

Developing his ideas, Kurzweil emphasized that such entities "would become indistinguishable from a living person, whom we consider a conscious being, and, therefore, would share all those spiritual values that we associate with consciousness. This does not humiliate human dignity but rather elevates our assessment of (some) machines of the future. Perhaps, these creatures would need different terms for their designation since they would be completely different machines" (Kurzweil, 2019, p. 256).

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On September 10, 2019, President of the Russian Federation Vladimir Putin held a meeting with Herman Gref and expressed his opinion about the possibility of introducing AI into the mechanism of state administration to optimize the work of the state apparatus (Vstrecha s predsedatelem pravleniya Sberbanka.., 2019).

At this stage of development, we can observe the inclusion of intelligent robots in legal relations. For example, there is the humanoid robot Sophia which was activated on April 19, 2015 by Hanson Robotics from Hong Kong. To create this robot, scientists used the technologies of pattern recognition and self-learning. During her short life, Sophia the Robot gave many interviews, found her way onto the cover of a fashion magazine, and attended talk shows. In 2017, the robot was granted citizenship in Saudi Arabia, which caused a lot of controversy and debate both in the country and around the world (Kudryavtsev, 2017).

The gradual inclusion of AI into all spheres of human life has led to the emergence of such a concept as an electronic person. This concept was first introduced in subparagraph "f" of paragraph 59 of the European Parliament Resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics (European Parliament Resolution.., 2017). This document highlights the possibility of empowering AI units and endowing them with a special legal status – an electronic person.

An electronic person is the status of an AI carrier (unit) that has independence in decision-making, regardless of the creator of this system, and as a result, has the rights and obligations for the actions taken (Uzhov, 2017).

This concept does not equate a person with a smart machine since AI does not have a soul, any feelings, interests, and most importantly, a free will inherent in human beings. It was formed when legal personality was granted to persons who cannot possess full-fledged consciousness. Many scholars (Hallevy, 2010; Chopra, White, 2015) rightly believe that these qualities arising from the biological nature of people are not a necessary and sufficient condition for the recognition of a particular being as a subject of law.

However, we do not claim that AI units should be endowed with human rights and the term "electronic person" can be equated with "legal entity". According to B. Schafer, Professor of Computational Legal Theory, ordinary people might think that the concept of electronic person is connected with human rights and that these units deserve the same rights as people. However, granting a certain status to one or another subject of law is only needed to simplify some procedures in the field of law.

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Many discussions about awarding AI units with legal personality emphasize the need to determine the conditions under which AI can be endowed with the status of an electronic person. Not every AI-based system can autonomously exist in the electronic world and make decisions independently from a person.

In December 2017, the United States of America drafted the Fundamentally Understanding of the Usability and Realistic Evolution of AI (Future of AI Act) that not only provided the definition of AI but also described what systems can be defined as such. The draft law introduced the concept of *"general AI"*, i.e. a notional future AI system that exhibits intelligent behavior at least as advanced as a person across the range of cognitive, emotional, and social behaviors (Delaney, 2017).

Thus, the endowment of AI with legal status should proceed not from granting these technologies with human qualities and recognizing the concepts of living and non-living as equal, but from simplifying the legal regulation of relations in the electronic environment. The solution to this issue (namely, giving special status to AI) can be found by a person. Human rights should be the basis despite all the development of the digital age.

The criminal law protection of smart machines entirely depends on the position of humankind (represented by international organizations) regarding their nature and status. It is difficult to predict whether such entities will be recognized as equal to a person (as a new non-biological form of intelligent life) or their position will be close to that of animals, whose criminal law protection is fulfilled in the context of protecting public morality. There are high chances that a mixed scenario is applicable. Depending on the reproduction of the intellectual and emotional qualities of a person, such cyber-physical systems can be differentiated in the legal field as equal to a person (full-fledged participants in social relations), new subjects of law, and automated systems with limited functions (abilities) of AI (high-tech devices or inanimate things).

P.M. Morkhat believed that AI should have a heterogeneous legal personality depending on its functions and capabilities. However, he mentioned the possibility of identifying the corresponding subject of law, i.e. an electronic person having the features of a "formalized technical and legal image embodying the modal framing of a personified AI unit and isolated from the human substrate" (Morkhat, 2018, p. 20-21).

As discussed, the indicator of the transition to Criminal Law 2.0 is a change in the traditional understanding of a subject and subjective aspects of crimes. The Russian legal science has already referred to this issue, albeit in its most general form. For instance, E.V. Talapina wrote that the emergence of a digital person, a new subject of law along with a real person, naturally raises an important legal issue of responsibility for the actions

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committed by robots (whether their owner, user, or developer should be held liable) (Talapina, 2018, p. 9). We believe there is a need for some clarification. It is unviable to consider the responsibility of robots deprived of cognitive capabilities and used by people as convenient helpers in everyday life or production. In this regard, we refer to GOST R ISO 8373-2014 "Robots and robotic devices. Terms and definitions", in which a robot is defined as "an actuated mechanism programmable in two or more axes with a degree of autonomy, moving within its environment, to perform intended tasks".

Being seemingly autonomous, such machines remain nothing more than tools in the hands of people. Consequently, either their owner or developer should be held liable for any damage inflicted in the course of their use. This triggers the traditional model of implementing responsibility in relation to a subject, whose (active or passive) interaction with a complex technological system was the direct cause of negative consequences. A digital person and AI (in any form of their existence) will inherit the intellectual and volitional qualities of a person and become full-fledged subjects of law. This means that they should also be recognized as subjects of criminal responsibility. Thus, the theory of criminal law about the subject of a crime will move to a fundamentally new stage of development. Not only an individual and/or a legal entity but also the digital clone of an individual and the non-biological substrate of a person possessing AI will be recognized as the subject of a crime.

This approach to the issue is substantiated by A.G. Kibalnik: "as long as a technical object of any degree of complexity is associated with human behavior and is controlled by a person, it is, in essence, a tool of inflicting significant harm. Hypothetically, this situation can change when a physical carrier of AI gets complete ‘autonomy’ from a person. If such a carrier acquires a ‘personal’ ability to comprehend their behavior and its possible results, as well as manage their own activity, we can say that ‘the ice has broken’" (Kibalnik, 2019, p. 62-63).

Considering the above-mentioned issue, we cannot ignore a significant question related to subjects of crimes: can AI reach any "age"? In various legal systems, the age of criminal responsibility is directly associated with the sanity of a subject, i.e. age is associated with one's ability to manage their actions and realize their meaning. The answer to this question is ambiguous and depends on the characteristics of AI units. If it is a system based on machine intelligence and created for permanent work, then the age of maturity, as a legal category, does not apply to such systems. If a system is recognized as an AI unit or works on its basis and develops and learns in the process, i.e. acquires cognitive

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functions in the process of its "life", then it is possible to trace the beginning of its "adulthood" based on records of the built-in memory. Within a certain period, it is possible to exclude the criminal liability of AI.

New ideas about subjects will naturally give rise to the revision of such categories as guilt, motive, and purpose of committing a crime. The psychological theory of guilt remains acceptable only to the physical representatives of Homo Sapiens. In relation to AI and individuals who continued their lives in a digital form, this theory can only be applied through legal fiction in case such subjects have a psyche that allows them to "realize, foresee, and desire".

The relevant literature states, "the question of whether actions of a robot can be considered as conscious turns into a serious philosophical problem. If the actions of a robot are determined without the direct involvement of a person, correspond to some goal, and adjust standard models in accordance with the incoming data, there is a certain analogy with volitional actions in the legal context" (Arkhipov, Naumov, 2017).

Volitional processes can be recognized only within a cyber-physical system with the so-called "strong" AI (robot). However, this question should be raised and resolved in relation to persons who continued their lives in a digital world.

A separate issue for consideration is the correlation between the concepts of electronic person and AI. Modern science follows two directions. The first direction involves the creation of an independent participant in social relations (AI). The second direction implies the transfer (copying) of the consciousness of a living person into an electronic environment. As a result, it is necessary to find the difference between the indicated subjects, which we will do in further articles. A preliminary result of our research is that these subjects can be combined into a general concept of "electronic intellectual person". Although such a person is a copy of a living being and exists in the electronic environment, it assumes the same formation and development as AI. The only difference lies in the recognition of the so-called "delinquency", which implies the possibility of bearing independent responsibility.

The transition to the new generation of criminal law is associated with changing ideas about the key feature of a crime or a socially dangerous act. As new subjects emerge, crimes lose their human-centered nature. This concept extends to any manipulation of computer information performed by a digital person. This activity that makes both members of the physical and digital world suffer will become a new form of socially dangerous behavior committed by subjects of a crime. A similar modifying process

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should be implemented in relation to such objective features as location, setting, tools, and means of committing a crime.

The exponential transformation of criminal law into a digital form will inevitably affect the institution of punishment and its legal traditions. The digitalization of criminal punishment will manifest itself in a change in the punishment system. The analysis of the relevant studies allows us to conclude that the scientific community actively works on philosophical, ethical, and legal aspects common to the evolution of criminal punishment with due regard to AI. Thus, some scholars reasonably state that over time it will be necessary to introduce special types of punishment, including reprogramming, deactivation, or shutdown (Kopfstein, 2017; Radutniy, 2017).

In modern conditions, the issues addressed in this article can be classified as irrelevant or even far-fetched. We believe that this approach neglects objective processes. Radical technological changes are happening right now. Projects that seemed fantastic yesterday become a real work of innovative companies. Tomorrow, they turn into everyday phenomena, without which the life of an individual becomes impossible. This was the case with personal computers and the Internet, and the same can happen with AI-based technologies, digital reproduction, and human mind control.

5. CONCLUSION

This article tries to predict the future of criminal law in the context of the development of AI technologies. Indeed, this study is not absolute since it is subjective and probabilistic. There is no doubt that the joint efforts of philosophers, sociologists, specialists in the field of high technologies, and lawyers will result in a fairly accurate forecast of the evolution of criminal law in digital reality.

6. RECOMMENDATIONS

The need to create AI is currently associated with the complex problems that modern humankind has to solve. When such problems are successfully resolved, the theory of criminal law about the subject of a crime will move to a fundamentally new stage of development. Not only an individual and/or a legal entity but also the digital clone of an individual and the non-biological substrate of a person possessing AI will be recognized as the subject of a crime. As for determining the age of a system recognized by AI as a

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subject of criminal law, if such a system is capable of learning and developing cognitive functions in the process of its functioning, then it is possible to trace the beginning of its "adulthood" based on records of the built-in memory.

In addition to embedding a digital person into the main elements of a crime, one needs to extend the effect of traditional criminal prohibitions (murder, kidnapping, human trafficking, etc.) to all encroachments against a digital person.

The transition to the new generation of criminal law is associated with the changing perception of socially dangerous acts, which will be considered in relation to any manipulation of computer information performed by a digital person. A similar modifying process should be implemented in relation to such objective features as location, setting, tools, and means of committing a crime.

Such changes will not bypass the institution of punishment that will lose its traditional forms and transform its entire system.

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