



Research article

Journal Link: <https://ijlcw.emnuvens.com.br/revista>

DOI: <https://doi.org/10.54934/ijlcw.v1i2.33>

CRIMINAL-LEGAL PROTECTION OF ROBOTICS: NOTION AND CONTENT

Ildar R. Begishev 

Institute of Digital Technologies and Law, Department of Criminal Law and Procedure, Kazan Innovative University named after V.G. Timiryasov
Kazan, Russian Federation

Article Information:

Received
November 17, 2022
Approved
November 18, 2022
Accepted
November 18, 2022
Published
December 29, 2022

Keywords:

robotics,
artificial intelligence,
criminal-legal
protection, liability,
crime

ABSTRACT

Robotic devices are more and more often used when committing crimes. Further, this trend will grow, which will significantly increase the inflicting potential of socially dangerous infringements and the harm from their commitment. It testifies to the necessity of an objectively formulated and relevant request for elaboration of modern approaches to criminal-legal protection of public relations associated with robotics. Such protection includes a complex of measures and ensures security of handling robots, from the moment of their creation till the moment of utilization. The work makes an attempt to elaborate the notion of criminal-legal protection of robotics and to define its content. We propose to interpret criminal-legal protection of robotics as an interconnected system of provisions shaping the criminal-legal policy in the sphere of development, production, and application of robots, as well as the liability for socially dangerous infringements committed with the use of robots and in relation to robots.

FOR CITATION:

Begishev, I. R. (2022). Criminal-Legal Protection of Robotics: Notion and Content. *International Journal of Law in Changing World*, 1 (2), 73-83. DOI: <https://doi.org/10.54934/ijlcw.v1i2.33>

1. INTRODUCTION

The digital technologies underlying Industry 4.0 entail drastic changes in all spheres of human activity [5]. Today, robotics, alongside other cross-cutting technologies, is among the key drivers of digital economy. Robots are successfully used in industry and construction, healthcare and education, in everyday life, in agriculture and communal services, in military and space spheres, and in many other fields. At the same time, they create significant and growing risks for public relations protected by criminal law.

Innovative technologies of robots' creation and production demonstrate exponential growth: the created machines acquire new characteristics which significantly expand their functionality; hence, the elaborated and prospective robots may fall out of the legal framework, as they are not identical to any item recognized as an object of respective legal relations. Today, development and use of various robotic devices is already an objective reality. At the same time, robots are permanently transforming and expanding the boundaries of their functional capabilities, thus accordingly changing the character, forms, methods, means and techniques of human interaction with them.

Sustainable and safe development of robotics is an important task of the state; its successful implementation would allow opening new economic markets, changing the current global trading and financial relations. The said processes necessitate the creation of mechanisms for control and monitoring over the actions of robots and for protection of public relations arising at the stages of their creation and functioning.

Thus, the criminal-legal science faces the task of utmost importance – to provide sustainable, steady and safe development of the Russian robotics. An important role in these processes is also played by the elaboration of mechanisms of criminal liability for infringing harm using robotic devices.

2. METHOD

We used general scientific (formal logic, systemic analysis, analysis, synthesis, induction, deduction, analogy, interpretation) and specific scientific (comparative-legal, formal-dogmatic, the method of legal norms interpretation) methods, which allowed considering in more detail the problem of

defining the notion and content of criminal-legal protection in general and, in particular, criminal-legal protection of public relations associated with robotics.

3. NOTION OF CRIMINAL-LEGAL PROTECTION

Unfortunately, the wording of the Criminal Code of the Russian Federation (further – CC RF) does not provide a definition of the notion of criminal-legal protection. This, on the one hand, creates the risks of nonuniform interpretation of this phenomenon, and on the other hand, necessitates the study and account for the provisions of the legal doctrine. However, it should be noted that Part 1 of Article 2 of the said Code defines its tasks as “protection of rights and freedoms of a human and citizen, property, public order and public safety, environment, and constitutional system of the Russian Federation against criminal infringements, provision of peace and safety of humanity, and prevention of crimes”¹. One may assume that this list reveals, *inter alia*, the protective function of criminal law.

B.T. Razgildiev defines criminal-legal protection as “criminal-legal preservation of a personality, society, state, peace and safety of humanity against probable criminal impact on them, executed on a definite territory and during a definite time period through a non-personified threat of punishment by law-enforcers” [14]. A.N. Saygashkin interprets criminal-legal protection as the “emerging at a certain stage of historical development, objectively necessary socially useful activity of specially authorized public bodies providing security of the protected objects through implementing criminal-legal prescripts” [15]. Further, he asserts that protection comprises defense, that is, it “contains two components, two constituents: ‘passive’ – the waiting and control phase (protection in the narrow sense) and ‘active’ – the action phase, reaction to a being committed or having been committed dangerous act or unwanted change (defense)” [15]. The described “waiting and control phase” can be considered a stage of the authorized public bodies and other stakeholders to a reaction to probable future criminal actions, which, undoubtedly, has also a preventing significance. V.E. Bondarenko assumed that criminal-legal protection “is a regime of executing the obligation not to commit criminal infringements upon the objects stipulated in criminal law under the threat of criminal punishment” [4]. At that, the researcher states that “the ground for criminal-legal protection is the presence of social relations regulated by positive branches of law, suffering

¹ Criminal Code of the Russian Federation of 13 June 1996 no. 63-FZ // Collection of legislation of the Russian Federation. 1996. No. 25. Art. 2954.

losses from socially dangerous infringements” [3]. One may assume that, in general, she fits in with a rather original development of the concept of juridical liability, both positive and negative.

It should be noted that criminal-legal protection is applicable to objects viewed as social values significant for the modern state [9]. The most popular opinion among the Russian experts in criminal law is that the objects of criminal-legal protection are social relations. A.V. Naumov believes that “the protective task of criminal law is its main historic task, independent of a political order of the respective state of its economic features” [13]. He distinguishes two aspects of the protective task of criminal law, referring to them both general prevention of criminal law, i.e. prevention of citizens’ committing a crime under the criminal-legal prohibition, and its private prevention, which is interpreted as prevention of committing new crimes by the persons who have already committed some crimes [13]. One may conclude that he interprets criminal-legal protection as an institution with a rather broad content. At the same time, the possibility of other tasks is not excluded.

It is worth noting that some experts assert other, besides protective and preventive, tasks of criminal law, for example, a regulative or similar task. For instance, N.V. Genrikh marks that the object of criminal law may be only certain social relations, occurring in relation with committing a crime, which criminal law organizes and regulates, which guarantee a human right for freedom, security and justice [8]. However, the claimed approaches were not essentially supported by other researchers. At the same time, it should be noted that the regulatory function of law is the main one.

4. CRIMINAL-LEGAL PROTECTION OF ROBOTICS

Criminal-legal protection of robotics appears to have its own specificity, based on the following circumstances. Introduction of digital technologies, including robotics, into social practices is characterized by exponential growth, which logically entails large-scale and rapid changes in many spheres of social life. This, in turn, requires, on the one hand, prompt, and on the other hand – reasonable reaction taking into account achievements of diverse fields of knowledge: engineering in the broad sense, industry, defense, medicine, etc.

We agree with the opinion of researchers who assert that information-telecommunication technologies, information systems and digital devices today constitute an inseparable part of life of a

modern society and comprise all resources ensuring management of information [11]. Besides, it should be noted that the growth of the number of spheres of social life in which digital devices, including robotic devices, are actively used has entailed a change in the crime structure. However, even more significant and complex transformations seem to be coming in relation with the phenomenon under study.

As is well known, robotic devices are a comprehensive object [7] including two constituents:

- the software constituent, including programs providing the functioning of a robot, its execution of certain functions, the list and boundaries of which are predetermined by the installed algorithms of actions;
- the technical (hardware) constituent, which is the mechanical part of the device – construction elements, drives, wire system, sensors, radars, lidars, etc.

The specificity of robots as complex digital objects requires unconditional accounting of their features when elaborating the normative-legal regulation of public relations involving them.

Robots, being endowed with processor capabilities and able to store, process and transmit information, play a more and more significant role in industrial production and servicing. The increased exploitation resource, the possibility to model the performed function by making changes in a program, the high precision of performing certain operation – all this determines great attention to robotics, and this attention is both positively and negatively evaluated from the viewpoint of law.

Robotic devices are more and more often involved in committing crimes. In future, this phenomenon will increase, which will to a large extent magnify the inflicting potential of socially dangerous infringements. The above said forms the agenda of counteracting criminal risks determined by robotics introduction and actualizes the issues of elaborating the criminal-legal norms to provide protection of public relations from the infringements complicated by the use of robotic systems.

From the viewpoint of modern criminal law, a robot (a device, a system, a complex) may be a means of committing a crime and an object of infringement. In relation to the latter, we should note that a robot can hardly be equaled to other means of computational technologies. A distinctive feature of a robot is the capability to commit certain actions not associated with storing, processing, and transmitting of digital information, like, for instance, relocation, moving along automobile roads or in the air space. As a

natural result, these capabilities significantly broaden its functionality and, accordingly, increase the public danger of its use [2].

Notably, in case of committing an unlawful deed in relation to a robot, the latter is considered to be a property and thus is subject to criminal-legal protection on general grounds. However, infringement upon certain types of robots do harm to the objects of criminal-legal protection of other types. In other words, such deeds may be multi-object ones.

For example, if a robotic device belongs to the category of an aerial vehicle or water transport by its purpose, target use and technical characteristics, then its hijacking or capture is qualified as a crime stipulated by Article 211 CC RF “Hijacking of an aerial or water transport or a railway vehicle”.

Besides, if a robotic device is equipped with armaments, ammunition, or explosives, an infringement upon it, in case of the presence of other signs of this crime, is qualified according to Article 226 CC RF “Stealing or extortion of armaments, ammunition, explosives or explosive devices”.

Thus, the current criminal legislation does not consider a robot to be the sign enabling to differentiate liability for commitment of the said deeds. Nevertheless, we believe that robotic devices, due to their inherent properties, in case of infringements upon them which entailed unlawful appropriation, present an increased public danger, as they possess an increased inflicting capability.

Legal scientists express well-grounded concern about the degree to which the current legal environment, including criminal-legal regulation, is adapted to active introduction of robotics into social relations [1, 6]. We believe that these opinions are rather substantiated. Indeed, a robot cannot be fully equaled to material objects which the modern criminal law considers to be objects of individual crimes. At the same time, the elements of crimes characterizing the means of committing crimes do not comprise a robot as a standalone unique object of the material world. One can hardly compare a robotic device with armaments, explosives, explosive devices, or computation means. Being a cross-cutting digital device, a robot may combine the essential features of all the above items. At the same time, in our opinion, there are certain infringements where a robot may significantly increase the public danger of the committed deed, which deserves differentiation of liability.

For instance, robotics determines the possibility to perform the objective part of infringement when a subject is at a remote distance from the criminal event. This property is determined by the possibility of

a robot to be remotely controlled over a long time, the capacity of the battery maintaining the device functioning, the stability of the data transmittance channel which allows receiving control signals at a large distance.

Besides, modern robots are equipped with engines of sufficient capacity which, combined with supporting elements in the external store, makes it possible to endow the robot with certain loads. These can be both explosives and explosive devices. The most obvious example is robots – unmanned aerial vehicles (further – UAV).

Rather significant is the fact that robotic devices can move in various environments – on the ground, in the aerial, space and water environment; there are also no barriers for creating underground robots if needed. These characteristics, if used for committing a crime, may essentially increase the harm infringed by a publicly dangerous deed.

Besides, robots having appropriate software may coordinate their actions with each other, transforming infringements of a single device into mass infringements, which also significantly increases the public danger of the deed. In this case, undoubtedly, one cannot speak of co-partnership, as robots are not subjects of crimes. However, one may imagine the harm from an armada of UAVs equipped with explosive devices and coordinate blows with each other.

Stemming from tactical-technical characteristics of a robot as a means of committing a crime, it can inflict the largest harm in those infringements which are associated with destruction of objects, horrification of the population, delivery of explosive devices, etc.

At the same time, the current edition of CC RF does not contain the elements of crimes in which a robot is considered to be a sign characterizing a means of committing a crime.

The provisions of the general part, namely clause “k” of part 1 of Article 63 CC RF “Circumstances aggravating punishment”, allow making a criminal-legal assessment of infringements complicated with the use of robots, imputing commitment of a crime with the use of specially manufactured technical means as a circumstance aggravating punishment. In our opinion, such practice is beneath criticism. This norm can be applied only if the robot was “specially manufactured” for committing the crime; such wording does not allow incriminating this provision in cases of a voluntary intention and in situations when an industrially produced robot was used to increase the inflicting capacity of the publicly dangerous deed.

Thus, it appears possible to conclude that modern criminal law has a potential for improvement in the part relating to:

- differentiation of criminal liability for infringements committed in relation to various types of robotic devices;
- establishing increased criminal liability for infringements, the objective part of which includes the sign of using (applying) a robot.

This opinion to a large extent relies on the thesis of increased inflicting capacity of a robot, which can be substantiated by the following arguments.

The presence of a software component in a robot determines the possibility to use it not just as a means increasing the inflicting potential of human actions, but also as a highly autonomous mechanism which is actually capable of independently and fully accomplishing the objective part of the crime. In this case, human participation is reduced either to entering a relevant command through the robot's control unit, or to knowingly programming the robots for their participation in committing crimes [12].

In addition to the above, it should be noted that the existing robots act through executing algorithms of actions initially entered by the developers into the digital code of their software. In other words, such robots are capable of performing an explicit, limited list of actions, directly determined by the capabilities of the program embedded in them. However, the progressive development of artificial intelligence technologies suggests the future trend towards significant increase of robots' autonomy.

It is worth clarifying that artificial intelligence differs from software in the available functionality, while by their physical nature both are a digital code. However, the functionality of artificial intelligence allows imitating human cognitive functions, carry our self-training and search for solutions beyond the frameworks of the previously established algorithm. In other words, based on the independent analysis of the environment variables, and commands received from an operator, a system is capable of autonomously choose the algorithm of actions through which the said commands would be executed. In this case, the issue of the subject of liability for the harm infringed by an autonomous robot (a robot in which the artificial intelligence technology is applied) is not sufficiently obvious.

Besides, using a robot for committing crimes is possible in situations when an operator (a person controlling the robot) is at a large distance from the place of infringement. The increasing capabilities of robots in terms of period of autonomous operation, increased capacity of their batteries, larger radius of control means, noise immunity of control signals create conditions for committing socially dangerous infringements at a significant distance from a criminal.

In addition to the above, modern robots demonstrate capabilities of moving loads of significant size and weight, and the working load of UAVs is growing hyperbolically. In our opinion, this technical characteristic can also be used for committing various crimes: terrorist attacks, unlawful crossing of the state border of the Russian Federation, contraband traffic, etc.

5. CONCLUSIONS

The above testifies to the need to objectively formulate a relevant request for elaborating modern approaches to criminal-legal protection of social relations associated with robotics. It is proposed to interpret such protection as an interconnected system of provisions shaping the criminal-legal policy in the sphere of development, production and application of robots, as well as the liability for socially dangerous deeds committed with the use of robots and in relation to robots. Such protection includes a complex of measures and ensures security of handling robots, from the moment of their creation till the moment of utilization. As was stated above, by their criminal-legal nature robots can be objects of criminal infringements or means of committing crimes. Robots as material objects having, due to their inherent properties, an increased potential for infringing harm to the social relations protected by law, create a complex of risks and threats which require both actual and prospective measures of counteraction. Effective protection of social relations associated with robotic devices is insufficient within the existing criminal-legal means. Legal provisions of criminal law must take into account individual features of robots, causing the need to improve the existing norms and elaborate new provisions of the criminal law.

REFERENCES

- [1] Baranov, P.P. (2018). Pravovoe regulirovanie robototekhniki i iskusstvennogo intellekta v Rossii: nekotorye podkhody k resheniyu problemy [Legal regulation of robotics and artificial intelligence in Russia]. *Severo-Kavkazskiy yuridicheskiy vestnik*, 1, pp. 39–45.
- [2] Begishev, I.R. (2022). *Avtonomnaya robototekhnika v sisteme ugovovno-pravovykh otnosheniy* [Autonomous robotics in the system of criminal-legal relations]. Moscow: Prospekt.
- [3] Bondarenko, E.V. (2014). *Osnovanie ugovovno-pravovoy okhrany i ee prekrashchenie* [Grounds for criminal-legal protection and its termination]. Abstract of a PhD (Law) thesis. Saratov.
- [4] Bondarenko, E.V. (2019). Ponyatie ugovovno-pravovoy okhrany [Notion of criminal-legal protection]. *Voprosy rossiyskogo i mezhdunarodnogo prava*, 9(3-1), pp. 224–230.
- [5] Gromova, E.A., Koneva, N.S., Titova, E.V. (2022) *Legal barriers to the implementation of digital industry (Industry 4.0) components and ways to overcome them* Journal of World Intellectual Property, 25(1), pp. 186-205.
- [6] Efremova, M.A., Lopatina, T.M. (2021). *Robototekhnika v ugovovnom zakonodatel'stve Rossiyskoy Federatsii* [Robotics in the criminal legislation of the Russian Federation]. *Rossiyskiy sledovatel'*, 11, pp. 55–58.
- [7] Gabov, A.V., Khavanova, I.A. (2018). Evolyutsiya robotov i pravo XXI veka [Evolution of robots and law in the 21st century]. *Vestnik Tomskogo gosudarstvennogo universiteta*, 435, pp. 215–233.
- [8] Genrikh, N.V. (2010). *Predmet ugovovnogo prava: genezis nauchnoy mysli i problemy sovremennoy interpretatsii* [Object of criminal law: genesis of scientific thought and problems of modern interpretation]. Moscow: Yurlitinform.
- [9] Kabanov, P.A., Sadeyev, M.M. (2009) *Some victimological characteristic's aspects of economic fraud in the Republic of Tatarstan*, *Criminology Journal of Baikal National University of Economics and Law*, (4), pp. 30–37
- [10] Khisamova, Z.I., Vasyukov, V.F. (2021) *Investigation and seizure of electronic media in the production of investigative actions*, *Revista de Direito, Estado e Telecomunicacoes*, 13(2), pp. 78–88.
- [11] Khisamova, Z.I. (2017). *Ugovovnaya otvetstvennost' za prestupleniya, sovershaemye v finansovoy sfere s ispol'zovaniem informatsionno-telekommunikatsionnykh tekhnologiy* [Criminal liability for crimes committed in the financial sphere using information-telecommunication technologies]. Moscow: Yurlitinform.
- [12] Kozyulin, V.B., Grant, T., Grebenshchikov, A.V., Dzhiaka, Zh., Efimov, A.R., Sun Sinpin, Wareham, M. (2016). Boevye roboty: ugrozy uchtennye ili nepredvidennye? [Killer robots: threats accounted for or unforeseen?]. *Indeks bezopasnosti*, 22(3-4), pp. 79–96.
- [13] Kudryavtsev, V.N., Luneev, V.V., Naumov, A.V. (eds.) (2005). *Ugovovnoe pravo Rossii. Obshchaya chast': Uchebnik* [Criminal law of Russia. General part: tutorial]. Moscow: Yurist.
- [14] Razgildiev, B.T. (ed.) (2004). *Ugovovnoe pravo Rossii: kurs lektsiy v 6 t. T. 1. Kn. 1.* [Criminal law of Russia: lecture course in 6 vol. Vol. 1. Book 1]. Saratov: Saratovskaya gosudarstvennaya akademiya prava.

-
- [15] Saygashkin, A.N. (2006). *Ugolovno-pravovaya okhrana prav i svobod cheloveka i grazhdanina v Rossiyskoy Federatsii* [Criminal-legal protection of the rights and freedoms of a person and citizen in the Russian Federation]. Abstract of a PhD (Law) thesis. Saratov.

ABOUT THE AUTHOR



Ildar R. Begishev – Ph.D. in Law, Honored Lawyer of the Republic of Tatarstan, Chief Researcher of the Institute of Digital Technologies and Law, Professor, Department of Criminal Law and Procedure, Kazan Innovative University named after V.G. Timiryasov (Kazan, Russian Federation)
e-mail: begishev@mail.ru
ORCID ID: <https://orcid.org/0000-0001-5619-4025>

ABOUT THIS ARTICLE

Conflict of interests: Author declare no conflicting interests