The use of artificial intelligence in criminal law and criminal procedure systems

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Abstract. The XXI century is rightfully referred to as “the century of endless technological possibilities and ultimate human aspirations” on discussion platforms of various levels, devoted to the issues of certain scientific fields. Scientific forums, conferences, meetings, round tables, researchers at regional, state, world levels present to the attention of the target audience new technologies in materials science, construction, transport, energy, development of software programs in the field of other doctrinal branches, as well as theoretical and practical models of artificial intelligence, capable of solving certain problems facing the world community, individual states, society. Unfortunately, or fortunately, information technologies have also affected the branches of Russian legal system. This article is devoted to the study of issues of potentialities of introducing various mathematical algorithms and computer programs into the current justice system of Russian Federation, by means of which the types of punishment in specific criminal cases, as well as their deadlines or sizes, would be determined. This problem was the subject of discussion at a meeting of the St. Petersburg International Criminological Club on February 15, 2019 on the topic: "Crime and the problem of adequate punishment.” Based on the analysis of judgments expressed in modern criminal law science, a theoretical substantiation of inadmissibility of the use of impersonal digital and other means to determine the form of criminal sentencing, including terms or sizes of punishment for the crime committed, is formulated.

1. Introduction
Modern social relations are characterized by the widespread use of electronic means of information processing. Taking into account the intensive development of computer technologies, they are already demonstrating readiness to perform complex functions involving comprehensive solution to both technical and creative problems. Technologies named "Artificial Intelligence" are currently successfully used in various spheres of human life: from face recognition on a Smartphone screen to creating art and musical works "from scratch" [1]. Given these circumstances, in legal science more and more judgments are made about the need to use high-tech means in criminal proceedings, including for determining criminal punishment and other forms of criminal law influence against persons who have committed a socially dangerous act.

The purpose of the study is to address the issue of ethical admissibility of recognizing an electronic means of information processing as the subject of a choice of criminal punishment. To achieve this goal, it is necessary to solve following problems:
- to define the essence of "artificial intelligence" as a means of making decisions without human participation;
- to assess the potentiality of electronic means of information processing in the field of generating decisions about the public danger of a committed crime and about the type of fair punishment for its commission;
- to outline ethical foundations of admission of "artificial intelligence" in the field of assessing human behavior.

2. Methods
The issues of potentiality of using high-tech means in criminal proceedings has been the subject of numerous scientific studies. So, H.D. Alikperov devoted his time to development of a computer program: "Electronic system for determining the optimal measure of punishment", which he designated in his works as "Electronic scales of justice" [2]. Issues related to the promising potentiality of significantly facilitating mental work of a judge and providing him or her with informational assistance in making decisions in the process of individualizing criminal responsibility by artificial intelligence were the subject of studies of D.A. Shestakov [2]. Professor G.N. Gorshenkov assessed the proposed digital criminal law innovation as a completely new humanistic technology of preventive impact of criminal punishment [3, p. 16]. Yu.V. Golik and Ya.I. Gilinsky saw new opportunities for effectively combating judicial arbitrariness and corruption in the field of criminal proceedings in the context of information technologies [4, p. 20; 6]. In addition, in the modern Russian science of criminal law, there are other studies of different years on the stated issues, but, despite this, the issue of possible implementation of criminal punishment by means of artificial intelligence still remains unresolved.

In the course of this study, various general scientific and private scientific methods of cognition were consistently applied.

At the initial stage of the study, when assessing the development of Russian criminal legislation in terms of individualization and differentiation of measures of criminal law enforcement, dialectical and comparative legal methods of scientific knowledge were used.

At the second stage of the study, when considering the points of view expressed in the scientific literature on the effectiveness of the use of the “electronic system for determining the optimal punishment measure,” a formal-logical method was applied. This made it possible to identify supporters and opponents of exploitation of artificial intelligence in criminal proceedings.

At the final stage, in the study of potentiality of using artificial intelligence, the dialectical method of cognition was used. The same method, along with the inductive and deductive methods of formal logic, was used to determine the ultimate goals of introducing a computer program into the activities of judicial authorities to ensure the determination of a fair criminal punishment.

3. Results
The study showed that the use of artificial intelligence in determining the criminal law impact is not a mechanical process of choosing one of the types of punishment proposed by the sanction with the same weighted average setting of its term or size, but the determination of the further fate of a person convicted of a crime. It is impossible to ignore the fact that the decision taken against the defendant on the imposed measure of criminal liability directly affects (diminishes) the rights and legitimate interests of third parties: family members, dependents, victim, employer, etc. in many cases. Even the most ideal computer program is not capable of assessing these and many other factual circumstances that are not provided for by law and are not directly related to either the circumstances of the crime committed or to the identity of the perpetrator.
4. Discussion
At present, there is no official definition of the concept of "artificial intelligence" at the legislative level. In the legal literature, various judgments have been made on this matter. So, in accordance with one of them, the defining difference between artificial intelligence and an ordinary robot is the presence of thinking or lack of it. The concepts of thinking and mental activity are disclosed in paragraphs 3.23 and 3.24 of GOST R 43.0.5-2009. In particular, thinking is the psychophysiological processes of the operator's brain, including those related to internal speech, memory, functional mental sensory states, ensuring implementation of mental activity with initiation of naturally intellectualized, hybrid-intellectualized, artificially intellectualized human-information interactions that affect the emergence and functioning of information and exchange processes, carrying out the corresponding information and intellectual activities [5, p. 84]. Thus, artificial intelligence should be understood as the direction of information technology, which deals with the study and development of systems (machines), endowed with the capabilities of human intelligence.

It seems that over the past few years, the most representative discussion platform for discussing the potentialities of using digital technologies in criminal procedural activity has become an international scientific event held on February 15, 2019 by the St. Petersburg International Criminological Club on the topic: "Crime and issues of adequate punishment." It was organized in the format of an "international conversation", involving the presentation of the main speaker, followed by a collective discussion of the problematic issues he declared and the prospects for their solution both in the humanities and in the field of practical activity [2].

The main report was presented by the director of the Center for Legal Research (Baku), Professor Kh.D. Alikperov on the topic: "Electronic scales of justice." The key theses of the report boiled down to the following statements:
- modern justice in the post-Soviet space is characterized by an excessive accusatory bias and “wasteful use of criminal repression”. The author saw such "wastefulness" in the scanty number of acquittals and the excessive number of cases of imprisonment for a certain period. As an example of a positive experience in the implementation of justice in criminal cases, the example of certain countries of Western Europe is given, where the specified punishment is applied in 8-15% of cases of conviction;
- the current Criminal Code of Russian Federation defines very broad opportunities for judicial discretion when deciding on a criminal case, and, above all, when choosing the type of criminal punishment, its size or term. In addition to this, H.D. Alikperov drew attention to the objectively low quality of provisions of criminal and criminal procedural legislation in conjunction with "systematic perversion by law enforcement agencies of the spirit and letter of the law (our italics)." Unfortunately, the speaker did not specify the content of the object and the means of this negative impact.

According to Kh.D. Alikperov, the identified problems have become "chronic" in nature, in connection with which in modern society there is a need to revise the "philosophy of modern criminal proceedings." This indicates the need to search for optimal measures, which "will turn the courts into
temples of justice, where the voice of untruth is silenced and only the voice of law sounds." Kh.D. Alikperov developed for these reasons the computer program: "Electronic system for determining the optimal punishment", designated in the report as "Electronic scales of justice". Currently, this computer program is registered by the Federal Service for Intellectual Property of Russia (reg. No. 2019615955 dated 05/15/2019; author and copyright holder: Kh.D. Alikperov).

Many participants in the scientific discussion on 15.02.2019 expressed during the discussion of the report, in general, their approval of the idea of Kh.D. Alikperov on the need to introduce such an electronic innovation in the process of imposing criminal punishment. In particular, D.A. Shestakov drew attention to the promising possibility of significantly facilitating the mental work of a judge and providing him or her with informational assistance in making a decision in the process of individualizing criminal responsibility [2]. Professor G.N. Gorshenkov assessed the proposed digital criminal law innovation as a completely new humanistic technology of preventive impact of criminal punishment [3, p. 16].

Yu.V. Holik saw new potentialities for effectively fighting arbitrariness and corruption in the field of criminal proceedings. In his opinion, introduction of the proposed program in the process of imposing criminal punishment will ensure an increase in public confidence in the judicial system, as well as simplify and accelerate the time frame for checking the legality and validity of decisions made by higher courts. Ultimately, this innovation will contribute to strengthening the rule of law and order in the country [2].

Similar judgments were made by Ya.I. Gilinsky, who believes that implementation of the "Electronic Scales of Justice" program will be actively opposed, first of all, by representatives of the judiciary, who make controversial decisions due to the lack of a proper degree of professionalism or corruption. However, the solution to many social problems in the future will be provided by digital means. The inevitability of their introduction is not questioned [4, p. 20].

During the conversation, other more restrained opinions were expressed regarding the widespread use in judicial practice of the proposed program "Electronic scales of justice" (A.V. Nikulenko, A.P. Danilov, N.A.Krainova, Yu.I. Duk, etc.). However, participants in the conversation refused to categorically deny the possibility of introducing electronic means of making or influencing the adoption of final decisions in criminal cases [2].

Regardless of the final positive or negative decision on the implementation of the "Electronic Scales of Justice" in the practical sphere of jurisprudence, one should acknowledge the undoubted merit of Kh.D. Alikperov that he has done serious research work to date, the result of which is completely ready for implementation in the activities of the judicial authorities. We are confident that the number of such proposals will only increase over time, and therefore the fundamental question of the admissibility in general or the limits of the possible admissibility of the participation of inanimate means of the material or virtual world in the administration of justice has been raised for the scientific legal community.

Before expressing our own opinion regarding the use of computer programs in resolving questions about the type and amount (term) of punishment that should be imposed in a specific criminal case, we consider it necessary to analyze the presented Kh.D. Alikperov arguments about the rethinking of the "philosophy of modern criminal justice". So, one cannot but agree with the scientist's conclusion about the significant quantitative superiority of convictions over acquittals. Moreover, such judicial practice takes place throughout the entire post-Soviet space. But can this fact be considered as evidence of either incompetence, or bias, or cruelty, and (or) other negative personal characteristics of those persons who are authorized to decide on the selection of an individual measure of criminal responsibility for the defendant?

We believe that the reason for the unpopularity of acquittals in modern justice is systemic, not individual. It is quite easy to be convinced of this if we take into account the existing departmental rules for assessing the effectiveness of the bodies of inquiry, preliminary investigation and the prosecutor's office, that is, the competent state authorities that ensure the referral of criminal cases to the court.
From the point of view of criminal procedural legislation, imposition of an acquittal by the court is one of the possible legitimate (and therefore natural, reasonable) decisions in a criminal case: a criminal legal dispute between a citizen and the state ended with the victory of the first, which fits well into the content of Art. 15 of the Code of Criminal Procedure of Russian Federation of the principle of adversarial nature of the parties. However, acquittal and formation of statistical indicators on the state of crime have an extremely negative impact on the overall assessment of the quality and effectiveness of professional activities of relevant law enforcement agencies and their subdivisions. The actions of officials conducting a preliminary investigation or overseeing the legality of decisions taken at the stages of pre-trial proceedings in a criminal case are defined at least as a kind of gross disciplinary offense - "violation of the law", if they led to the formation of a criminal case in which an acquittal was issued.

As a result, the inquiry officer and the investigator, as well as the prosecutor supervising the legality of the preliminary investigation, carry out all possible criminal procedural actions: release from criminal liability, suspension of criminal proceedings, separation of the criminal case materials into separate proceedings, etc., in order to prevent the referral to the court of a criminal case that does not have serious prospects of prosecution. The same reasons also explain the popularity of the institute of a special procedure for judicial proceedings (Section X of the Criminal Procedure Code). Its implementation boils down to a virtually uncontested conviction. These reasons give rise to a consequence in the form of an insignificant number of acquittals, and not a “punitive-bloodthirsty” mentality, supposedly inherent in the overwhelming majority of representatives of the judicial system.

The negative assessment of the fact of excessively frequent imposition of a sentence of imprisonment for a certain period by Kh.D. Alikperov deserves special attention. Such statements, based mainly on a comparison of similar indicators of the activities of the judicial systems of individual foreign states, are perceived at least as incorrect, and therefore needing additional justification.

First, in the process of choosing the form of implementation of criminal liability, the court is guided by the legislatively established general principles for appointment of criminal punishment (Articles 6, 60 of the Criminal Code of Russian Federation). In this regard, the choice of punishment in the form of imprisonment cannot be arbitrary, but, on the contrary, is justified in the content of the conviction as the most acceptable solution, the implementation of which is ensured by those stated in Part 2 of Art. 43 of the Criminal Code of Russian Federation.

Secondly, the court prescribes the type of criminal punishment based on the general assessment of the social danger of the crime committed, the personality of the offender and other legal and factual circumstances that are relevant to the case. Unfortunately, the actual circumstances include the cases when the punishment provided for by the sanction of the norms of the criminal law is not actually possible to execute. A formal approach to designating this type of punishment in a sentence will lead to a state of impunity for the person who has committed a crime. Therefore, the court was placed in the conditions of the need to appoint another real one for the execution of a criminal punishment, but taking into account the fulfillment of requirements provided for in Art. 6 and 60 of the Criminal Code of Russian Federation.

Finally, one should not forget that a crime is a kind of offense that infringes on the most important and significant social relations, as a result it is characterized as an act with increased social danger. Such a social characteristic of a criminal act also predetermines the primary choice of types of punishment, the essence of which is to deprive or restrict the most important (constitutional) rights and freedoms, including the right to free movement in space, choice of residence or stay.

Taking into account the above mentioned, it is difficult to share the opinion of those authors who point to the imperfection of judicial practice, referring to a significant number of sentences in the form of imprisonment, while not deeply analyzing the reasons for the imposition of such sentences.

It is difficult not to admit that Kh.D. Alikperov fairly indicates the low quality of provisions of the current criminal legislation, including the relatively unjustifiably broad opportunities of the judge in the implementation of individualization of criminal responsibility. This remark equally applies both to
the choice of the types of criminal law measures of state coercion and the limits of the minimum and maximum terms or sizes of punishment provided for by the sanctions of many criminal law norms. But, knowing about the existing violations of the rules of legislative technique, made in the formulation of certain criminal law norms, it would be more logical to formulate proposals for the systemic or private correction of the relevant provisions of the criminal law, rather than create an electronic algorithm, the implementation of which would supposedly ensure overcoming the mistake made by the legislator and guarantee the fairness of the appointment of criminal punishment.

To the inconsistency in the designation of Kh.D. Alikperov, the true reasons that caused modern problems in the practice of applying criminal and criminal procedure legislation, can be added to the extreme uncertainty of formulating the goals of introducing the proposed electronic system into the activities of criminal justice bodies, which calculates the optimal measure of criminal punishment. In this part, it can be assumed that behind the metaphorical statements about the creation of "temples of justice", "substantial economy of criminal repression", etc., in reality, lies the idea of imposing a criminal punishment, the legality and fairness of which cannot be questioned in the slightest as parties to the criminal process and third parties (however, the author still makes a reservation about possible appeals and protests against "court verdicts", which does not exclude the dissatisfaction of any of the participants in the criminal process with the final decision regarding the punishment imposed using a digital product). The means of achieving this goal is the inclusion of a computer program in the decision-making process in a criminal case, which, unlike a judge, is devoid of all human vices, and therefore is guaranteed to offer the most objective and fair option for implementing criminal liability in relation to the defendant.

We believe that no matter how tempting such targeted statements may sound for any representative of society, they are still overly idealistic, and therefore unattainable even with the help of ultra-modern information processing tools and electronic generation of possible solutions. This assumption is indirectly confirmed by the author of the program "Electronic scales of justice", describing the results of its approbation: the source material was "more than a hundred different convictions that entered into legal force." As a result of the conducted empirical research, it has been established that "... the proposed electronic system is able to successfully cope with the choice of a fair punishment with a probability of at least 97–99%" [2].

![Figure 2](source: [2]).

The cited theses indicate that, firstly, there is no standard of fairness of a judicial decision, and the proposed (like any other) program, in principle, cannot ensure its creation. It is for this reason that the court decisions already made by people were taken as the basis for the subsequent comparative
analysis of the work of the proposed electronic system. Here we see an obvious logical error in the validity of the argument, defined as "a circle in the proof" [6, p. 486]: the decision of a person is not fair - the decision of the program is fair - the fairness of the decision of the program is determined by the compliance with the decision of the person. At the same time, the decisions on punishment proposed by digital means coincide with the content of the sentences taken as a basis, which have entered into legal force, by 97-99%. Undoubtedly, the difference in indicators can be attributed to a completely permissible statistical error, but still: how to assess the fairness and, accordingly, the legality of those sentences that amounted to these 1-3%? I am sure that the priority remains with the decision of the person, not the program.

Secondly, we would venture to suggest that the number of convictions taken for the experimental study, which came into legal force: “more than a hundred”, is clearly insufficient to formulate positive conclusions about the application of the proposed digital product in the field of criminal justice.

Thirdly, the question remains about the expediency of introducing computer programs into the activities of the judiciary, designed to ensure the determination of a fair criminal punishment, if the basis of the proposed calculation algorithm will continue to be made up of previously rendered judicial decisions that have entered into legal force, as well as a certain average the established proportion between legally significant circumstances mitigating or aggravating criminal liability. We are ready to assume that in this part the results of human intellectual activity will turn out to be more justified and fairer than those offered by an electronic computer.

In conclusion of the analysis of the proposals formulated by Kh.D. Alikperov regarding the implementation of the Electronic Scales of Justice program in the activities of Russian judicial system, we would like to draw attention to the fact that the decision taken by the court in a criminal case must comply with the principle of fairness (Article 6 of the Criminal Code of Russian Federation) and ensure its restoration (Part 2, Article 43 of the Criminal Code of Russian Federation). Throughout its existence, the criminal law doctrine has failed to formulate a generally accepted definition of justice and criteria for its practical assessment. Disputes regarding this category do not stop (and, rather, will not stop) to this day, in connection with which some authors reasonably state about the philosophical, rather than legal content of the justice of criminal punishment [7, p. 340]. From this we can conclude that in society there are very abstract ideas about the category of "justice", but there is no general stereotyped understanding of its content among people, including participants in criminal proceedings, and cannot be. That is why the idea of using an electronic tool to define social categories that do not have precise quantitative characteristics is a utopia.

5. Conclusion
The fairness of the verdict is formed on the basis of the provisions of criminal law in conjunction with the sensual ideas of a person about compassion, honesty, empathy, mercy, limits of retribution, decency, etc. That is why the feelings of a person that are not subject to translation into an electronic code ultimately contribute to ensuring the fairness of the punishment. This legal presumption is enshrined in current legislation. Both criminal and criminal procedural law call the advantage of the subjective as the fundamental principles, that is, sensual, attitude to assessing the behavior of participants in criminal legal relations. In particular, criminal law predetermines the inadmissibility of objective imputation (part 2 of article 5 of the Criminal Code of Russian Federation) when characterizing the public danger and unlawfulness of the act provided for by the relevant norm of the Special Part. In the same context, criminal procedural law establishes the principle of freedom of assessment of evidence, which is based on the inner conviction of the authoritative subject of criminal proceedings, formed both by law and by his own conscience (Article 17 of the Code of Criminal Procedure of Russian Federation).

In this regard, we can conclude that only Man can judge a Man. Any interference in the process of imposing a criminal punishment, including introduction of electronic means of collecting and summarizing information (even as an “advisory voice”), creates the danger of making decisions that
do not meet the true meaning of the provisions of criminal law, and also relieves the judge of a significant share of responsibility for legality and fairness of judgment.

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