Artificial intelligence in criminal legislation of Ukraine

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In this article, the development of progress, which is constantly accompanied by a certain spectrum of negative phenomena that are generated by this phenomenon, and the problem of criminal responsibility of artificial intelligence is explored. Scientific researches and observations on the progress of humanity in the stages of civilization are analyzed, which does not indicate a decrease in certain excesses that should be inherent in the essence of progress, but in some places, on the contrary, is determined by the growth of social inequality, aggression, wars, armed conflicts, terrorist acts and other dangerous phenomena, and delicacies. In this context, both supporters and opponents of the introduction of artificial intelligence express many reservations about the serious threats that may arise in the course of this process, in particular: a significant increase in unemployment in certain spheres of material production; loss of a significant number of jobs in non-productive sectors; the disappearance of a number of professions and specialties; the danger that becomes an integral part of society, and therefore the functioning of cybernetic technologies with elements of artificial intelligence is a social relationship requiring criminal law protection.

At the same time one of its actual aspects is the problem of criminal liability of artificial intelligence and prevention of socially dangerous delicacies associated with its use. It is obvious that the latter, as well as many other achievements of scientific and technological progress, can be used both for committing crimes and act as a source of causing socially dangerous consequences or creating a threat of causing significant damage to its creator - the person. This publication also explores the question: "How should the criminal liability of artificial intelligence be regulated in situations of causing them socially dangerous consequences in a certain area of its functioning? What legal means should help to prevent the most dangerous challenges associated with the activity of artificial intelligence in the relevant areas?"

At the same time, the question of the possibility of responsibility of a robot-autopilot or other cybernetic system with elements of artificial intelligence in domestic criminal law is investigated, which is problematic even if it is given to it as an agent of a legal entity, since no theory or criminal law of Ukraine is yet recognized legal person as the subject of a crime. However, Ukraine's attempts to adapt domestic legislation to EU standards can not overlook its recommendations regarding "the provision in the future of robots with a special legal status, within which the most advanced stand-alone work can be created as an electronic person and be responsible for the damage they cause in those cases when they make decisions autonomously or otherwise interact independently with third parties"

The position is argued that artificial intelligence, physically embodied in the object of robotics, should be considered as the subject of legal relationships, perhaps somewhere between the legal entities and individuals, combining their individual features with due regard to the specifics. Perhaps artificial intelligence can simultaneously be considered both as an object and as a subject of law.

This article analyzes research in the field of robotics and their implemented results that already have a significant impact on the lives of modern societies. It is noted that the possibility of artificial intelligence, which is equal to or exceeds human intelligence,
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Introduction

On October 22, in 1989, in New York Garry Kasparov (the best chess player of all time on many versions) hosted a match of two blitz parties – Deep Thought. The world champion easily won them. The second meeting was particularly demonstrative, in which Kasparov won in a spectacular combing style. After the match, Kasparov said: “If a computer can beat the best of the best in chess, it will mean that the computer can be used to write the best books. I cannot believe it. If you create a computer with a rating of 2800, that is equal to mine, I will consider as my duty to call him for a challenge to protect the human race.”

In 1996, IBM representatives offered Garry Kasparov to play a match against their chess program “Deep Blue” with a prize pool of $ 500,000. “Deep Blue” - a supercomputer based on the RS6000 system, consisting of 32 nodes, each of which consisted of with 512 processors, hardware optimized for the chess program. Performance of “Deep Blue” corresponded to 11.38 GFLOPS, and the computer could estimate up to 200 million positions per second. Kasparov’s first match against the chess computer took place in February 1996, and he won it with a score of 4:2, but lost the first batch. This was the first case in history when the computer won the party.

In the second match, IBM offered a prize pool of $ 1.1 million, of which 700,000$ was expected to win. Six-match duel with normal time control (120 minutes for 40 moves) took place in May 1997. As a result, for the first time in history, the world champion lost to the computer.

One of the problems arising from the rapid development of information technology, automation and robotics is that a person has a certain limit in its development and productivity, which this person can not overcome due to biological constraints, and, in contrast, for the machine, if there are necessary resources, there is no such limit.

An example of a chess competition of a human race and a computer perfectly illustrates the machine's ability to learn and further development, taking into account Moore’s law, according to which, the performance of microprocessors every two years doubles as doubling their cost, and exponential growth technology development can only approximately imagine the capabilities of machines in the future (Honchar, 2017).

The purpose of the article is defining the features how the criminal responsibility of the artificial intelligence should be regulated in case of causing socially dangerous consequences in a certain area of its functioning; development of legal means that will help to prevent the most dangerous challenges associated with the activity of the artificial intelligence in society.

Methods and research procedures

The current level of community development shows its approach to the era of cybernetic civilization, which will significantly expand the prospects of humanity in many life areas. At the same time, unlike the previous millenniums of the society development, the crucial basis of the modern scientific and technological progress is the scientific knowledge, in the area of which the problem of the artificial intelligence is becoming more and more actual. In order to achieve the purpose of the article, we used the following methods: the method of historical analogy, modeling, generalization and the method of systematization. The theoretical foundations of the research were used also.

Discussion

The term “intelligence” (from the Latin intellectum) means understanding, the ability to think, rational cognition, and hence, in a more general sense, intelligence is defined as the identical thinking, the intelligent development of the individual, and therefore – exclusively a natural phenomenon inherent in human. At the same time, "homo sapiens" on the modern stage of evolution recognizes the expedient delegation of its natural qualities to the so-called "artificial intelligence", which, in fact, is the product of the human mind.

Unlike natural intelligence, one of the interpretations of the artificial intelligence is the ability of the automatic systems to take on individual functions of human intelligence, in particular, to choose and make optimal solutions based on the experience gained and the rational analysis of external influences. The real path to the creation of artificial intelligence in the last century was discovered with the invention of the computer and the development of cybernetics.

One of its founders, academician V. M. Glushkov, emphasized, that the creation of the artificial intelligence is a problem of a great complexity, which can not be solved immediately because of the brilliant inspiration of the lonely inventor. And although, in 1986, the scientist believed, that the heights of creativity computers are not accessible.
enough, but even then he noted the fact of issuing copyright certificates for inventions made by computers (Glushkov, 1986, p. 423, 429). Three decades later, the task of creating artificial intelligence became even more realistic, in particular, with the introduction of so-called intellectual robots in the various branches of the life of society.

What factors determine the progress of humanity in the practical implementation of the idea of the artificial intelligence? It is believed that they can include the following: a) finding society at the beginning of the era of cybercivilisation; b) reached the level of globalization and integration of society; c) sufficient scientific, material and technical bases and technological resources; d) the needs of society in large-scale cybernetic communications; e) wide penetration of robotic systems into different spheres of life; f) the necessity of delegating a part of his functions to artificial intelligence; g) the ability of artificial intelligence for more effectively perform a wide range of human functions; h) the economic efficiency of using artificial intelligence; i) the possibility of using artificial intelligence in extreme and dangerous conditions and situations, and others.

There is no doubt that these and other mentioned factors point to a lack of a certain alternative of further research and the introduction of artificial intelligence into social being, because even since today it is difficult to imagine an environment without intelligent machines that help a person to perform a considerable amount of complex and seemingly indispensable functions. Achievements in the field of robotics and artificial intelligence in the long term can change people’s lives in a social plan, increase their efficiency, reduce costs and increase their safety, in particular in such areas as production, transport, energy, space, rescue operations, education, health care and many others.

However, the development of progress is constantly accompanied by a certain spectrum of negative phenomena that are generated by this phenomenon, since observing the advancement of humanity in the steps of civilization does not indicate a reduction of certain excesses that should be inherent in the essence of progress, but in some places, on the contrary, is determined by the growth of social inequality, aggression, wars, armed conflicts, terrorist acts and other dangerous phenomena and delicacies. In this context, both supporters and opponents of the introduction of artificial intelligence express many reservations about the serious threats that may arise in the course of this process, in particular: a significant increase in unemployment in certain spheres of material production; loss of a significant number of jobs in non-productive sectors; the disappearance of a number of professions and specialties; the danger that becomes an integral part of society, and therefore the functioning of cybernetic technologies with elements of artificial intelligence is a social relationship requiring criminal law protection.

At the same time one of its actual aspects is the problem of criminal liability of artificial intelligence and prevention of socially dangerous delicacies associated with its use. It is obvious that it, as well as many other achievements of scientific and technological progress, can be used both for committing crimes and act as a source of causing socially dangerous consequences or creating a threat of causing significant damage to its creator - the person.

In this regard, the legal science today is interested in the question: "How should the criminal liability of the artificial intelligence be regulated in situations of causing them socially dangerous consequences in a certain area of its functioning? What legal means should help to prevent the most dangerous challenges associated with the activity of artificial intelligence in the relevant areas?"

In 2016, an accident of an unmanned vehicle, Tesla Model S, was found in Florida (USA), in which a driver died. In this autopilot in a timely manner did not notice the obstacle - a truck semitrailer, and therefore did not take measures to inhibit (Golovanov, 2016). Although the investigation resulted in the blame in the incident of a truck driver reported, this and other, so far isolated cases, have posed a problem in legal science with regard to the settlement of new social relations, as the criminal law does not contain provisions on the legal assessment of delinquent cases with the functioning of cybernetic systems. After all, can the artificial intelligence carrier be the subject of responsibility for causing socially dangerous consequences provided for by the criminal law, in the presence of other signs of the corresponding composition of the crime?

This example, which is a real evidence of the introduction of unmanned road transport, points to the need to foresee in criminal law the relevant rules for their application to such excesses. An analysis of this problem shows that it is the lack of a legislative solution to this issue today as a significant brake on the introduction of unmanned vehicles. Above all, they work in the US, EU countries and other countries where laws are already approved or developed that determine the conditions for the use of unmanned cars.

However, the very question of the possibility of responsibility of the work-autopilot or other cybernetic system with elements of the artificial intelligence in domestic criminal law is problematic, even if it is given to it as an agent of a legal entity, since neither the theory nor the criminal law of Ukraine yet recognize the legal person the subject of a crime. However, Ukraine’s attempts to approve domestic legislation to EU standards can not overlook its recommendations regarding "the provision in the future of robots with a special legal status, within which the most advanced stand-alone work can be created as an electronic person and be responsible for the damage they cause in in those cases when they make decisions autonomously or otherwise interact independently with third parties" (Civil law norms on robotics, 2017).

The Ministry of Economy of Estonia is developing a bill on the legal status of the artificial intelligence in legal disputes. This was stated by CyM Sikkut, responsible for the IT strategy of the Estonian government, reports Bloomberg.

In particular, it is proposed to introduce a special term "robot-agent" - somewhat average between a separate legal entity and the property. "If we take this opportunity at the government level, then we will become pioneers in this area and an example for other countries," Sikkut said. Sikkut also noted that the Estonian government was the first in the world to prepare a law on robotics and artificial intelligence, and expressed hope that this issue would be resolved for several years.

At the same time, the Estonian government needs to
receive sufficient political support to continue the project. Despite the fact that automation is being introduced for legal regulation in many countries, Estonia uses new technologies faster than others. A country with a population of 1.3 million was the first to introduce digital government paperwork, nationwide online voting and remote access to government services for foreigners, known as electronic citizenship or e-residency.

In addition, the Estonian Parliament allowed Starship Technologies, a founder of Skype, to use the robots to deliver parcels. It should be recalled that Saudi Arabia was the first in history to provide citizenship work, and the Ukrainian startup raised 105 million to develop artificial intelligence for animal care (V Estonii shtuchnomu intelektu khochut nadaty deialna yurydichna prava, 2017).

It should be noted that the European Parliament has adopted a draft resolution on the legal status of robots as "electronic person (electronic person)" (Wakefield, 2017). The draft Resolution provides for the provision of robots with the status of "electronic person", which has specific rights and obligations. According to the author of the draft Resolution, robots can not be considered simply tools in the hands of their owners, developers or users (this is somewhat consistent with the fact that the fetus is not considered to be part of the mother’s body).

The session of the Council of Europe on Bioethics (December 1996) stipulates that during the entire intrauterine development, the fetus can not be considered part of the body of a pregnant woman, it can not be considered as an organ or part of the body of the future pregnant woman), that is why the question becomes increasingly important: must have their own legal status or not. The resolution establishes general and ethical principles for the development of the field of robotics and artificial intelligence for use in society that should be taken into account in social, environmental and other impacts, and could be able to ensure that robot behavior is consistent with legal, ethical and other standards, including safety requirements.

For example, it is foreseen that robot developers must integrate into the mechanism and programs of the last emergency switch to instant shut down for all processes in emergencies. The specified Resolution is aimed at regulating the legal status of robots in the community of people, for which it is proposed: to create a special European Agency for Robotics and Artificial Intelligence; develop a normative definition of "smart autonomous robot"; to develop a system of registration of all versions of robots together with the definition of "smart autonomous robot"; to develop a system of their classification; to oblige developers to provide guarantees of risk prevention; develop a new reporting framework for companies that use robots or need them, including robotic engineering and artificial intelligence information on the company’s economic performance (Koval, 2017).

In mentioned report, it is noted that it is quite difficult for a developer to prevent alleged damage in a case of robots’ capability of self-improvement and adaptation. Therefore, instead of placing artificial intelligence among the already well-known categories (individuals, legal entities, animals, things, and other subjects and objects), it is proposed to create a new category of "electronic persons" as more appropriate (Hel, n.d.).

Providing artificial intelligence with the status of an "electronic-person" is likely not to find objections and rejection in the field of criminal legislation. This innovation can be based on established, verified theory and practice of the approach to the recognition of a legal entity as a subject of numerous legal relationships, as well as on the regulatory consolidation of the possibility of applying to a legal person criminal-legal measures (fines, general confiscation of property, liquidation) in accordance with the provisions of articles 96-3, 96-4, 96-6 Section XIV-1 "Measures of a criminal and legal character with respect to legal persons” of the Criminal Code of Ukraine for the commission on behalf of it and/or in her interests of a specific crime (Articles 109, 110, 113, 146, 147, parts 2-4 of Article 159-1, Articles 160, 209, 260, 262, 306 of the Criminal Code of Ukraine, etc.), which unambiguously confer on a legal entity with practically the same degree of time duration of a natural person - a subject of a crime. In connection with these circumstances, the legal doctrine in the field of criminal law is subject to revaluation and transformation (Radutny, 2013).

Artificial intelligence, physically embodied in the object of robotics, should be regarded as the subject of legal relationships, possibly somewhere between the legal entities and individuals, combining their individual features, taking into account the specifics. Perhaps artificial intelligence can simultaneously be considered both as an object and as a subject of law.

Theoretical studies in this area are ongoing, for example, by Ryan Calo (2016), a professor at the University of Washington School of Law, director of UW Tech Policy Lab (Robots in American Law; Siegel), along with a study of the possibility of bringing robots to criminal responsibility (research in this area is carried out by professor Umeå Universitet (Sweden) Peter Asaro (Peter M. Asaro).

In connection with this, it is quite possible that the Criminal Code of Ukraine section under the conventional name XIV-2 "Criminal-legal measures concerning electronic entities” appears. Meanwhile, reflection on responsibility, including criminal, artificial intelligence, makes sense only if mankind retains control over it.

To what extent there are reasonable doubts about this, some separate statements testify. Thus, James Barrat mentioned that the final stage of the work on the creation of first intelligent machines, and then machines that are more intelligent than human, will not be their integration into our lives, but their victory over us (Barrat, 2015, p. 75). This statement is illustrated by the following observation: Human DNA and planetary worms have much in common, but we are unlikely to be concerned with their goals, values, and morals, if only they realized that they were our predecessors. As mixed (positive-negative) features and qualities of artificial intelligence indicate the following: self-copying (ability to spread); solving the problem by way of brainstorming with the use of many copies of itself; ultra-fast computing (e.g., some Wall Street observers have already suggested that some algorithms signal each other and disseminate information through millisecond transactions - high-frequency trading (Barrat, 2015, p. 46); ability to work without breaks and weekends; the ability to simulate friendliness or own death, etc. What is created by artificial intelligence can be completely or partially
incomprehensible to a person; for example, algorithms developed by Stanford University professor, pioneer in using genetic programming to optimize complex problems, the creator of a scratch card by John R. Koza, dozens of times repeatedly reproduce inventions that were previously patented, and sometimes offered additional components with which devices worked better than those suggested by the inventors of humans.

Professor of Mathematics Vernor Steffen Vinge worries about the "marriage" that arise between people and computers on the Internet, which he proposed to call the Digital Gay (Vinge; Asaro). Robotics and its software are becoming increasingly complicated. By Moore’s law (empirical observation, made in 1965, six years after the invention of the integrated circuit, one of the founders of Intel Gordon Moore (Moore Gordon), every 18 or 24 months, doubling the number of transistors on new microprocessor crystals, the time when humanity will share the environment of its existence with artificial intelligence, inevitably approaching. Artificial and biological objects will soon be difficult to distinguish from each other. A virtual worlds will become more engrossing than the real environment (Radutny, 2011). No countries or corporation will not abandon research artificial intelligence will be hoping to certain benefits and poboyuvatymetsya competitors. It can be more dangerous than any modern weapons. But for artificial intelligence to cause an inevitable damage will be enough even banal negligence.

Conclusions

Taking into account the foregoing, there are grounds for the following conclusions and some suggestions. Research in the field of the robotics and their implemented results already had a significant impact on the lives of modern societies. The ability to create artificial intelligence, that is equal to or exceeds human intelligence, is quite real and possible that can be achieved in the near future in the coming decades. Inevitably, the time comes when mankind will share the environment of its existence with artificial intelligence. A rather real and perspective is the possibility of recognizing artificial intelligence as the subject of legal relationships, giving it the legal status of "electronic personality (electronic person)". The prospect of application of criminal-law measures to artificial intelligence, the appearance in this regard of a section under the conditional name XIV-2 “Criminal-legal measures against electronic entities” in the special part of the Criminal Code, is quite real. Reflections on the responsibility of artificial intelligence only make sense if mankind retains control over it.

References


