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Ansagan ARONOV (https://orcid.org/0000-0003-3821-9158),
and Sara IDRYSHEVA (https://orcid.org/0000-0003-3473-3395)
Maqsut Narikbayev University Law School,
8, Korgalzhyn Highway, Astana, 010000, Republic of Kazakhstan,
+77 17 2703030, info@mnu.kz

COPYRIGHT PROTECTION ON WORKS GENERATED BY ARTIFICIAL INTELLIGENCE

Introduction. *Artificial intelligence (AI) has profoundly impacted various aspects of human life, including text generation, software development, and art creation. Many sport and business news articles available online have been authored by AI. Under the current legal frameworks in many jurisdictions, AI-generated works have generally been regarded as tools. However, the evolution of advanced AI technologies has significantly challenged this traditional perspective.*

Problem Statement. *The rise of AI has introduced significant challenges to intellectual property law, particularly copyright. In the context of copyright, AI-generated works have sparked legal disputes regarding whether AI can be recognized as the author of creative works, how such works should be protected, and who holds the rights to them.*

Purpose. *This study aims to critically analyze copyright issues related to AI-generated works, identify the legal regulations governing such works in developed countries, and propose recommendations to enhance Kazakhstani copyright law for AI-generated outputs.*

Materials and Methods. *The research has employed comparative legal analysis, general scientific methods, and specific scientific approaches.*

Results. *Drawing on foreign practices, the study has concluded that the individual who has made the necessary arrangements for the creation of AI-generated works should be recognized as the author.*

Conclusions. *The paper provides practical recommendations for improving Kazakhstani legislation on copyright protection for AI-generated works. The findings may serve as a valuable resource for future legal research on regulating copyright for AI-generated outputs.*

Keywords: copyright, artificial intelligence, author, authorship, originality.

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Kazakhstan has been currently experiencing a period of rapid economic, political, and social transformations. These changes are mainly attributed to the advancement of cutting-edge technologies, such as the internet of things, blockchain and the process of total informatization. The development of informative society has also resulted in the advent of AI technologies. The emergence of AI has made possible to create newer forms of works without the intervention of people. The rise of AI has become one of the popular topics around the world. Concepts such as creativity machines, self-driving cars and etc. have captured the attention of scientists, policy makers and consumers, increasing awareness of the benefits of AI. Moreover, the emergence of AI has also led to the fact that humans are no longer the single source of creative output, as computers with human intervention have demonstrated the ability to generate creative and original products [1]. Thanks to AI, it has become possible to create speech scripts without an actual video of a person or to generate an artwork which may closely resemble the style and characteristics of famous artists like Picasso. Mostly, AI is associated with robot machines or futuristic stuffs. The main concepts behind AI is to create a machine (computer) which could operate smartly even beyond human intelligence with the goal to create products that are comparable to those produced by humans [2].

It could be stated that computer have surpassed humans in certain areas such as chess, poker and other games. Now they are competing with people in new arenas like art, where advanced AI programs teach computers to produce creative works such as music, stories, and art. Some critics state that AI generated art cannot compete with human-made art because machines lack of abilities like intuition and emotion, which is believed to be essential for an artistic works. Nonetheless, computers have demonstrated the capability to create art. For example, the Associated Press has relied on AI to produce articles, the Washington Post uses sophisticated software, which helped it to get numerous stories covering political race, sports and more. Some companies such as Sony could create songs, thanks to AI technology [3]. However, AI advanced technologies also caused a huge disruption to legal framework, including the Law of the Republic of Kazakhstan "On Copyright and Related Rights 1996" (Copyright Act 1996), where there is no legal standing on AI-generated works [4].

Therefore, copyrighted works that created by AI seems to be debatable among right holders. While AI-generated products have massively appeared, copyright law on different jurisdictions around the world struggles to keep pace with the advanced technology.

It could be stated that the AI legal standing is not yet addressed by Kazakhstani's intellectual property law. These subjects are appropriate and have both practical and theoretical significance for the legal regulation of copyright products created by AI technologies. But, despite the numerous scientific papers on this issue, there is no simple analysis that would cover the legal regulation of copyrighted works created by AI technologies in developed countries. Thus, this issue causes a number of questions, for example, who is the author of copyright products created by AI machines, what is the legal status of AI, who is responsible for the actions of AI and etc. Moreover, because of the quick development of advanced technology, any study conducted before may become obsolete, therefore a new and more research on this subject is needed [5].

Thus, the aim of the study is to establish general features on the copyright law for AI and improve the Kazakh copyright law in terms of emerging new technologies such as AI. The author conducts a comparative analysis of copyright laws in some advanced states such as the UK, the US and Europe, moreover, proposes to amend the national legislation on copyright.

To analyze copyright problems posed by AI, firstly we will evaluate AI and its features, current position and further development. Then, the paper will focus on legal issues, in particular authorship and originality issues affected by AI to answer

the question whether AI-generated machines could be or should be recognized as an "author". To tackle this question, the paper will compare some approaches from the UK, the US and EU. Next, as a result of comparative analysis, to fill a grey gap in national legislation, the author proposes relevant approach to improve the Kazakh copyright law regarding AI-generated machines.

It could be stated that the development of AI is associated with the name of British scientist, Alan Turing, who was eager to know whether a machine is able to think for itself as an individual. But the term which we currently use, was created by the American scholar John McCarthy at a meeting in Hanover [6]. However, American math scientist did not provide a full definition of AI technology. While other scholars such as Russel and Norvig proposed nearly ten definitions and these definitions could be varied due to the targeted subjects. Given its features, one may define that AI is a system which is able to do tasks that would usually involve human intelligence such as decision-making, recognition, learning, and communicating [6]. Gurko claims that AI is closely connected with neural networks which appear to be mathematic model and its program incarnation built on the principle of organizational of biological neural networks [7].

In the information age, many problems appear to be dynamic, easily changeable, and depending on the different circumstances, these changes are hard to predict. It can be seen that AI can solve various types of issues such as optimization, classification, recognition, prediction and so on [8]. Some authors indicate eight essential features of AI: creativity, unpredictability, independence, autonomy, rationality, ability to develop, ability to collect data, efficiency, accuracy, ability to choose quickly and freely alternative options [9]. AI is appeared to have a significant effect on the fourth industrial revolution and as a term has been mentioned in the paper of Klaus Schwab. Schwab sees AI, Internet of things (IoT), robotics, 3D printing and other contemporary technologies as a part of the fourth industrial revolution which is about to affect all governments and industries [10].

Indeed, AI technologies are multifaceted, comprehensive and omnipresent — it is widely used in different spheres of sciences from cybernetics, math to biology and linguistics. But, for all these sciences, the legal aspects of AI are specifically necessary, but surprisingly least developed [11].

Moreover, in terms of the goals of AI, there are two groups of experts who see AI differently. One group of researchers uses AI machines to stimulate and thus to understand human behavior, while the other group of experts use AI systems to perform tasks where people are not able to do it, and thereby increasing human's ability [12].

Given the importance of AI, the President of Kazakhstan, K. Tokayev noted that the world has been living in the age of AI, machine learning and neural network which covers such directions of human activities as economy, security, medicine and policy [13].

Given abovementioned notes, it could be concluded that AI is programs which intended to solve intellectual tasks, as if such tasks were solved by a person.

A set of general scientific and private scientific methods of cognition, including dialectical, system-structural, comparative legal, formal legal methods, was used as the methodological basis of the study.

The dialectical method was implemented by applying the laws of formal logic, the principles of comprehensiveness, ascent from the singular to the general and from the abstract to the concrete, etc. The comparative legal method allowed the author to compare the relevant provisions on copyright of individual states and international legal acts on the topic of research. The system-structural method made it possible to review and study the institute of artificial intelligence as a system and as a unit of a higher-order system, involving its further active study and legal regulation. The formal legal method was used in the analysis of current legal norms and international documents on the topic.

THE LEGAL CHALLENGES OF AI

As it has been already mentioned, the integration or creation of AI and its development is causing issues in intellectual property, in particular in the sphere of copyright. As a result, some questions have been arisen by this challenge such as whether we can protect the works created by AI? How to provide protection for such results? To whom will such results of intellectual activity belong to a human or AI? These questions will be discussed in this article.

Given different types of approaches and positions, it is possible to highlight the following regimes of the legal regulation of intellectual property rights with the use of AI: 1) theory of AI authorship; 2) theory of the absolute human authorship; 3) work for "hire" theory; 4) theory of co-authorship (AI and human are both authors); 5) theory of public domain; 6) theory of sui-generis rights.

1. *Theory of AI authorship*. The main point of this theory is to recognize AI as full- fledged author of creative works. Since the involvement of a person in the creation of work is limited with simple request and the main work is generated by a computer, it is fair to say that the author of works is AI-generated machines. Simple command giving does not make someone an author yet [14]. Moreover, it could be stated that AI or algorithmic authorship is the authorship of a computer program rather than a human. Examples of this approach are the following: Google's DeepDream, the What-If Machine and others. Although, some scholars have stated that AI can be recognized as an author, scholars such as Shtefan claims that to recognize AI as a subject of copyright could be irrational, because of a number of reasons: it cannot think and create new ideas or thoughts; AI does not have freedom to decide about its norms and goals since it is dependable on humans [15]. Besides, Kop supports this view by claiming that AI outputs require an active agent which is able to create copyrighted works. Since AI active agents do not exist yet, it is fair to say that there is no room for AI authorship [16].

2. *Theory of co-authorship*. The main point of the theory is to recognize authors of works not only AI, but also people, namely programmers, owners of AI or users. Because, the main aim of the creation of AI is that it can perform any certain tasks rather than becoming a free artist. For example, at the first time an Indian copyright office has recognized AI tool — the RAGHAV AI painting app as the co-author of a copyrighted object [17]. Lu asserts that although this approach sounds attractive, it does not meet copyright principles, because AI generated works often do not meet the criteria of creativity and originality that are typically required for copyright. What is more, it might be difficult to find mutual collaboration and intention between AI machine and a person [18].

3. *Work for "hire" theory.* Some scholars recommend to define the authorship of creative works by relying on this theory where AI may act as an employee creating a service work. Such doctrine also allows entities to be copyright holders of creative works. According to this theory, the ownership of copyright work may go to different companies, firms, organizations, or employer who hired a person to create a copyrightable work [19]. Feliu states that such approach may help to solve ownership issue by passing it from AI to a natural person. Also, this approach considers employer's contribution as a main motivation to create copyrighted object. From this logic, it would be fair to say that AI companies or entities could be copyright owners [19]. Thus, a relationship between an employee and employer can be applied to the system of AI and its programmers.

4. *Theory of the absolute human authorship*. According to this theory, copyright works are a direct indication of author's identity and will. Therefore, authorship is a uniquely human process of expression. Besides, copyright is protected as a human right. For instance, the Universal Declaration of Human Rights claims that a person has the right to the protection of moral and material interests which follow from any creative works [20]. Today it is difficult to establish creative works where humans cannot be involved. Even if we assume that computer programs can perform creative acts, the human's actions anyway play a vital role, since a person defines or establishes the prin-

ciples of such programs, develops the program and launches it [14]. It is worth mentioning that traditional copyright is in support of human authorship, and under this approach, AI generated objects are not protected by copyright. As a recent example, Naruto v Slater case has directly demonstrated the demand of absolute human authorship [19].

5. Theory of public domain. The central concept of this doctrine resolves around acknowledging the potential absence of human authors in works created by AI-generated machines. According to this theory, it would better to transfer such works to public domain, since a true author of these works is computer program which does not have legal personality [14]. This theory confirms the theory of absolute human authorship, but at the same time it will help determine the status of works created by AI, since this issue is not settled unambiguously in any law. We believe that such a theory regarding works of literature and art should be legislatively enshrined in the copyright law of Kazakhstan [21].

6. *Theory of sui-generis rights*. Papadopoulou believes that a specific legal protection of works created by AI can be a solution for parasitic or unfair competition between AI technologies and human authors. For example, there might be situations when human author's creation is imitated by AI machines without the reproduction of the work and thereby resulting in consumer confusion [22]. Moreover, sui-generis right regarding the three categories of individuals an owner, a developer and a user can be obtained through assignment by the AI company. This approach is also crucial for allocation of liability for faulty products created by AI technologies [22]. What is more, some claim that originality may not be the best solution for the protection of AI outputs and therefore, relying on EU's database directive analogue, a special legal protection needs to be applied to address this question [19]. As a result, sui-generis approach to AI outputs may help to bypass the originality and authorship criteria [19]. Shtefan believes that applying sui-generis right may bring some pros, for example, it may let investors to impact on the possibility of using AI outputs, but also not to destroy the value of human creativity [15].

Under Article 2, subparagraph 2 of the Law of the Republic of Kazakhstan «On Copyright and Related Rights 1996» (Copyright Act 1996), copyright is defined as the personal and non-personal property rights of the author [4]. And under the same article, subparagraph 1, an author is a person, who creates copyrighted works in the sphere of science, art and literature [14]. The Act also defines "computer software program" as the following:

"A set of instructions, presented through verbal descriptions, diagrams, or any other communicative format, is recorded onto a material computer-readable medium. This recording facilitates the execution or attainment of specific computational tasks or outcomes, encompassing preparatory actions. These preparatory actions culminate in the creation of the computer program at a subsequent stage".

Moreover, under Article 7, computer software programs are on the list of works that are the subject matter of copyright. Moreover, it should be mentioned that the protection of computer software programs applies to all types of software, which includes source and object codes. Copyright Act 1996 has not provided a definition on computer-generated works and therefore, the work produced by AI has not been covered under the national copyright law [4].

It can be concluded that the current copyright law of Kazakhstan does not recognize concepts namely "copyright law of AI," or does not set up such phenomena in official legal documents. Meanwhile, this gap may cause some issues in the future, because AI has significantly impacted all aspects of social and economic life.

For example, AI has recently started to produce a number of artistic, literary and musical works which a common person finds it hard to distinguish from human made creative works. AI technology will improve its ability to mimic human creativity as it advances. One of the prominent projects was "Next Rembrandt" where AI company with the collaboration of art historians, engineers and developers tasked a computer to repro-

duce the famous painting of Dutch artist Rembrandt [3]. In 2022, it has been reported that AI produced artistic work won an art competition in the US. To create that the artist relied on Midjourney — AI program which specialized in artistic works [23]. In another example, SONY CSL Research Lab created an AI system named Flow Machines which specialized in producing new tunes by using a large database of songs and its distinguished creation was a song "Daddy's Car" [24].

Currently, debates persist regarding granting copyright protection to AI-generated works. Some argue that without such protection, developers and owners may hesitate to invest in innovation, fearing the loss of their creations or the migration of valuable innovations to other jurisdictions. It is worth noting that a key rationale for advocating copyright protection for AI outputs is to motivate the developers, programmers and owners of AI [16].

Others support the argument of copyright protection of AI outputs by rejecting the human authorship, emphasizing the need to recognize AI as authors due to advancements in technology. Since copyright evolve with technology, the idea of authorship should be changed before the technological developments [20].

The proponents of copyright protection for AI-generated works tend to claim that the development of AI technologies which could be used to create literary, artistic and musical works requires more financial, material and other sources. Therefore, providing copyright protection for such works may then encourage more investment in AI technologies. It is worth mentioning that the proponents themselves are divided into several groups in terms of protection, some claim that the current copyright law already regulates such works, while others offer several options of amending copyright law to adapt it to the features of AI technologies [25].

Moreover, it is also claimed that providing protection to the AI outputs may motivate owners to control well such works. For example, some companies would take this action to obtain more profits from their AI programs, and such control also prevents AI systems being used for illegal actions such as copyright infringement [20].

However, Hazucha asserts that there are some opponents who stress that copyright law does not and should not extend to AI-generated works. This view is mostly shared in jurisdictions with civil law traditions or jurisdictions inspired by the French and German legal systems. Since these jurisdictions tend to follow a vital approach where authors can be solely natural persons, the argument appears to be understandable [25].

What is more, one of the reasons why AI objects should not be protected by copyright is that machines do not have cognitive functions, for example, AI struggle with initiative and planning. Most importantly, though, AI objects are unaware of what they are doing and lack interior insight. Therefore, the latest achievements of AI machines, though impressive, should not be regarded as creativity or authorship. Consequently, comparing natural creativity with AI is premature. Given these arguments, some contend that AI-generated works do not require copyright protection due to the absence of true creativity [24].

It has been emphasised that AI is not amenable to the incentives offered by intellectual property rights, and that other means of encouraging investment may thus be adequate. Furthermore, because rivals with access to AI will have significant advantages over those without, IP rights may promote market consolidation and hinder the entry of new businesses into the market. An additional aspect could be observed in the detrimental effects on human endeavours to produce or innovate. If automatic creations received the same rewards as human labour, that may be interpreted as a devaluation of such efforts [26].

Moreover, the opposing parties indicate that AI itself does not require copyright protection and do not own exclusive rights. In case of humans it is clear that people would not create works, if there was not adequate protection. But, in terms of AI machines, it could be different, because they would still keep creating works, even without obtaining any copyright protection [25].

To find out the best way to address the legal issues of AI-generated works, the next part will comparatively analyze the law and cases in the UK, Europe, and the US.

COPYRIGHT PROTECTION OF AI WORKS IN THE UK

In 1980s the UK government issued a Green Paper concerning the copyright protection of computer-generated works. The paper stated that a computer is mere a tool which helps to create works and a person who is responsible for operating that tool might be considered as an author [27]. Today the issues of AI-generated works in the UK appears to be settled. According to section 9(3) of the Copyright, Designs and Patents Act (CDPA): "In the case of literary, dramatic, musical or artistic works created by computer-generated machines, the author is considered to be a person who has taken measures necessary to create works." Besides, s. 178 defines a computer-generated work as a work created by computer in circumstances such that the author of the work is no human [28]. Thus, since computer-generated means that there was no human involvement in the creation of innovative product, it seems to say that the work created by AI falls under this definition [29].

However, Guadamuz notes that these UK rules on computer-generated works anyway leave some questions. For instance, of whom law should consider to be the person who is making necessary measures for the work to be created? Whether should we consider a programmer or a user? And this reminds us a question of whether copyright should be given to the maker of a pen or the writer? In a contemporary world a simple example that highlights this issue is, Microsoft's development of Word program. While Microsoft is the creator of the software, it is evident that the company does not claim ownership over every individual piece of work created using the program [30]. The copyright belongs to the user, because he or she used the program to create own work. Indeed, one of the unique aspects of AI-generated works is the level of automation and the reduced involvement of human creators in the creative process. In some cases, users may simply press a button or provide minimal input, and the AI takes care of generating the work. To answer this question, some case law indicates that the user action could be solved case by case principle [30].

It should be mentioned that the UK is one of a few nations that protect computer-generated works; others such as South Africa, New Zealand, Ireland and India are clearly inspired by the UK regulation of computer-generated works, as they employ practically the same approach [24]. It is worth mentioning that in practice there are few cases in terms of the s 9(3) of CDPA. According to *Express Newspapers v Liverpool Daily Post,* a claimant organized a competition where cards were distributed to its readers and each card had series of letters that needed to be checked with the winning series. The winning series were published in a grid of rows and columns of letters. Since the readers did not need to buy the newspaper to get the cards, the defendant — Liverpool Daily Post copied the winning series in its paper. As a result, the claimant sued the defendant because of the copyright infringement. Before the court, the defendant relied on an argument where the winning series were not covered by copyright, because they had been produced by computer machines rather than humans, and thus there is no author. However, the court held a decision in favour of the claimant by explaining that the computer was a tool to publish the series using the instructions provided by the programmer. Thus, it is fair to say that the decision was consistent with s 9(3) of CDPA [31].

In *Nova Productions v Mazooma Games*, the claimant produced computer games and they claimed that the defendants copied the game to create their own games. The issue of infringement did not revolve around the reproduction of source code; rather, it pertained to the similarity of certain frames and graphics between the games. The judge in the first instance did not find any similarities between games, because the games were played differently and thus, held a decision that there was no copy-

right infringement. In appeal court, the judge did a summary what is computer-generated works and who is a programmer. According to his view, computer works are frames which demonstrated on a screen, while the game's programmer is a person who took necessary measures to create innovative works and thus he is the author of the work [32].

It is worth mentioning that the term of copyright protection is different between common creative works and works produced by AI, according to the article 12 (2) and (7) of CDPA. For example, the period of legal protection for copyright expires after 70 years, while for AI-generated works, the term lasts 50 years. Therefore, though British copyright recognizes the works created by AI, the level of protecting copyright tends to be short and less stable than common creative works [27].

From abovementioned CDPA norms and cases, it would fair to say that AI cannot be recognized as a copyright owner, because only a person can be responsible for copyright infringement, when it occurs. Furthermore, the author of computer generated works might be not only the programmer of AI agent, but also end user who contributes skills and labour of a creative work, according to British copyright law. Therefore, it seems that AI-generated works are handled well by the copyright law and case law in the UK [29]. According to the UK approach, a work could be original if it comes from author's own skill, labour, judgement and effort, while a situation in European Union seems to be quite different and they have taken own approach with regard to the originality of the creative works. This difference will be analyzed in the next part.

EUROPEAN APPROACH OF COPYRIGHT PROTECTION OF AI WORKS

It is noteworthy to mention that European jurisdictions lack alternative norms like section 9(s)3, and neither international treaties nor copyright directives, which aim to harmonize copyright laws, address the subject matter. For example, the Spanish copyright law states that an author is the natural person who creates a work [33], while Art. 7 of German copyright law claims that the "author" is a creator of the work, although it does not indicate that this must be a person, Art. 11 says that copyright protects the author who created the work with his intelligence and creativity [34].

The European approach of copyright protection on computer-generated works is directly related with the conception of author's own intellectual creation. For example, the European Directive on computer program clarifies that computer program can be protected, if it comes from author's own intellectual creation. Both directives on database and on certain aspects of copyright contain similar rules on this issue. According to the latter directive, a photographic work can be accepted if it is author's intellectual own creation reflecting his personal involvement. Taking these rules into account, the European Court of Justice (ECJ) standardized the criteria for assessing a work as an "author's own intellectual creation." The court elucidated that an author creates the work with their personal touch [24]. To deal with computer-generated works, European jurisdictions relied on their standards or approaches, which could be found in some relevant cases. For instance, Infopaq (a plaintiff) was a media business which selected and summarized papers from Danish daily newspapers (a defendant). The main issue was Infopaq's right to scan and print extracts from papers to respond to customer's request. The whole process included scanning original articles, and creating 11 word extracts for customers. The court needed to answer a question of whether these snippets have originality to be protected by copyright. In its decision, the court explained that work could be original if it included the "author's own intellectual creation" [35].

Moreover, in Bezpečnostní softwarová asociace case [36], the court provides a further explanation in terms of computer-generated works. The core issue was to define graphical interface as an original work, according to European copyright standards. Consequently, the court acknowledged that a graphical interface can be protected by co-

pyright if it involves the author's intellectual contribution [29].

From above cases, one may conclude that to be covered by European copyright law, there must be not only a natural author for a copyrighted work, but also the work must link to author's personality.

US APPROACH OF COPYRIGHT PROTECTION FOR COMPUTER-GENERATED WORKS

It could be claimed that authorship is one of the main impediments to recognize a copyright in AI-generated works. For instance, the US Copyright Office (Office) has recently taken a position that to accept authorship, a work must be created by a person. Thus, the works are not copyrightable, if they do not meet these requirements. Besides, the Office divided non-human works which are not copyrightable into two categories: nature-made and machine-made works. To explain the former, the Office provides some examples like a mural drawn by an elephant or driftwood shaped or smoothed by the ocean and etc, while in the latter, the examples such as medical photos created by X-rays, ultrasounds or transposing a song from B major to C major.

Some scholars state that authorship should be reviewed again to include both human and non-human authors. One of them is professor Abbot who strongly supports authorship to non-human authors and believes that it may bring certain positive effects like AI technology development as well as prevention of AI machines works from being in public domain [37]. However, Hristov does not support this idea claiming that there is no need to redefine "authorship" by including human and non-human authors, because it may open more legal issues and uncertainties in future [1].

Professor Clifford claimed that the US Copyright law system is based on a fact that only human creativity may create works, with or without assistance of computers. Thus, it means that when a computer creates the work itself, its outputs will not be protected by copyright. It is stated that several factors have contributed to this principle, and one of them is the concern that if machines are capable of generating creative works eligible for copyright protection, they might be deemed the authors of these works [38]. One may find it unacceptable when a machine is an author, because of that people may lose respect to fundamental copyright principles such as licensing and assignment, and the duration of copyright protection. So, it could be claimed that current legal system is not ready to accept machines as copyright owners. The issue related to non-human authors have been recently popular with famous, Naruto case involving instead of machines a monkey. First, there was a dispute when a photographer sued Wikipedia for copying the "selfie" of black macaque named Naruto who shot the selfie by using the photographer's camera. On that case, website company rejected to take the monkey's selfie, by arguing that the photographer did not own the copyright. On the next case, the same photographer was sued by PETA organization, which acted on behalf of monkey, claiming the photographer violated copyright because of illegal copying of the photo. [38]. As a result of Naruto case, the court rejected authorship to a monkey by claiming that it only recognizes "people" or "humans" when it comes to authorship [39].

One of the features of the US approach is that some US legal scholars suggest work-for-hire doctrine could be used to solve AI-generated outcomes. The doctrine, as abovementioned, basically allows an entity which hired another person to create a work to be as an initial author. Unlike civil law countries, common law countries like the US permits to separate creative works from their creators to obtain exclusive rights. The problem may arise when its application to works created by AI machines would treat such machines as a subject of legal relationships, what appears to be problematic in law. The supporters of this approach claim that even if the work-for-hire doctrine is not applicable to works generated by AI, a solution might be the contractual arrangement between manufactures of such machines and their customers [25].

But, the issue of this approach is that it is closely connected to contractual arrangement between authors on the one side, and entities who hired them on the other. According to contractual arrangement, the doctrine helps to determine whether individual copyright holders are hired employees or independent contractors. The contemporary development of advanced technology has resulted in the increasing number of AI-generated works and made clear that people are no longer only source of creativity and innovation. It seems that the US Copyright Act ignores this reality and put many AI-generated creative works in public domain. This approach might be non-effective for programmers and AI developers to invest resources in the future AI development. From above said, it is plausible to state that the US jurisdiction does not grant copyright status to AI objects, since it still strongly focuses on human creativity. Analyzing various jurisdictions, it is fair to say that copyright law is based on human authorship, except a few states which have own approach towards computer-generated works.

AI can be "corporeal" (robot, car) or "disembodied" (computer program "without a body"). However, both the robot and the car also work on the basis of a program developed by a specific author(s). They can be either one individual, a collective, or a legal entity. Therefore, we state that the primary subject of the legal relationships in question is the specific individual or entity responsible for creating a unique program referred to as "artificial intelligence." Its main feature is the possession of a "mind," i.e. the logic of thinking, the ability to design, analytics, etc. Depending on the program, the AI may be designed: 1) to perform physical and mechanical actions (cars, robots); 2) to create works of literature, art (texts, paintings, music, etc.).

The problems we have examined are related to the existence of an AI software product already created by the authors. In our view, copyright objects generated by AI lack a clearly identifiable author, making it challenging to discuss copyright protection specifically for works of literature and art created by AI. Instead, the focus should be on safeguarding the rights of the creator of the AI, namely the computer program itself. If AI generates technical solutions or spatial objects that exhibit characteristics of novelty and industrial applicability, questions may arise regarding authorship and the protection of not only copyright but also patent rights. But we believe that here we can only talk about the authorship of the person who created the AI program, who may have rights to property remuneration for the use of such technical results/solutions.

As for such "traditional" objects as literary, artistic, and musical works, even if they are recognized as "masterpieces," such creative results can still be called "works without an author." They can immediately have the status of "public domain," because in the digital age such works will immediately receive wide access on the web, and the creators of AI programs themselves try to distribute them as much as possible. The author of an AI program can claim protection only if he has taken all measures aimed at not removing the result of creative activity.

It is foreseeable that new legal scenarios will emerge as individuals attempt to attribute authorship to works created by AI and assert themselves as the authors. To date, no such precedents have been publicly disclosed. Consequently, legislative bodies will contend with the question of whether to recognize specific individuals as the authors of these creative outputs generated by AI.

These technologies, both with and without human involvement, are indeed generating new creative works. Movies like "Ex Machina" featuring AI characters like Ava have sparked discussions about the role of AI in creative expression. And it seems that it is just the beginning of the process. AI significantly poses challenge to the core of copyright law. Based on the research conducted on the copyright protection of AI-generated machines, it could be concluded as the following. First, AI is a computer program relied on certain algorithms for evaluating appropriate data and makes independent decisions. It can learn from practice

and improve its functions to achieve its goals. Second, as analyzed the approaches taken by Europe and the US put human's personality as a center of creative process, however this solution in our view seems to be not promising and unreasonable.

Our main proposal is to introduce the term "artificial intelligence" as a category of copyright objects in the Copyright Act 1996. It is necessary to correlate the definition of the term "computer program/computer software" and "artificial intelligence."

We believe that the most developed in the aspect of copyright protection of artificial intelligence objects is the law of the UK, which defines computer-generated works and their authors. Having assessed this, the UK's model, providing copyright protection for the person who has taken necessary arrangements to create work should be widely accepted and recognized. As mentioned above, most jurisdictions explicitly support absolute human authorship by arguing that the copyright owner ought to be a natural person rather AI or computers. Given the current level of technology, this view seems to be reasonable, but if more advanced AI can produce the work without human involvement in the future, the question of authorship needs to be examined.

Last but not least, it should be mentioned that not only in Kazakhstan, but also even in developed states there are few case laws about AI. The paper has primarily concentrated on cases related to computer-generated works and databases. Since there is no legal status of computer-generated works in the Kazakh copyright law, assessing the UK legal practice, we suggest to amend Article 2 of the Copyright Act 1996 and to state it in the following edition: "the author is a person, who created the works of science, literature and art or the developer, and/or owner, user of the artificial intelligence which generated such works." Besides, we propose granting rights to developers as well as users or owners of AI-generated works. By amending the copyright law like this and recognizing a programmer and owner who stands behind AI as an author, we believe that it helps to make more investment in the research and development of AI which is one of the priority tasks of Kazakhstan.

This paper offers practical legal recommendations aimed at improving national (Kazakh) legislation concerning copyright protection for works generated by AI technologies. Additionally, the content of the paper may serve as valuable material for future legal research into the regulation of copyright for AI-generated outputs.

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Ансаган Аронов (https://orcid.org/0000-0003-3821-9158),
Сара Ідришева (https://orcid.org/0000-0003-3473-3395)

Юридичний факультет університету імені Максута Нарікбаєва,
Коргалжинське шосе, 8, Астана, 010000, Республіка Казахстан,
+77 17 2703030, info@mnu.kz

ЗАХИСТ АВТОРСЬКИХ ПРАВ НА ТВОРИ, СТВОРЕНІ ЗА ДОПОМОГОЮ ШТУЧНОГО ІНТЕЛЕКТУ

Вступ. На сьогодні штучний інтелект (ШІ) має величезний вплив на життя людей, зокрема такі технології швидко пишуть тексти, розробляють програмне забезпечення та створюють різні види мистецтва. Можна помітити, що багато спортивних та ділових новин, доступних в Інтернеті, написані саме в такий спосіб. Згідно з чинною правовою базою багатьох держав, твори, створені за допомогою ШІ, зазвичай розглядаються як простий інструмент. Однак з розвитком технологій штучного інтелекту ця точка зору зазнала значних змін.

Проблематика. Поява ШІ поставила серйозні завдання перед законодавством про інтелектуальну власність, зокрема, про авторське право. У сфері авторського права роботи, створені за допомогою ШІ, викликали низку юридичних суперечок про те, чи може ШІ бути автором творчих робіт, як повинні захищатися роботи ШІ і кому належать права на такі роботи.

Мета. Критично проаналізувати проблеми авторського права, що виникають при використанні технології ШІ. Визначити особливості правових норм, що регулюють захищені авторським правом твори, створені штучним інтелектом, в розвинених країнах, і запропонувати відповідні рекомендації щодо вдосконалення національного (казахстанського) законодавства про авторське право, що стосується творів, створених за допомогою штучного інтелекту.

Матеріали й методи. Дослідження базується на порівняльно-правовому методі, застосовано загальнонаукові та специфічні наукові методи.

Результат. Ґрунтуючись на зарубіжній практиці, показано, що коли мова йде про творчі доробки, створені за допомогою ШІ, автором слід вважати людину, яка вжила необхідних заходів для створення таких творів.

Висновок. Надано практичні рекомендації щодо вдосконалення казахстанського законодавства в частині захисту авторських прав на твори, створені з використанням технології штучного інтелекту. Результати можуть слугувати цінним матеріалом для майбутніх юридичних досліджень в галузі регулювання авторських прав на продукти, створені з використанням штучного інтелекту.

Ключові слова: авторське право, штучний інтелект, автор, авторство, оригінальність.