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Future of the Artificial Intelligence: Object of Law or Legal Personality?

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quasi subject of law,
robot

Abstract

Objective: to reveal the problems associated with legal regulation of public relations, in which artificial intelligence systems are used, and to rationally comprehend the possibility of endowing such systems with a legal subject status, which is being discussed by legal scientists.

Methods: the methodological basis of the research are the general scientific methods of analysis and synthesis, analogy, abstraction and classification. Among the legal methods primarily applied in the work are formal-legal, comparative-legal and systemic-structural methods, as well as the methods of law interpretation and legal modeling.

Results: the authors present a review of the state of artificial intelligence development and its introduction into practice by the time of the research. Legal framework in this sphere is considered; the key current concepts of endowing artificial intelligence with a legal personality (individual, collective and gradient legal personality of artificial intelligence) are reviewed. Each approach is assessed; conclusions are made as to the most preferable

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amendments in the current legislation, which ceases to correspond to the reality. The growing inconsistency is due to the accelerated development of artificial intelligence and its spreading in various sectors of economy, social sphere, and in the nearest future – in public management. All this testifies to the increased risk of a break between legal matter and the changing social reality.

Scientific novelty: scientific approaches are classified which endow artificial intelligence with a legal personality. Within each approach, the key moments are identified, the use of which will allow in the future creating legal constructs based on combinations, avoiding extremes and observing the balance between the interests of all parties. The optimal variant to define the legal status of artificial intelligence might be to include intellectual systems into a list of civil rights objects, but differentiating the legal regulation of artificial intelligence as an object of law and an "electronic agent" as a quasi subject of law. The demarcation line should be drawn depending on the functional differences between intellectual systems, while not only a robot but also a virtual intellectual system can be considered an "electronic agent".

Practical significance: the research materials can be used when preparing proposals for making amendments and additions to the current legislation, as well as when elaborating academic course and writing tutorials on the topics related to regulation of using artificial intelligence.

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Introduction

Today, humanity finds itself in the period of social transformation related to substituting one technological order for another; "smart" machines and software are rather rapidly learning; artificial intelligence systems increasingly become able to substitute people in many spheres of activity. One of the questions more and more often raised in connection with improving artificial intelligence technologies is that of recognizing artificial intellectual systems to be subjects of law, as they have achieved the level of making completely autonomous decisions and potential manifestation of "subjective will". This question was formulated hypothetically as early as in the 20th century (McNally & Inayatullah, 1988; Solum, 1992). In the 21st century, the scientific discussion is ramped up steadily, reaching another extreme with each introduction of new artificial intelligence models into practice, like emergence of unmanned vehicles in the streets or presenting robots with a new set of functions (Bertolini & Episcopo, 2022).

The legal problem of defining the status of artificial intelligence is of general theoretical character, which is due to the objective inability to forecast all possible results of developing new models of artificial intelligence. However, artificial intelligence systems (AI systems) are already factual participants of certain social relation, which requires setting the "benchmarks", i. e. solving the fundamental issues in this sphere in order to legislatively stipulate, hence, to reduce the share of uncertainty in forecasting the development of relations involving artificial intelligence systems, in the future.

The question, used as the article title, about the supposed personality of the artificial intelligence as the research object, undoubtedly, does not comprise all artificial intelligence systems, among which there are a lot of "electronic assistants" not claiming to be legal personalities as their set of functions is limited and their represent a narrow (weak) artificial intelligence. Rather, we will speak of "smart machines" (cyberphysical intellectual systems) and generative models of virtual intellectual systems, which by their abilities are increasingly verging to the general (strong) artificial intelligence, comparable to the human's and in future exceeding it.

1. Legal status of artificial intelligence: sources of the problem

1.1. Level and rate of artificial intelligence development

The level of artificial intelligence development can now be discussed only conditionally, as the speed of its development is accelerating and what was relevant at the moment of writing the article is rapidly becoming obsolete. This is especially true for the most rapidly developing sphere of artificial intelligence – artificial neural networks. By the beginning of 2023, multimodal neural networks, such as ChatGPT, DALL-e and others, the intellectual abilities of which are being improved through increasing the number of parameters (perceived modalities, including those inaccessible to humans), as well as through using large amounts of data for learning, which humans cannot physically

process, have raised the acuteness of the issue of creating a string artificial intelligence. For example, multimodal generative models of neural networks can create pictures, literary and scientific texts so that one cannot always discern whether they were created by a person or an artificial intelligence system.

IT experts speak of two qualitative leaps: velocity leap (periodicity of emergence of qualitatively new models), which is now measured not in years but in months as a maximum, and volatility leap (impossibility to accurately forecast what may happen in the sphere of artificial intelligence even up to the end of the current year)[1]. ChatGPT-3 model (the third generation of natural language processing algorithm by OpenAI company) appeared in 2020 and could process a text, the next generation model – ChatGPT-4, launched by the producer in March 2023, can "work" not only with texts but also with images, while the model of the generation to come is learning and will be capable of more.

A few years ago the supposed moment of technological singularity, when the development of machines becomes actually unmanageable and irreversible, drastically changing the human civilization, was considered to be at least several decades away, but today more and more researchers think that it may happen much sooner[2]. This implies the emergence of the so called strong artificial intelligence, which will demonstrate the abilities comparable to human intelligence and be able to solve a similar or even broader range of tasks. Unlike the weak artificial intelligence, the strong one will possess consciousness, and one of the indispensible conditions of emerging consciousness in intellectual systems is the possibility to perform multimodal behavior integrating data from various sensor modalities (text, image, video, sound, etc.), "linking" information of various modalities to the reality and building full-fledged coherent "metaphors of the world", as is peculiar to humans[3].

In March 2023, over one thousand researchers, IT experts and entrepreneurs in the sphere of artificial intelligence signed an open letter published in the website of the US scientific-research center Future of Life Institute[4] which specializes in studying existential risks for humanity. The letter calls for pausing the training of new generative multimodal neural network models, as the lack of common safety protocols and the legal vacuum significantly increase the risks, because the speed of artificial intelligence technologies development has sharply increased due to the "ChatGPT revolution". It was also marked that the artificial intelligence models have developed unexplainable capabilities unforeseen

1 Karelov, S. (2023, April 5). *Telegram channel "Little-known interesting facts"*. https://t.me/s/theworldisnoteasy

2 *David Shapiro (expert on artificial cognitive architecture) predicts. "AGI within 18 months"*. (2023, March 28). https://www.reddit.com/r/singularity/comments/1254azr/david_shapiro_expert_on_artificial_cognitive/

3 Kolonin, A. (2021, December 8). *On the depth, transparency and "power" of AI at the moment*. https://russiancouncil.ru/analytics-and-comments/analytics/o-glubine-prozrachnosti-i-sile-ii-v-tekushchem-momente/

4 *Pause Giant AI Experiments: An Open Letter.* (2023, March 22). https://futureoflife.org/open-letter/pause-giant-ai-experiments/

by their developers and, probably, the share of such capabilities will gradually increase. Besides, such technological revolution sharply stimulates the creation of intellectual gadgets, which will be widely spread, and the new generations, today's kids grown up in constant communication with artificial intelligence assistants will differ greatly from the previous generations.

Is it possible to impede the artificial intelligence development so that the humanity could adapt to the new conditions? Theoretically it is, if all states facilitate it through national legislations. Will they do it? Judging by the published national strategies, they will not; on the contrary, each state sets a mission to win the competition (maintain leadership or reduce the gap). In the Russian Federation, the task of accelerated developing of the artificial intelligence technologies was set in the National Strategy of artificial intelligence development up to 2030, adopted by the Decree of the Russian President of October 10, 2019 No. 490 "On the development of artificial intelligence in the Russian Federation"[5] (further – National Strategy). According to clause 24 of the National Strategy, the main areas include: supporting research for providing advanced development of artificial intelligence, elaborating intellectual software, improving accessibility of data necessary for development of artificial intelligence technologies, creating a complex system of regulating relations emerging in connection with development and use of artificial intelligence. Clause 30 of the National Strategy stipulates that the development of Russian technologies requires supporting scientific research aimed at creating cardinally new results, including creating strong artificial intelligence. A similar task is posed in the national strategies of artificial intelligence development of other countries of the world.

1.2. Spreading artificial intelligence technologies in practice

Opportunities of artificial intelligence attract entrepreneurs, thus, business structures invest a lot into new developments, while success of each new model stimulates this process. The volumes of annual investment are growing, given both private companies and state investing into developments; the global market of solutions in the sphere of artificial intelligence amounts to hundreds billion dollars; according to forecasts, in particular those contained in the European Parliament Resolution of 3 May 2022 "On Artificial Intelligence in a Digital Age", the contribution of artificial intelligence into the global economy will exceed 11 trillion euro by 2030[6].

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5 On the development of artificial intelligence in the Russian Federation: Decree of the Russian President of October 10, 2019 No. 490. (2019). *Collection of legislation of the Russian Federation*, No. 41. Article 5700.

6 *European Parliament Resolution of 3 May 2022 on Artificial Intelligence in a Digital Age (2020/2266(INI))*. https://www.europarl.europa.eu/doceo/document/TA-9-2022-0140_EN.html

Practice-oriented business results in introducing artificial intelligence technologies into all spheres of economy. Artificial intelligence is used both in extraction and processing industry (metallurgy, fuel and chemical industry, machine building, metalworking, etc.). It is used for forecasting the efficiency of developed products, automation of assembly lines, reduction of defects, improving logistics and preventing downtime.

Using artificial intelligence in transportation includes both autonomous transportation means proper and optimization of routes using predicting transportation streams, ensuring safety by preventing dangerous situations. Launching unmanned vehicles to public roads is an issue actively discussed by parliaments of different countries of the world. In 2021, the Russian Ministry of Transport also developed a draft law "On highly automated transportation means and on making amendments in certain legislative acts of the Russian Federation"[7], and a year later a Decree of the Russian Government of December 29, 2022 No. 2495 established a "Program of experimental legal regime in the sphere of digital innovations in rendering transport services using highly automated transportation means in the territories of some Russian Federation subjects"[8]. At the verge of transportation sphere and agriculture, autonomous harvesters are increasingly used, with the process being even more rapid in agriculture as there are no tight legal restrictions referring to automobile transport on public roads.

In banking, AI systems almost completely replaced people when estimating creditworthiness of borrowers; they are increasingly used to develop new banking products and to increase the safety of banking operations.

Artificial intelligence technologies "are capturing" not only business but also social sphere: healthcare, education, employment. Applying artificial intelligence in medicine allows improving diagnostics, development of new medications, performing surgery using robotics; in the sphere of education it allows individualizing lessons, automating assessment of students and professional skills of teachers.

Employment is increasingly changing today due to an exponential growth of platform employment. The share of persons working via digital labor platforms, complemented with artificial intelligence, is steadily growing worldwide, according to the data of International

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7 *Draft of Federal Law "On highly automated transportation means and on making amendments in certain legislative acts of the Russian Federation" No. 02/04/06-21/00116763*. https://base.garant.ru/56880577/

8 On establishing an experimental legal regime in the sphere of digital innovations and adopting a Program of experimental legal regime in the sphere of digital innovations in rendering transport services using highly automated transportation means in the territories of some Russian Federation subjects: Decree of the Russian Government of December 29, 2022 No. 2495. (2022, December 30). *Official Internet portal of legal information*. http://publication.pravo.gov.ru/Document/View/0001202212300090

Labor Organization[9]. Platform employment is not the only component of transformation in labor sphere; the growing level of production robotization is strongly influencing it too. According to the International Federation of Robotics, the number of industrial robots continues to grow worldwide, with the most rapid rate of robotization in Asia, first of all, in the People's Republic of China and in Japan[10]. Russia significantly lags behind in this field, but it is the bridging of this gap that the new federal project is aimed. The project is devoted to developing Russian robotics and should stipulate legal, taxation and other conditions for developing production and launching of industrial robots. The federal project, in compliance with the order of the Russian President, is to be prepared in summer 2023. The project is to include a list of state support measures for developing production and launching of industrial robots "to provide annual reduction of lagging in the number of such robots by 10 thousand industrial workers in the country from the worldwide average level"[11]. Also, a draft is being prepared of the Order of the Russian President on making amendments in the National Strategy of artificial intelligence development, "aimed at widespread introduction of artificial intelligence technologies in economic and social sectors and in the state management system"[12].

Indeed, the abilities of artificial intelligence for data analysis, used for production management, diagnostic analytics and prognostics, excite serious interest in the states. Artificial intelligence is being introduced in public management. Today, the work on creating digital platforms is activated in order to render state services, automate many processes associated with elaborating decisions by state authorities.

The notions "artificial personality", "artificial sociality" are more and more often mentioned in the public discourse; this testifies to the fact that development and implementation of intellectual systems have passed from the pure technical domain into the sphere of researching its varied means of implementation in humanitarian and sociocultural human activities (Alekseev et al., 2023).

Given the above, one may assert that artificial intelligence is more and more profoundly penetrates into the lives of people. The presence of artificial intelligence systems in our life will become more visible in the years to come; it will increase both in the working environment and in public space, in services and homes. Artificial intelligence will more and more ensure the increased efficiency of achieving results through intellectual automation

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9 *Prospects of employment and social protection worldwide: Role of digital labor platforms in transformation of labor sphere.* (2021). The ILO Decent Work Technical Support Team and Country Office for Eastern Europe and Central Asia. Moscow: ILO.

10 *World Robotics R&D Programs*. (2023). https://ifr.org/downloads/papers/Executive_Summary_-_World_Robotics_RD_Programs_V02.pdf

11 *Instructions of the Russian President following Artificial Intelligence Journey conference (November 23–24, 2022).*(2023, January 29). Pr-172, clause 1, subclause "e". http://www.kremlin.ru/acts/assignments/orders/70418 (access date: 20.04.2023)

12 *Instructions of the Russian President following Artificial Intelligence Journey conference (November 23–24, 2022).*(2023, January 29). Pr-172, clause 5. http://www.kremlin.ru/acts/assignments/orders/70418

of various processes, creating new opportunities and simultaneously bringing new threats for people, communities, and states.

With the growth of intellectual level, AI systems inevitably become an indispensible part of the society; people will have to coexist with them. Such a symbiosis will include cooperation between people and "smart" machines, which, according to a Nobel Prize winner in Economic Sciences J. Stiglitz, will lead to transformation of civilization (Stiglitz, 2017). Even today, according to some jurist, "to increase the level of wellbeing of humans, law must not make distinctions between human activity and that of artificial intelligence, when people and artificial intelligence perform the same tasks" (Abbott, 2020). One should also take into account that the development of humanoid robots acquiring the physiology increasingly similar to the human's one, will cause, inter alia, their performing gender roles as partners in the society (Karnouskos, 2022).

States have to adapt legislation to the changing public relations: the number of laws aimed at regulating relations, in which artificial intelligence systems are involved in one position or another, is rapidly growing worldwide. According to the Stanford University's AI Index Report – 2023[13], while only one law was adopted in 2016, in 2018 there were 12, in 2021 – 18, and in 2022 – 37 laws. This pushed the United Nations Organization towards formulating a position on the ethics of using artificial intelligence at the global level. In September 2022, a document appeared, which contained principles of the ethical use of artificial intelligence[14] and was based on Recommendations on the Ethics of Artificial Intelligence adopted a year earlier by UNESCO General Conference[15]. Nevertheless, the rate of development and implementation of artificial intelligence technologies significantly exceed the rate of corresponding changes in law.

The development of artificial intelligence technologies has launched the process of creating machine-readable law, which only AI systems can understand; moreover, one may speak not only of machine-readability of legal norms but also of their machine-projectability and machine-implementabililty. AI systems are already used for high quality legal analytics and formulating machine recommendations for lawyers (Ashley, 2017). Works on creating machine-readable law are actively executed today in many countries; in 2021 the Commission on digital development under the Russian Government adopted the Russian concept of developing the technologies of machine-readable law[16].

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13 *AI Index Report 2023*. (2023). https://aiindex.stanford.edu/report/

14 *Principles for the Ethical Use of Artificial Intelligence in the United Nations System*. (2022, September 20). https://unsceb.org/principles-ethical-use-artificial-intelligence-united-nations-system

15 *Recommendation on the Ethics of Artificial Intelligence*. (2021, November 25). https://unesdoc.unesco.org/ark:/48223/pf0000373434

16 The concept of developing the technologies of machine-readable law, adopted by the Government Commission on digital development, using information technologies for improving living standards and conditions of entrepreneurial activity, protocol of 15.09.2021 No. 31. *KonsultantPlyus*. http://www.consultant.ru/document/cons_doc_LAW_396491/

1.3. Artificial intelligence system as an object of law

Today, artificial intelligence systems do not possess a legal personality and are considered objects of civil law – this is a certainty for any national legal system, not only a Russian one. Regardless of the achieved level of artificial intelligence development, AI system is someone's property. Accordingly, both virtual and cyberphysical AI systems (the two existing types of artificial intelligence by the form of its embodiment) are what legal relations emerge about.

Let us consider the legal regime of artificial intelligence as an object of law according to the Russian legislation. In compliance with Article 128 of the Civil Code of the Russian Federation[17] (further – CC RF), the objects of law are things, other property, including property rights, protected results of intellectual activity, nonmaterial goods, etc.

The cyberphysical by form, i. e. possessing a "body", artificial intelligence (as a rule, a robot) is considered to be a thing by the current legislation, but no special features of the legal regime of such things are not stipulated, their conveyancing is not restricted (Somenkov, 2019). It is assumed admissible to characterize robots similarly to indivisible items in compliance with Article 133 CC RF, as an attempt to divide artificial intelligence proper (that is, software) from the robot's "body" as its shell will entail inevitable change of its purpose or even destruction.

In the international private legal practice, cyberphysical AI systems also have the status of a thing in the general sense and a good in commercial terms. For example, International Classification of Goods and Services (NCGS) explicitly names a specific kind of goods: "Humanoid robots with artificial intelligence" (class 09, basic No. 090778)[18].

In the Russian Federation, artificial intelligence in virtual form also has no special legal position and today is actually regulated by the norms contained in part 4 CC RF, referring to untitled copyright objects. However, for effective legal protection of such object of civil rights, virtual AI systems have to be recognized as software, so that the provisions of Article 1259 CC RF, stipulating the legal protection of software similarly to that of literary works, could be extended to them.

The definition of the "artificial intelligence" notion can be found in Federal Law of April 24, 2020 No. 123-FZ "On conducting an experiment of establishing special regulation with a view of creating necessary conditions for developing and introducing artificial intelligence

[17] Civil Code of the Russian Federation. (1994, December 5). *Collection of legislation of the Russian Federation,* No. 32. Article 3301.

[18] International Classification of Goods and Services for registration of signs (NCGS) (11th edition, publication 1). "Kodeks" legal system. https://docs.cntd.ru/document/420273241

technologies in the Russian Federation subject – city of federal significance Moscow and making amendments to Articles 6 and 10 of Federal Law 'On personal data'"[19]:

"Artificial intelligence is a complex of technological solutions enabling to imitate human cognitive functions (including self-learning and searching solutions without a preset algorithm) and to obtain the results of executing certain tasks, comparable as a minimum with the results of human intellectual activity. The complex of technological solutions includes information-communication infrastructure (including information systems, information-communication networks, and other technical means of information processing), software (including using machine learning methods), processes and services of data processing and searching for decision".

Judging by the cited document, one may conclude that an AI system does not correspond to the definition of software contained in Article 1261 CC RF; such systems are not limited to just a set of data and commands intended for a computer functioning, i.e. have not only a software component; thus, for the purpose of further legal protection, such an AI system should be recognized as a complex object of intellectual property, stipulated by Article 1240 CC RF (Vasilevskaya et al., 2021).

It should be noted that while previously IT experts defined any artificial intelligence system as a software and hardware package, today the hardware part in virtual intellectual systems can be considered nonexistent, hence, the problem is removed. For example, the definition of artificial intelligence given in the Communication from the Commission to the European Parliament mentions that a virtual intellectual systems may have no hardware part of its own at all: "Artificial intelligence (AI) refers to systems demonstrating intelligent behavior, analyzing environment and taking actions – with a certain degree of autonomy – to achieve certain goals. AI-based systems may be purely software ones, acting in the virtual world (for example, voice assistants, software for analyzing images, search systems, speech and facial recognition systems) or AI may be built into hardware devices (for example, robots with artificial intelligence, unmanned vehicles, drones or applications of the Internet of Things)"[20].

Referring AI systems to objects of law does not exclude the opportunity of legal stipulation of the features of their legal regulation in the future, depending on the form of the artificial intelligence – virtual or cyberphysical, as well as taking into account the difference in the level of artificial intelligence. For example, some researchers propose distinguishing

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19 "On conducting an experiment of establishing special regulation with a view of creating necessary conditions for developing and introducing artificial intelligence technologies in the Russian Federation subject – city of federal significance Moscow and making amendments to Articles 6 and 10 of Federal Law 'On personal data'": Federal Law of April 24, 2020 No. 123-FZ. (2020). *Collection of legislation of the Russian Federation*, No. 17. Article 2701.

20 Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions. *Artificial Intelligence for Europe, Brussels, 25.04.2018 COM(2018) 237 final.* https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0237&from=EN

a separate category of advanced cyberphysical systems, assuming that the influence of "smart" robots on the society will be much more significant than that of virtual systems, due to several factors, including the presence of the "body" and emergence, i. e. appearance of qualities in the system which were not inherent in its components (Calo, 2015).

One should recognize as well-grounded the opinion about the need to apply to AI systems a legal regime stipulated for sources of increased danger. Today, a court considering a particular case may decide at its own discretion whether a certain object refers to the "source of increased danger" category or not (Laptev, 2019). Artificial intelligence corresponds to the definition of a source of increased danger due to its ability to make autonomous decisions differing from the initially installed program. It should be specified that this should refer not to all systems with elements of artificial intelligence, which include many smart phone applications, but only advanced models. In this aspect, a proposal by V. V. Arkhipov and V. B. Naumov seems rational, namely, to recognize such AI systems to a property of special kind, thoroughly regulating their legal regime through confirming their status of "the property capable of autonomous actions" (Arkhipov & Naumov, 2017), especially taking into account that the more advanced artificial intelligence models become, the more control functions will be imposed on them (Greenstein, 2022).

One cannot but mention that the recognition of artificial intelligence to be an object of law offers a very limited choice of variants in solving a number of questions, the significance of which will only increase with time. These questions include:

1. Who will be liable for the damage incurred by the actions of AI systems, given that they become more and more autonomous?

2. Who will possess rights to the results of creative intellectual activity (given that the level of results becomes higher and the participation of humans, even indirect, may actually be reduced to zero)?

The answers to these questions so far include only a person – a producer, owner or user. Will this situation stay the same in the future? As for the liability for the damage incurred by an AI system, "while previously it was believed that no cardinal changes in regulating the institution of legal liability will be required, today there are no grounds to say so with absolute confidence. The reason is the increased level of autonomy of the artificial intelligence systems with the broadened range of possibilities of their use" (Kharitonova et al., 2022). Again, the corner stone is the problem of the growing autonomy of AI systems, hence, changing the legislation is just a matter of time and this change will reflect the new "balance on interests" (McCarty, 2017).

2. Main concepts of the legal personality of artificial intelligence

2.1. Concept of individual legal personality of artificial intelligence

Proceeding to the concepts of potential endowing intellectual systems with legal personality, one should admit that implementation of any of such approaches will require fundamental reconstruction of the established general theory of law and changing a number of provisions

in certain branches of law. Notably, proponents of various views often use the term "electronic person", thus, using this term does not allow determining, the proponent of which concept the author of a given work is without getting acquainted with the work content.

The most radical approach and, quite logically, the least popular among academic circles is the concept of individual legal personality of artificial intelligence. Supporters of this approach put forward the idea of "complete inclusiveness" (extreme inclusivism), which implies endowing AI systems with the legal status similar to that of a human being and recognizing their own interests (Mulgan, 2019), given their social significance or social meaning (social valence). The latter is due to the fact that "the physical embodiment of the robot tends to make a person treat that moving object as if it were alive. This is even more observable when the robot has anthropomorphic characteristics, since the resemblance to the human body causes people to start projecting emotions, feelings of pleasure, pain and care, as well as desires to constitute relationships" (Avila Negri, 2021). Projecting of human emotions on inanimate objects is not new, stemming from the history of humanity, but applied to robots it entails numerous consequences (Balkin, 2015).

As prerequisites of legal consolidation of this position, the following is usually mentioned:

– AI systems achieving the level comparable to human cognitive functions;

– increasing degree of similarity between robots and people;

– humanity, protection of intellectual systems against potential "sufferings".

As can be seen from the list of prerequisites, all of them possess a high degree of theoretization and subjective estimation. In particular, the trend towards creating anthropomorphic robots (androids) is due to the everyday psychological and social demands of people, for whom it is comfortable to feel themselves in a "company" of subjects similar to them. Some modern robots possess other constrictive features due to the functions they perform; these include "multiped" courier robots, whose priority is solid construction and effective distribution of the weight carried. In this case, the last of the mentioned prerequisites comes into force, which is caused by forming emotional links with robots in the human consciousness, similar to emotional links between a pet and its owner (Grin, 2018).

The idea of "complete inclusion" of the legal status of AI systems and a human being is reflected in the works by some jurists. As the provisions of the Constitution (for example, provisions of Chapters 1 and 2 of the Russian Constitution[21]), as well as of sector legislation, do not present a legal definition of a personality, the "personality" concept in constitutional-legal sense theoretically allows for an expansive interpretation. In that case, In this case, personalities will include any holders of intellect whose cognitive abilities are recognized as sufficiently developed. As A. V. Nechkin states, the logic of this approach is that the essential difference of a human being from other living being

[21] *Constitution of the Russian Federation*. https://base.garant.ru/10103000

consists in its unique highly developed intellect (Nechkin, 2020). Recognition of rights of AI systems seems to the next step of a legal system evolution, which gradually expands legal recognition to earlier discriminated people, and today opening access to non-human beings too (Gellers, 2021).

If AI systems are endowed with such legal status, the proponents of his approach consider it well-grounded to provide such systems not with literal citizens' rights in their established constitutional-legal interpretation, but their analogs and certain civil rights with some waivers. This position is based on objective biological differences between a human and a robot. For example, it makes no sense to recognize the right to life for an AI system, as it does not live in biological sense. Rights, freedoms and obligations of artificial intelligence systems should be secondary in relation to citizens' rights; this provision consolidates in the legal sense the derivativeness of artificial intelligence as a creation of a human being.

Among the potential constitutional rights and freedoms of artificial intellectual systems one may list: the right to be free, the right to self-improvement (learning and self-learning), the right to privacy (protection of software against arbitrary interference of the third persons), the freedom of speech, the freedom of creativity, recognition of AI system's copyright and a limited property right. One may also list specific rights of artificial intelligence, such as the right to access to a source of electric power.

As for the obligations of AI systems, it is proposed to constitutionally stipulate the three renowned robotics laws, formulated by I. Asimov: Non-injuring a person and preventing harm by one's own inaction; obeying all orders given by a person, except those aimed at harming another person; taking care of one's own safety, with the exception of the previous two cases (Naumov & Arkhipov, 2017). Some other obligations will be reflected in the norms of civil and administrative law in this case.

The concept of individual legal personality of artificial intelligence has very little chances for its statutorization for several reasons.

First, the criterion of recognizing the legal personality by the presence of consciousness and self-consciousness is abstract; it allows numerous law breaches, abuse of law and provokes social, political problems as an additional reason for the society stratification. This thesis was detailed in the work by S. Chopra and L. White, who stated that consciousness and self-consciousness are not a necessary and/or sufficient condition for recognizing AI systems as a subject of law (Chopra & White, 2004). In the legal reality, comprehensively conscious individuals, for example, children (or slaves in the Roman law), are deprived of or limited in legal personality. At the same time, people with severe mental disorders, including those recognized as legally incapable, or in a state of coma, i. e. under an objective inability to manifest consciousness, in the former case remain subjects of law (although in a limited form), and in the latter case possess the same complete legal personality, without global changes in their legal status. Potential stipulation of the above said criterion

of consciousness and self-consciousness will make it possible to arbitrary deprive citizens of their legal personality.

Second, AI systems will not be able to implement their rights and obligations in the established legal sense, as they act on the basis of a previously written program, while making legally relevant decisions must be based on subjective, moral choice of a person (Morkhat, 2018b), their direct expression of will. All moral attitudes, feelings and desires of such "person" become derivatives of a human intellect (Uzhov, 2017). Autonomy of AI systems in the sense of their ability to make decisions and implement them independently, without external anthropogenic control or purposeful influence of a human (Musina, 2023), is not full-fledged. Today, artificial intelligence is capable of making only "quasi-autonomous decisions", in one way or another based on ideas and moral attitudes of people. In this context, one may consider only an "action-operation" of an AI system, excluding the possibility of a real moral evaluation of the artificial intelligence behavior (Petev, 2022).

Third, recognition of an individual legal personality of artificial intelligence (moreover in the form of equaling to the status of a physical person) entails a destructive change of the established law order and legal traditions formed since the times of the Roman law, and provokes to pose a number of fundamentally unsolvable philosophical and legal issues in the sphere of human rights. Law as a system of social norms and a social phenomenon was created with the account of human abilities and to provide human interests. The established anthropocentric system of normative regulations, international consensus in the field of the intrinsic rights concept will be deemed legally and factually invalid in case the "extreme inclusivism" approach is established (Dremlyuga & Dremlyuga, 2019). Therefore, endowing AI systems, in particular, "smart" robots with a legal personality may turn out to be not a solution to the existing problems but a Pandora's box aggravating social and political contradictions (Solaiman, 2017).

One more point: the works of supporters of this concept usually mention only robots, i. e. cyberphysical systems of artificial intelligence, which will interact with people in the physical world, while virtual systems are left beyond the pale, although strong artificial intelligence, if it emerges, will be embodied in a virtual form too.

Stemming from the whole range of the above arguments, the concept of individual legal personality of artificial intelligence system should be viewed as juridical unrealistic under the current law order.

2.2. Concept of collective legal personality of artificial intelligence

The concept of collective personals in respect of artificial intellectual systems has acquired significant support among the proponents of acceptability of such legal personality. The main advantage of this approach is that it excludes abstract notions and evaluative judgments (consciousness, self-consciousness, rationality, morals, etc.) from legal workmanship. The approach is based on applying legal fiction to artificial intelligence.

In respect of juridical persons, there already exist "advanced methods of regulation, which could be adapted to solve the dilemma of the legal status of artificial intelligence" (Hárs, 2022).

This concept does not imply actual endowment of AI systems with the legal personality of a physical person, but is just an expansion of the current institute of legal persons, proposing to create a new category of legal persons – cybernetic "electronic organisms"[22] (Musina, 2023). In the context of this approach, it is more appropriate to consider a legal person not in compliance with the contemporary narrow notion, in particular, stipulated in Article 48 of the Russian Civil Code (as an organization possessing separate property and liable with it on its obligations, may on its own behalf acquire and implement civil rights, bear civil obligations, be an applicant and respondent at court), but in a broader sense, which presents a legal person as any construct differing from a physical person, endowed with rights and responsibilities in the form stipulated by law. Thus, the supporters of this approach propose viewing a legal person as a subject-essence (ideal essence) by the Roman law (Sanfilippo, 2007).

Similarity between AI systems and legal persons is seen in the means of endowing them with legal personality – via mandatory state registration of legal persons. Only after completing the established registration procedure a legal person is endowed with legal status and capacity, i. e. becomes a subject of law. Such model keeps discussions about the legal personality of AI systems within the legal framework, excluding the possibility of recognizing legal personality on other (extralegal) grounds, without intrinsic prerequisites, while a person is recognized a subject of law by birth.

An advantage of this concept is expanding on artificial intellectual systems the requirement to enter information into respective state registries similarly to the state registry of legal persons (Popova, 2018) as a necessary condition for endowing them with legal personality. This method implements the important function of systematization of all legal persons and creating a common database, which is necessary both for state authorities to implement control and surveillance (for example, in taxation) and for potential counteragents of such person.

The volume of rights of legal persons in any jurisdiction is, as a rule, smaller than that of physical persons; hence, using this construct for endowing artificial intelligence with legal personality is not linked with endowing it with a number of rights, proposed by the supporters of the previous concept.

When using the technique of legal fiction in relation to legal persons, it is assumed that the actions of a legal person are accompanied by uniting physical persons who form their "will" and implement "expression of will" through administrative bodies of the legal person.

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22 These should not be confused with "legal electronic persons" – decentralized autonomous organizations, in which coordination of the participants' activity takes place in accordance with previously coordinated set of rules with automated control over their execution (functioning on the basis of blockchain).

In other words, legal persons are artificial (abstract) formations, designed to satisfy the interests of physical persons who acted as their founders or execute control over them. Similarly, artificial intellectual systems are created to satisfy the needs of definite persons – developers, operators, owners. A physical person using AI systems or programming them is guided by their own interests, which are represented by that system in the external environment.

When theoretically estimating such model of regulation, one should not forget that a complete analogy between the positions of legal persons and AI systems is impossible. As was stated above, all legally relevant actions of legal persons are backed by physical persons, who directly make these decisions. The will coming from a legal person is always determined and fully controlled by the will of physical persons (Shutkin, 2020). Hence, without expression of will of physical persons the implementation of activity of legal persons is impossible; with regard to AI systems, the objective problem of their autonomy is already emerging, that is, the possibility to make decisions without interference of a physical person after the moment of direct creation of such system (Ladenkov, 2021).

It is also important to take into account that AI systems do not satisfy the formal sign of organizational unity, which is mandatory for legal persons. The legal status of a legal person has been formed for many centuries and, like law in general, shows the features of "legal conservatism". On the other hand, the current legislation on legal persons largely restricts the possibilities of endowing AI systems with rights and obligations; an attempt to apply this construction with lead to ungrounded legislative deterrence of innovations (Ponkin & Redkina, 2018), which is inadmissible in view of the content of the above mentioned strategic documents, aimed at rapid introduction of artificial intelligence technologies in various economic sectors, social sphere and public management.

Thus, while the concept of collective persons with regard to AI systems has a certain potential, but it does not correspond to the established legal traditions. However, if one stems from the position that "though the issue of personality is binary" (recognition as or non-recognition a person), but "the content of this status is a specter" of possible variants (Chesterman, 2020), then one should rather speak of a gradient legal personality of artificial intelligence, which will be discussed in the next section.

2.3. Concept of gradient legal personality of artificial intelligence

Due to irremovable restrictions of the above-discussed concepts, a large number of researchers suggest their own approaches to solving the issue of a legal status of artificial intellectual systems. Conditionally, one may refer them to different variations of a "gradient legal personality" concept, according a researcher from Leuven University D. M. Mocanu, who implies a limited or partial legal status and capacity of AI systems with a proviso: the term "gradient" is used because it is not just about including or not including certain rights and obligations into the legal status, but about forming a set of such with

a minimally accepted threshold, as well as of recognizing such legal personality for certain goals only (Mocanu, 2021). Then to the two main variations of this concept one may refer the approaches substantiating:

1) endowing AI systems with a special legal status and including "electronic persons" into the law order as an absolutely new category of the subjects of law;

2) endowing AI systems with a limited legal status and capacity within the frameworks of civil-legal relations through creating a category of "electronic agents".

The position of proponents of various approaches within this concept may be united, in view of the fact that there are so far no ontological reasons to view artificial intelligence as a subject of law; nevertheless, in specific situations there already exist functional reasons to endow AI systems with specific rights and obligations, which "proves the best way of fostering the individual and social interests that the law is meant to protect", endowing these systems with "limited and narrow forms of legal personality" (Bertolini & Episcopo, 2022).

Granting artificial intelligence systems with a special legal status through creating a separate legal institution of "electronic persons" has a major advantage of detailed clarification and regulation of the relations emerging:

– between legal and physical persons and AI systems;

– between AI systems and their developers (operators, owners);

– between a third party and AI systems in civil-legal relations[23].

Within this legal construction, AI system will be controlled and managed separately from its developer, owner or operator (Morkhat, 2018b). Presenting the definition of an "electronic person", P. M. Morkhat focuses on using the above mentioned technique of a legal fiction and the functional orientation of a specific artificial intelligence model: "electronic person" is a technical-legal image (possessing some features of a legal fiction similarly to a legal person), reflecting and embodying a conditionally specific legal personality of an artificial intelligence system, differing depending on its intended function or purpose and capabilities (Morkhat, 2018a).

Just as the concept of collective persons in regard to AI systems, this approach implies keeping special registries of "electronic persons". A detailed and clear statement of the rights and obligations of "electronic persons" serves as the basis for subsequent control on the part of the state and owner of such AI systems. An accurately defined circle of authorities, a narrowed volume of legal status and capacity of "electronic persons" will allow tracing that the given "person" does not go beyond its program due to potentially making autonomous decisions and constant self-learning.

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[23] Schrijver, S. de (2018, January 5). The Future Is Now: Legal Consequences of Electronic Personality for Autonomous Robots. *Who's Who Legal*. https://whoswholegal.com/features/the-future-is-now-legal-consequences-of-electronic-personality-for-autonomous-robots

In formal-legal terms, this model is analogous to endowing legal persons, for example, in the form of unitary enterprises, with a limited (special) legal capacity by implication of clause 2 of Article 48 CC RF. It is also proposed to license certain types of "electronic persons" depending on the activity executed by them, similarly to the licensing stipulated by Federal Law of May 4, 2011 No. 99-FZ "On licensing certain types of activity"[24]. Under such approach, artificial intelligence, at the stage of its creation being an object of intellectual property of software developers, may be endowed with legal personality after relevant certification and state registration, but the legal status and capacity of an "electronic person" will be of special character (Vavilin, 2022).

The introduction of a fundamentally new institution for an established law order will have serious legal consequences, requiring a profound reform of legislation at least in the areas of constitutional and civil law. Researchers rightly note that caution should be exercised when introducing the concept of an «electronic person,» given the difficulties in introducing new persons in law, as expanding the concept of «person» in a legal sense could potentially occur at the expense of limiting the rights and lawful interests of the existing subjects of legal relations. (Bryson et al., 2017). Accounting for these aspects seems realistically impossible, as the legal personality of physical persons, legal persons, and public-legal entities is a result of centuries-long evolution of the theory of state and law.

The second approach within the concept of gradient legal personality is the legal notion of "electronic agents", primarily associated with the widespread use of AI systems as means of communication between counteragents and as tools for online commerce. This approach can be called a compromise, as it acknowledges the impossibility of endowing AI systems with the status of full-fledged subjects of law, while at the same time establishing certain (socially significant) rights and obligations for artificial intelligence. In other words, the concept of "electronic agents" legalizes the quasi-subjectivity of artificial intelligence. The term "quasi-subject of law" should be understood as a certain legal phenomenon, in which individual elements of legal personality are recognized on an official or doctrinal level, while establishing the status of a full-fledged subject of law is impossible (Channov, 2022).

Supporters of this approach highlight the functional features of AI systems that allow them to act as both a passive tool and an active participant in legal relationships, potentially capable of independently creating legally relevant contracts for the system owner. That is why AI systems can be conditionally viewed in the framework of agency relationships (Morkhat, 2018b). When creating (or registering) an AI system, the initiator of the "electronic agent" activity concludes a factual unilateral agency agreement with it, as a result of which the "electronic agent" is endowed with a number of authorities, exercising which it can perform legal actions that are significant for the principal.

[24] On licensing certain types of activity: Federal Law of May 4, 2011 No. 99-FZ (ed. of 29.12.2022). (2011). *Collection of legislation of the Russian Federation, 2011*. No. 19. Article 2716.

Provisions on agency relationships with AI systems were first mentioned in Russia in connection with the development of the draft law "On amending the Civil Code of the Russian Federation in terms of improving the legal regulation of relations in the field of robotics", prepared in 2016. This project became known informally as the Grishin Law after D. Grishin, the founder of an investment fund Grishin Robotics and the Chairman of the Board of Directors of Mail.Ru Group. By implication of the law draft, an "electronic agent" should be recognized as a robot which by its owner decision and due to its constructive features is intended for participation in civil transactions. A robot-agent has separate property and is liable for its obligations, can acquire and exercise civil rights and bear civil responsibilities on its own behalf. In cases provided by law, a robot-agent may act as a participant in civil proceedings. If this draft law were approved, it would legalize AI systems as participants in legal relationships in Russia.

In the context of "electronic agents", the most problematic issue is whether such entities possess separate property that would allow them to be held accountable for acquired civil law obligations. The authors of the draft law attempted to take into account the functional specifics of different types of artificial intelligence and proposed dividing AI systems[25] into two types:

– AI systems (in the draft law – robots) as a special form of property, for which analogy with animals and other objects of law is potentially possible (AI systems of type 1 – objects of law);

– AI agents as participants in civil legal relations possessing a special legal personality (AI systems of the second type – quasi-subjects of law).

It should be noted that the authors of the 2016 draft law did not mention the possible legal status of virtual systems as another form of artificial intelligence, stating only that "provisions of civil legislation on robots do not apply to software which, although capable of acting, defining their actions and evaluating their consequences without complete control by humans based on the results of processing information received from the external environment, is not part of the information system of an isolated device intended fully or partially for taking autonomous actions"[26]. Currently, the achieved level of development in the field of artificial intelligence allows for the assumption that strong AI can exist in virtual form and control intellectually weaker cyber-physical systems.

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25 The draft law only mentions robots; such incomplete wording was inherent not only to the authors of this draft but also, for example, European authors of the EU Resolution of February 16, 2017 concerning the civil legal norms on robotics (European Parliament Resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics 2015/2013 (INL). Later in EU Resolutions of 2020 this defect was liquidated.

26 Dmitriy Grishin presented a draft regulation of legal status of robots in Russia. (2016, December 17). https://robotrends.ru/pub/1650/dmitriy-grishin-predstavil-proekt-regulirovaniya-pravovogo-statusa-robotov

The approaches to endowing AI systems with elements of legal personality within the framework of the concept discussed in this section can be compared to a constructor that allows for building something new from the existing concepts described in the previous sections of the article, by combining, taking into account the functional characteristics of AI systems and the range of tasks for which a specific AI model is designed to solve. Therefore, it can be considered that the gradient concept has the greatest chance of implementation within the existing law order.

Conclusions

Determining the legal status of artificial intellectual systems is the issues causing increasingly heated discussions among jurists. One may agree with U. Pagallo, one of the researchers most deeply immersed in this problem, that in the years to come there will hardly be found solutions for "all of the hard cases and dilemmas" associated with artificial intelligence; nevertheless, preventing the "polarization of today's debate, methods of legal flexibility and pragmatic experimentation" allow solving even such difficult tasks (Pagallo, 2018).

Having considered the main concepts of endowing AI systems with legal personality that have been formulated up to this point, we should state at least a legal impracticality in granting artificial intelligence the status of a legal subject in the classical understanding of legal theory. Furthermore, as time goes on, there is an even smaller possibility of maintaining the legal regime of the object of law in its current form. In modern technological, economic, social, political, and legal realities it is likely that a combined approach will be needed to determine the legal status of artificial intelligence.

One optimal solution could involve including AI systems in the list of objects of civil rights, but differentiating the legal regulation of artificial intelligence as an object of law and an "electronic agent" as a quasi-subject of law. The line of differentiation should be drawn depending on the functional differences of AI systems, while as an "electronic agent" can be recognized not only a robot but also a virtual intellectual system. An "electronic agent" is endowed with certain rights and can perform some legal obligations, but ultimately, responsibility for its actions should be borne by a human. Recognizing AI systems as "electronic persons" seems premature, at least until the emergence of strong artificial intelligence.

In the future, considering the ongoing transformation of law and the testing of AI systems for machine-readable law and decision-making support in public administration, one cannot exclude the likelihood of a gradual increase of artificial intelligence impact in the sphere of law. This will contribute to the strengthening of artificial intelligence position on its way towards recognition as a legal subject and the complete "overhaul" of legal matters with its participation or even under its guidance, no matter how fantastic it may seem at first glance.

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Authors' contributions

Irina A. Filipova formulated the research idea, goals and objectives; elaborated the methodology; analyzed and summarized literature; interpreted general research results; critically reviewed and edited the manuscript text; formulated the key conclusions, proposals and recommendations; approved the final variant of the article.
Vadim D. Koroteev compiled the manuscript draft and critically reviewed it, adding valuable comments on the intellectual content; participated in scientific design; performed comparative analysis; selected literature; prepared and edited the manuscript text; interpreted the specific research results; finalized the manuscript.

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Будущее искусственного интеллекта: объект или субъект права?

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Ключевые слова

Генеративная модель,
интеллектуальная система,
искусственный интеллект,
квазисубъект права,
киберфизическая система,
право,
правосубъектность,
робот,
цифровые технологии,
электронное лицо

Аннотация

Цель: выявление проблем, связанных с правовым регулированием общественных отношений, в которых используются системы искусственного интеллекта, и рациональное осмысление обсуждаемой правоведами возможности наделения таких систем статусом субъекта права.

Методы: методологической основой исследования являются общенаучные методы анализа и синтеза, аналогии, абстрагирования и классификации. Среди преимущественно применяемых в работе юридических методов – формально-юридический, сравнительно-правовой и системно-структурный, а также методы толкования права и правового моделирования.

Результаты: представлен обзор состояния развития искусственного интеллекта и его внедрения на практике ко времени проведения исследования. Рассмотрено нормативно-правовое регулирование в данной области и разобраны основные из существующих концепций наделения искусственного интеллекта правосубъектностью (индивидуальная, коллективная и градиентная правосубъектность искусственного интеллекта). При этом дана оценка каждого из подходов и сделаны выводы о наиболее предпочтительных вариантах внесения изменений

✉ Контактное лицо

в действующее законодательство, которое перестает соответствовать реалиям. Растущее несоответствие связано с ускоряющимся развитием искусственного интеллекта и его распространением в различных секторах экономики, социальной сферы, а в ближайшей перспективе и в государственном управлении. Все это свидетельствует о повышении риска разрыва правовой материи с изменяющейся социальной реальностью.

Научная новизна: классифицированы научные подходы к наделению искусственного интеллекта правосубъектностью. В рамках каждого из подходов выделены ключевые моменты, использование которых позволит в дальнейшем создавать правовые конструкции на основе комбинирования, уходя от крайностей и соблюдая баланс интересов всех сторон. Оптимальным вариантом определения правового статуса искусственного интеллекта может стать внесение интеллектуальных систем в перечень объектов гражданских прав, но с дифференциацией правового регулирования искусственного интеллекта в качестве объекта права и «электронного агента» как квазисубъекта права. Линия разграничения должна проходить в зависимости от функциональных различий интеллектуальных систем, причем «электронным агентом» может быть признан не только робот, но и виртуальная интеллектуальная система.

Практическая значимость: материалы исследования могут быть применены в работе, связанной с подготовкой предложений по внесению изменений и дополнений в действующее законодательство, а также при разработке учебных курсов и написании учебных пособий по тематике, имеющей отношение к регулированию использования искусственного интеллекта.

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И. А. Филипова осуществляла формулирование идеи, исследовательских целей и задач; разработку методологии; анализ и обобщение литературы; интерпретацию общих результатов исследования; критический пересмотр и редактирование текста рукописи; формулировку ключевых выводов, предложений и рекомендаций; утверждение окончательного варианта статьи.
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