
ИНФОРМАЦИОННОЕ ПРАВО
И ИНФОРМАЦИОННАЯ БЕЗОПАСНОСТЬ

IMPACT OF THE CONCEPT OF “TECHNOSCIENCE”
ON THE GENESIS FEATURES OF THE LEGAL REGULATION
OF ARTIFICIAL INTELLIGENCE AND ROBOTICS TECHNOLOGY

© 2022 A. V. Neznamov

Institute of State and Law of the Russian Academy of Sciences, Moscow

E-mail: alegista@mail.ru

Received 20.05.2021 г.

Abstract. The paper is devoted to studying the legal regulation genesis of innovative AI and RT in law. The research suggests comprehending not only the answer to the question why these technologies can be considered as “disruptive” ones for the legal system, but also why this is happening right now, decades after their appearance. It is concluded that AI and RT are closely related to the concept of “technoscience” since due to them we can talk about interdisciplinarity, mutual strengthening of scientific cognition; capitalization; the growing influence of corporations on science; and the logical consequence is the involvement of technoscience in the state policy orbit. At the same time, technoscience brings social and cultural paradigms of scientific research to a new level as it allows us to raise the question of scientists’ attitude towards the consequences of their inventions in a new way. This, in turn, determines a number of the genesis features of AI and RT in law which are justified in the article.

Key words: artificial intelligence, robot, robotics technology, regulation genesis, legal regulation, technoscience, scientific and technological progress, technology, law.

For citation: *Neznamov, A.V. (2022). Impact of the concept of “technoscience” on the genesis features of the legal regulation of artificial intelligence and robotics technology // Gosudarstvo i pravo=State and Law, No. 3, pp. 108–116.*

The article has been made possible by and published under RFBR grant 18-29-16015 dedicated to the comprehensive study of legal and ethical aspects of the development and use of artificial intelligence systems.

DOI: 10.31857/S102694520019169-6

ВЛИЯНИЕ КОНЦЕПТА ТЕХНОНАУКИ НА ОСОБЕННОСТИ ГЕНЕЗИСА
ПРАВОВОГО РЕГУЛИРОВАНИЯ ТЕХНОЛОГИЙ ИСКУССТВЕННОГО
ИНТЕЛЛЕКТА И РОБОТОТЕХНИКИ

© 2022 г. А. В. Незнамов

Институт государства и права Российской академии наук, г. Москва

E-mail: alegista@mail.ru

Поступила в редакцию 20.05.2021 г.

Аннотация. В работе исследуется генезис правового регулирования инновационных технологий ИИ и РТ в праве. Исследование предполагает осмысление не только ответа на вопрос, почему эти технологии могут рассматриваться как «подрывные» для правовой системы, но и почему это происходит именно сейчас, спустя десятки лет после их появления. Делается вывод о том, что технологии ИИ и РТ тесно связаны с концептом технонауки, так как именно в них можно говорить о междисциплинарности, взаимном усилении научных знаний; капитализации; росте влияния корпораций на науку;

и логичное следствие – о вовлечении технауки в орбиту государственной политики. Одновременно технаука выводит на новый уровень социокультурные парадигмы научных исследований, поскольку позволяет по-новому поставить вопрос об отношениях ученых к последствиям их изобретений. Это, в свою очередь, обуславливает целый ряд особенностей генезиса технологий ИИ и РТ в праве, которые обоснованы в тексте статьи.

Ключевые слова: искусственный интеллект, робот, робототехника, генезис регулирования, правовое регулирование, технаука, научно-технический прогресс, технологии, право.

Цитирование: *Neznamov, A.V. (2022). Impact of the concept of “technoscience” on the genesis features of the legal regulation of artificial intelligence and robotics technology // Gosudarstvo i pravo=State and Law, No. 3, pp. 108–116.*

Статья публикуется в рамках гранта РФФИ 18-29-16015, посвященного комплексному изучению правовых и этических аспектов разработки и использования систем искусственного интеллекта.

In the modern world, there are practically no living environment in which robotics technology and artificial intelligence would not be applied somehow. In some areas they seem new and disruptive (for example, AI systems in healthcare and medical service robots), and in others we no longer notice them (for example, AI systems in our phones or robotic mechanisms in vehicles).

It is objectively impossible to give any comprehensive description of examples of using AI technologies in the modern world, and often the description of specific examples in scientific papers is the key for illustrative nature of the offered empirical material to a greater extent than for the task of a comprehensive study of existing social relations and specific legal problems. In other words, frequently the task of a researcher is to describe convincing facts depicting the development level of new technologies rather than integrating them into the system of scientific research methods in the context of a specific legal issue.

However, it cannot be overlooked that very often descriptions of examples of using AI and RT are not systemic, studied in the case of a specific legal problem, they are given as an illustration. Moreover, this trend is characteristic not only of national legal doctrine¹, but also of international studies.

For example, the paper “Information disorder: Toward an interdisciplinary framework for research and policymaking”² by Claire Wardle and Hossein Derakhshan contains just a few examples of real situations with using AI technologies (in particular, creating fake videos with B. Obama and the influence of bots on the election of the US President in France). The study “Discrimination,

artificial intelligence, and algorithmic decision-making” by Frederik Borgesius³ presents only six illustrative examples correlated to the study conclusions. The research “A study of the implications of advanced digital technologies (including AI systems) for the concept of responsibility within a human rights framework” by Karen Yeung refers only to known incidents with Tesla cars as well as Uber and Cambridge Analytica⁴.

We see a similar approach in studies conducted under the auspices of international bodies.

For example, some Council of Europe documents on the study of the theoretical risks of applying AI contain references to sporadic practical “cases”. Thus, the report “Ready for future challenges – reinforcing the Council of Europe (Report by the Secretary General)”⁵ in the section “Potential risks of AI” gives only one application example in the form of a reference to the well-known scandal about Cambridge Analytica and its influence.

A similar reference to the same example is contained in the Joint Report of the Venice Commission and the Directorate of Information Society and Action against Crime of the Directorate General of Human Rights and Rule of Law (DGI) on Digital Technologies and Elections⁶.

³ See: *Borgesius F.* Discrimination, artificial intelligence, and algorithmic decision-making. URL: <https://rm.coe.int/discrimination-artificial-intelligence-and-algorithmic-decision-making/1680925d73>

⁴ See: *Yeung K.* A study of the implications of advanced digital technologies (including AI systems) for the concept of responsibility within a human rights framework. URL: <https://rm.coe.int/draft-study-of-the-implications-of-advanced-digital-technologies-inclu/16808ef255>

⁵ Ready for future challenges – Reinforcing the Council of Europe (2019). Report by the Secretary General for the Ministerial Session in Helsinki, 16–17 May 2019. P. 32. URL: <https://rm.coe.int/168093af03>

⁶ Joint Report of the Venice Commission and the Directorate of Information Society and Action against Crime of the Directorate General of Human Rights and Rule of Law (DGI) on Digital Technologies and Elections. CDL-AD (2019) 016. URL: [https://www.venice.coe.int/webforms/documents/?pdf=CDL-AD\(2019\)016-e](https://www.venice.coe.int/webforms/documents/?pdf=CDL-AD(2019)016-e)

¹ See: *Somenkov S.A.* Artificial intelligence: from object to subject? // Herald of Kutafin University. 2019. No. 2, *Baranov P.P.* Legal regulation of robotics technology and artificial intelligence in Russia: some approaches to solving the problem // North Caucasian Legal Herald. 2018. No. 1, etc.

² *Wardle C., Derakhshan H.* Information disorder: Toward an interdisciplinary framework for research and policymaking. URL: <https://edoc.coe.int/en/media/7495-information-disorder-toward-an-interdisciplinary-framework-for-research-and-policy-making.html>

In our view all this is a consequence of one of the significant problems of the object we are studying, that is, the fragmentation of empirical material for building legal structures for regulating AI technologies. The empirical base (that is, the existing social relations, primarily the presence of a legal conflict) is often at first glance not quite enough to study all the aspects of the relevant issue or to understand the research paradigm fully. Conclusions and offers, hypotheses, recommendations in some cases are based on singular examples extrapolated to the whole spectrum of applying AI and RT.

Meanwhile, it should be taken into account that neither AI nor RT is fundamentally new technology, at least in the sense that it is often given even at the level of official documents⁷.

In fact, these technologies have been developing and applying since the middle of the 20th century, and by the 21st century they had experienced a number of stages of their development. It is impressive to see by means of the example of AI technologies, in the development of which the whole segments are distinguished, i.e. “winners”, when interest to them fell sharply on the part of society including entrepreneurs and scientists.

Therefore, the study of the legal aspects of AI and RT implies conceptualizing not only the answer to the question of why these technologies can be considered as “disruptive” ones for the legal system, but also why this is happening right now, decades after their appearance.

Regarding the breakthrough nature of AI and RT many arguments are given. According to Ch. Skinner, we are now experiencing the fourth revolution in human history, and a fifth will soon come. The last one will unite artificial intelligence, biotechnology, genome editing, reusable rockets and colonization of other planets; as a result, “a little car will remain inside the person and a little humanity in the car”⁸.

According to K. Schwab the uniqueness of the fourth industrial revolution in addition to the pace of development and wide coverage lies in the growing harmonization and integration of a large number of different research disciplines and discoveries when material

⁷ For example, in the Government Executive Order of the Russian Federation dated 09.06.2020 No. 1523-r “Concerning approval of the Energy Strategy of the Russian Federation for the period until 2035”, when describing breakthrough technologies, unmanned and “connected” transport technologies are given as an example; neural networks, cloud and fog computing, virtual and augmented reality, machine learning. URL: <https://sudact.ru/law/rasporiazhenie-pravitelstva-rf-ot-09062020-n-1523-r>

In approved “Basic directions for the development of information security of the credit and financial sector for the period of 2019–2021” (Legal Reference System “Consultant Plus”) by the Bank of Russia artificial intelligence is designated as an innovative technology along with Big Data, cyber physical systems. URL: https://cbr.ru/Content/Document/File/83253/onrib_2021.pdf

⁸ Skinner K. Digital Man. The fourth revolution in human history that will affect everyone. M., 2019.

innovations arising from the interdependence between different technologies are no longer science fiction⁹. It was K. Schwab who offered to distinguish “megatrends” of modern economics and society connected with each other. At the same time different technologies take advantage of each other on the basis of inventions and development of each of them and disclosure of a wide range of technological drivers of the fourth industrial revolution¹⁰. Among them, for example, unmanned vehicles, 3D printing, advanced RT, new materials, Internet of Everything, biological technologies.

In the Russian Federation the analogue of megatrends is “cross-cutting digital technologies” which are enshrined in the federal project “Digital Technologies”¹¹. Of course, among them there are such as “components of robotics technology and sensorics” as well as “Neurotechnology and artificial intelligence”.

Meanwhile, the certainly cross-cutting, and possibly disruptive nature of AI and RT does not explain the reasons why it is necessary to create and develop legal regulation of robotics technology and artificial intelligence¹², rethink a number of legal structures, and do it right now.

The answer to this question, on the one hand, seems to be out in the open. The legal power pursuing social relations is focused on the rapid growth in the use of AI in all living environments. The cross-cutting nature of AI determines their use in almost any living environment which means that any branch of law will also face AI. However, one cannot fail to notice that this thesis is only partially true as there are other technologies that have penetrated into all living environments (for example, electricity).

Another answer to this question is often in discussions about the legal personality of AI systems. Coming to grips with creating a new subject of law, researchers note the need for radical transformation of legal institutions, including, for example, by means of implementing a new quasi-subject of Civil Law¹³. This situation is definitely challenging but meanwhile here the possible emergence of a new legal subject cannot explain the “disruptive”, breakthrough nature of AI for law. At a minimum, taking into consideration that the concept of legal personality of AI systems or robots has practically not got support by legal scholars (this issue

⁹ See: Schwab K. The Fourth Industrial Revolution: how it will change life and prevent people from becoming rich. M., 2016.

¹⁰ See: *ibid.*

¹¹ URL: <https://data-economy.ru/science>

¹² See: Pisarenko A.P., Ignatenko V.V. To the question of the “in-human” law: trends and prospects // Herald of the Taganrog Institute of Management and Economics. 2018. No. 1. P. 55–58.

¹³ See: Iriskina E.N., Belyakov K.O. Legal aspects of civil liability for causing harm by the actions of a robot as a quasi-subject of civil law relations // Humanitarian Informatics. 2016. No. 10. P. 63–72.

will be shown in a separate chapter of this research). In addition, one cannot disagree with G.A. Gadzhiev who argues that a part of legal reality is always a system of legal ideas that form a legal concept of reality which is a form of scientific awareness of what people call law¹⁴. From the point of view of this “legal reality”, the existence of a fictional (for the real world) legal subject and a legal fiction is not exclusively new.

Another option to answer this question may be the autonomy of AI systems and robots implying their ability to perform actual and legal actions independently, regardless of the will of a legal subject to make legally significant decisions. Although this answer seems quite promising to us as the real legal prerequisites for regulating AI and RT in our opinion are still deep, paradigmatic, and they run far beyond the legal science or science of AI or RT methods. Indeed, the automation of many processes forces us to talk about revising many legal norms and even entire institutions.

These changes are primarily related to the fundamental change in science as a special way of thinking and a highly effective method of studying the life world, according to E. Husserl¹⁵.

In the science development one can distinguish periods when all the components of its foundations were transformed, accompanied by a radical change in the normative research structures as well as the philosophical science foundations; and such periods can be considered as global revolutions that changed the type of scientific rationality¹⁶. At the same time scientific revolutions, as a rule, are accompanied by crises that lead to radical changes in the science foundations, the scientific worldview as well as in the features of its social and cultural genesis which inevitably raises the philosophy of science before the question of the science essence¹⁷. One of such revolutions, according to N.V. Bryanik, is being experienced by us right now when it becomes obvious that the principles of the non-classical worldview are not activated when explaining the phenomenon of self-organization of non-linear, non-equilibrium and open systems¹⁸.

We tend to agree with the statement by S.A. Lebedev that today we are watching out of a sharp change

¹⁴ See: *Gadzhiev G.A.* Is the robot agent a person? (Search for legal forms for regulating the digital economy) // *Russian Law Journal*. 2018. No 1. P. 15–30.

¹⁵ See: *Husserl E.* Crisis of European sciences and transcendental phenomenology: Introduction to Phenomenological Philosophy. St. Petersburg, 2004.

¹⁶ See: *Ladygina I.V.* Philosophical foundations of robotics technology // *Humanitarian Vector*. 2016. Vol. 11. No. 1. P. 28–35.

¹⁷ See: *Bryanik N.V.* E. Husserl on the meaning of science in the scope of modern philosophy and science history // *Vestnik of Northern (Arctic) Federal University*. Series: Humanities and Social Sciences. 2017. No. 4. P. 51–60.

¹⁸ See: *ibid.*

in the problematic orientation of epistemology; unlike traditional epistemology, the modern one is not focused on solving the issue of what science should be, not on building an ideal science model, considering such problems to be “metaphysical”, but on analyzing and describing the structure and methods of real science, its dynamics as well as cultural, historical and philosophical foundations of science and scientific cognition; and the reason is precisely in the success of real science¹⁹. As a result, currently epistemology has been closely intertwined with cognitive science²⁰. The epistemological model was replaced by a postmodern social and cultural crisis, the result of which is the replacement of established moral principles and traditions with new rules and norms of corporate situational morality²¹.

At the same time, according to V.V. Kotlyarova modern science has a rather complex structure, a system of partially interconnected, sometimes partially incompatible elements that have integrative characteristics. Differentiation of sciences is balanced by their integration that determines the mutually beneficial exchange of approaches, scientific methods, concepts and categories; and all this leads not only to the constant emergence of new branches but also to the interdisciplinary synthesis of scientific cognition²². That is why, in modern scientific and methodological discourse the synthesis of natural science and social and humanitarian knowledge becomes important, due not only to the growth of the heuristic potential of moral, aesthetic and religious values in the worldview of modern man, but also to the realization that “positive” science is unable to formulate or solve our life-purpose and value-based problems²³.

In other words, in the last decade we have seen a rapid and dynamic but rather discrete development of technology and science in general that leads to uneven progress in all levels of social existence²⁴. There-with it can be argued that objectively research is always ahead of time, and it designs new technologies in social life; however, previously this process was divided over time, and now it often takes place almost immediately.

¹⁹ See: *Lebedev S.A.* Three epistemological paradigms: classical, non-classical and post-non-classical // *Herald of the Moscow Region State University*. Series: Philosophical Sciences. 2019. No. 2. P. 8–21.

²⁰ See: *Kozhevnikov N.N., Danilova V.S.* Ontologic and epistemological aspects of modern philosophy // *Vestnik of NEFU*. 2012. Vol. 9. No. 4. P. 69–75.

²¹ See: *Vyzhletsov G.P.* Scientific rationality in the era of axiological relativism // *Herald of St. Petersburg University*. Ser. 17. 2015. No. 4. P. 21–26.

²² See: *Kotlyarova V.V.* Modern scientific cognition: paradigm of integration // *Historical, philosophical, political and law sciences, culturology and study of art*. Questions of theory and practice. Tambov, 2015. No. 9 (59): in 2 parts. Part. I. P. 99–102.

²³ See: *ibid.*

²⁴ See: *Zaporozhets A.M.* Legal Aspects of the Innovative Economics of Russia // *Scientific forums*. 2014'2(1). P. 53–77.

The gap between research and implementation has narrowed, and the risk of the proliferation of technologically and naturally advanced, but unapproved technologies has increased²⁵.

The connection of the epistemology of science with technology is noted by E.V. Seredkina pointing out that the analysis of the texts of recent years in the field of philosophy and methodology of science shows a shift in emphasis from traditional epistemological problems of modern natural science to reflections on the essence of technology with specific practical applications²⁶.

Here we come close to the concept of technoscience, which was established in academic circles in the 1980–1990^s of the 20th century in the context of the fact that the modern technological role of science became especially obvious due to the formation of a new paradigm of science under conditions of interdisciplinarity and transdisciplinarity²⁷.

Technoscience is defined by researchers as “the face of modern science”, the state of modern cognitive knowledge that is realized in the process of applied research; technoscience, the latest technologies undoubtedly have a great influence on the formation of civil society and the development of everyday life of consumer society²⁸.

According to the researchers who are investigating this phenomenon, the term “technoscience” was first formulated by the French philosopher Gaston Bachelard in 1953, and popularized by the Belgian philosopher Gilbert Hottois who tried to fix the essential features of modern science which were different from the ancient ideal of exclusively theoretical knowledge²⁹. Technoscience is positioned as a new stage in the development of technical knowledge which is characterized by the following features described by I.A. Chernyshov: disappearance of the line between fundamental and applied research; problematic research orientation; science transdisciplinary nature; nature plasticity; a global international approach to technology production; change in the science organization, transition of its advanced fields to commercial corporations; transforming

knowledge into publicity; formation of new cognitive data sharing space³⁰.

Threat technoscience does not fit into the traditional schematization of sciences (natural, technical, social and humanities) being a new form of science organization that integrates many aspects of both natural science and technology and humanitarian knowledge³¹.

According to scientists the key trend in the science development in modern society is that scientific cognition loses its privileged mode of existence in society, and science itself as an institution is gradually being deprived of the monopoly right to produce common and especially valuable (in the social and cultural sense) knowledge and begins to transform into something new that we continue to call “science” only in view of institutional and cultural reasons; this process is reflected in the concepts of “technoscience”³².

In this sense technoscience today belongs to the post-classical stage of the science development, that is, it involves taking into account social factors and ethical orientations³³. Meanwhile, it is even argued that the concept of technoscience is destructive for basic science and for the ethos of scientific community formed by an enlightening tradition and implying a universal moral rather than utilitarian value of knowledge and education³⁴.

Why is the concept of technoscience so important in the context of AI and RT?

As it is shown above technoscience researchers associate it with a modern scientific and technical revolution characterized by research programs that aim to expand and gain new knowledge in the fields of nanotechnology, biomedicine, genetic engineering, cybernetics, and computer science³⁵. According to the researchers who are investigating this phenomenon developments in the field of AI, in turn, lead to a solution to the problem of the harmonious existence in the future of natural (human) and artificial (machine) mind.

As N.A. Berdyaev wrote back in the 30^s of the 20th century the dominance of technology and machine opens a new stage of reality which is not provided for by the

²⁵ See: *Gorokhov V.G.* Technoscience as a new stage in the development of modern science and technology // Higher education in Russia. 2014. No. 11. P. 37–47.

²⁶ See: *Seredkina E.V.* Ethical and epistemological aspects of technoscientific knowledge in the context of paradigmatic shift from the *homo faber* into the *homo creator* // Humanitarian vector. Series: Philosophy, Cultural Studies. 2016. No. 1. P. 41–45.

²⁷ See: *Bakanova E.A.* Transformation of science in the information society // Philosophy and culture. 2017. No. 4. P. 80–88.

²⁸ See: *Moiseeva A.P.* On the question of the essence of the study of technoscience // Modern problems of science and education. 2015. No. 1 (Part I). URL: https://elibrary.ru/download/elibrary_25325522_67912728.pdf

²⁹ See: *Moiseeva A.P., Bakanova E.A.* Phenomenon of technoscience // Bulletin of Science of Siberia. 2017. No. 2 (25). P. 45–58.

³⁰ See: *Chernyshov I.A.* Technoscientific model of modern technical knowledge // Society: philosophy, history, culture. 2018. No. 2. URL: <https://cyberleninka.ru/article/n/tehnonauchnaya-model-sovremennogo-tehnicheskogo-znaniya/viewer>

³¹ See: *Moiseeva A.P., Bakanova E.A.* Op. cit. P. 45–58.

³² *Koshovets O.B., Frolov I.E.* Brave new world: On science transformation into technoscience // Epistemology & Philosophy of Science. 2020. Vol. 51. No. 1. P. 20–30.

³³ See: *Gorokhov V.G.* Op. cit. P. 37–47.

³⁴ See: *Varkhotov T.A.* Technoscience – science without scientists? // Epistemology & philosophy of science. 2020. Vol. 51. No. 1. P. 32–36.

³⁵ See: *Osipov V.E., Vasenkin A.V.* System of social and ethical bases of technoscience // Modern technologies. System analysis. Modeling. 2012. No. 4 (36). P. 255–259.

classification of sciences, reality is not at all identical with the reality of mechanical, physical and chemical. This new reality is visible only from history, from civilization, and not from nature³⁶. We can add to this that technology always presents social constructs, whether this fact is realized or not (and there can be no technologies at all out of society)³⁷.

In our opinion, it is not a coincidence that the 20th century was the birth of the concept of technoscience and at the same time the birth of AI and RT.

It is AI and RT that, in our view, are the quintessence of technoscience (although in some sources this postulate is put in the context of nanotechnology³⁸). Due to them, we can talk about interdisciplinarity, mutual strengthening of scientific cognition; capitalization; the growing influence of corporations on science; and the logical consequence is the involvement of technoscience in the state policy orbit. Simultaneously technoscience brings social and cultural paradigms of scientific research to a new level as it allows us to raise the question of the relationship of scientists to the consequences of their inventions in a new way.

And the fact that discussions of the AI and RT problems, as a rule, occur at this interface, i.e. at the transition from machine to human and vice versa, is a logical conclusion to this design. The science of AI methods looks like the quintessence of technoscience in all respects.

From our point of view that is why it is the AI concept and related AI technologies, and not other technological trends, that have such an important influence on the legal science which is most involved in the epistemological transformation of science being part of science in general.

As K. Schwab rightly points out, governments will have to change their approach: in the “old world” decision makers had enough time to study a specific issue, and then prepare the necessary reaction or appropriate regulatory framework³⁹. The whole process, as a rule, was linear and mechanical and was built in strict accordance with the hierarchical approach (“top down”) but for a number of reasons this is no longer possible. With the Fourth Industrial Revolution accelerating the pace

of change, the structures creating the regulations faced challenges of unprecedented scale⁴⁰.

From this point of view, one cannot disagree with T. Ya. Khabrieva and N.N. Chernogor that in the new reality law becomes not only a means, an instrument for digitalizing the economy, governance and other segments of social existence but also the targeted object of “digitalization” as a result of which it undergoes changes in its form, content, system, structure, mechanism of action and demonstrates the tendency to increase emerging transformations⁴¹.

However, “the development impact of digital technologies on the legal system, as well as the ways and directions of the law transformation upon regulating social relations related to the use of digital technologies are really underexplored by legal science”⁴².

Nonetheless, according to our reckoning it is premature to talk about essential restructuring of the legal system or especially about rethinking the role of law in society.

It must be recognized that law according to S.S. Alekseev is always a living mechanism⁴³, guide and vehicle of high reasonable principles⁴⁴. From this point of view, law will change a priori but will be the key social regulator of social relations. The legal system transformation in the scope of new technologies and taking into account their development in line with technoscience is definitely a great challenge but a challenge which can be solved in our opinion.

* * *

As a summary, the arguments discussed above lead us to the theory of the genesis peculiarities of AI and RT in law. They, to our opinion, are as follows.

The development of technologies including (and somewhere even first of all) AI and RT is carried out due to the continuous synthesis of scientific cognition which is enriched exponentially under conditions of the modern information society. Concurrent with it the development of scientific research in compliance with technoscience provides almost simultaneous transformation of technological achievements into practice.

Thanks to the peculiarities of the technoscience development AI technologies began to be implemented everywhere in all life spheres very quickly.

³⁶ See: *Berdyayev N.A.* Man and Machine (the problem of sociology and metaphysics of technology) // Journal “The Way”. No. 38 (for 05.1933). URL: <http://www.odinblago.ru/path/38/1>

³⁷ See: *Gorokhov V.G.* Technology and Science // Epistemology & Philosophy of Science. 2012. Vol. XXXIV. No. 4. P. 5–17.

³⁸ See: *Beilin M.V.* Nanotechnoscience: between the theoretical and practical purposes of scientific thinking // Scientific Herald of BelSU. Series: Philosophy. Sociology. Law. 2016. Is. 38. No. 24 (245). P. 145–148.

³⁹ See: *Schwab K.* Op. cit.

⁴⁰ See: *ibid.*

⁴¹ See: *Khabrieva T. Ya., Chernogor N.N.* The Law in the conditions of digital reality // Russian Law Journal. 2018. No 1. P. 85–102.

⁴² *Nosov S.I.* Law and informatization // Lawyer. 2019. No. 4. URL: <https://urfac.ru/?p=2369>

⁴³ See: *Alekseev S.S.* Collected works issued: in 10 vols. M., 2010. Vol. 6: Ascent to Law.

⁴⁴ See: *ibid.*

Finally, the highest potential for commercialization of new technologies forces relevant participants in public relations to produce and implement scientific developments even faster. All this leads to incredible growth rate of public relations in connection with the use of new technologies.

Besides, social relations in connection with the use of AI and RT are often mediated not by the achievements of scientific and technological progress but by the whole of people's concepts of them. Thus, when there is no "smart robot" or "strong AI", people already have formed concepts of them including ones from the point of view of their regulation.

This social and cultural factor characterizes the huge influence of culture, primarily the mass one, on the development of technology and on its regulation. It is in the last few decades that a significant number of publications, books and, of course, films dedicated to AI have been released.

The law following public relations and being a rather inert regulatory tool can no longer fundamentally act as an effective mechanism for influencing public relations in this part.

On the one hand, they appear and change too quickly; and on the other hand, their reality is often difficult to distinguish from stereotypes (otherwise, regulators of all the countries over the world would have long been forced to pass laws obliging any robots, including robot vacuum cleaners, to comply with the three laws of robotics technology by A.A. Asimov).

REFERENCES

1. *Alekseev S.S.* Collected works issued: in 10 vols. M., 2010. Vol. 6: Ascent to Law (in Russ.).
2. *Bakanova E.A.* Transformation of science in the information society // *Philosophy and culture*. 2017. No. 4. P. 80–88 (in Russ.).
3. *Baranov P.P.* Legal regulation of robotics technology and artificial intelligence in Russia: some approaches to solving the problem // *North Caucasian Legal Herald*. 2018. No. 1 (in Russ.).
4. *Beilin M.V.* Nanotechnoscience: between the theoretical and practical purposes of scientific thinking // *Scientific Herald of BelSU. Series: Philosophy. Sociology. Law*. 2016. Is. 38. No. 24 (245). P. 145–148 (in Russ.).
5. *Berdyayev N.A.* Man and Machine (the problem of sociology and metaphysics of technology) // *Journal "The Way"*. No. 38 (for 05.1933). URL: <http://www.odinblago.ru/path/38/1> (in Russ.).
6. *Bryanik N.V.* E. Husserl on the meaning of science in the scope of modern philosophy and science history // *Vestnik of Northern (Arctic) Federal University. Series: Humanities and Social Sciences*. 2017. No. 4. P. 51–60 (in Russ.).
7. *Chernyshov I.A.* Technoscientific model of modern technical knowledge // *Society: philosophy, history, culture*. 2018. No. 2. URL: <https://cyberleninka.ru/article/n/tehnonauch-naya-model-sovremennogo-tehnicheskogo-znaniya/viewer> (in Russ.).
8. *Gadzhiev G.A.* Is the robot agent a person? (Search for legal forms for regulating the digital economy) // *Russian Law Journal*. 2018. No 1. P. 15–30 (in Russ.).
9. *Gorokhov V.G.* Technology and Science // *Epistemology & Philosophy of Science*. 2012. Vol. XXXIV. No. 4. P. 5–17 (in Russ.).
10. *Gorokhov V.G.* Technoscience as a new stage in the development of modern science and technology // *Higher education in Russia*. 2014. No. 11. P. 37–47 (in Russ.).
11. *Husserl E.* Crisis of European sciences and transcendental phenomenology: Introduction to Phenomenological Philosophy. St. Petersburg, 2004 (in Russ.).
12. *Iriskina E.N., Belyakov K.O.* Legal aspects of civil liability for causing harm by the actions of a robot as a quasi-subject of civil law relations // *Humanitarian Informatics*. 2016. No. 10. P. 63–72 (in Russ.).
13. *Khabrieva T. Ya., Chernogor N.N.* The Law in the conditions of digital reality // *Russian Law Journal*. 2018. No 1. P. 85–102 (in Russ.).
14. *Koshovets O.B., Frolov I.E.* Brave new world: On science transformation into technoscience // *Epistemology & Philosophy of Science*. 2020. Vol. 51. No. 1. P. 20–30 (in Russ.).
15. *Kotlyarova V.V.* Modern scientific cognition: paradigm of integration // *Historical, philosophical, political and law sciences, culturology and study of art. Questions of theory and practice*. Tambov, 2015. No. 9 (59): in 2 parts. Part. I. P. 99–102 (in Russ.).
16. *Kozhevnikov N.N., Danilova V.S.* Ontologic and epistemological aspects of modern philosophy // *Vestnik of NEFU*. 2012. Vol. 9. No. 4. P. 69–75 (in Russ.).
17. *Ladygina I.V.* Philosophical foundations of robotics technology // *Humanitarian Vector*. 2016. Vol. 11. No. 1. P. 28–35 (in Russ.).
18. *Lebedev S.A.* Three epistemological paradigms: classical, non-classical and post-non-classical // *Herald of the Moscow Region State University. Series: Philosophical Sciences*. 2019. No. 2. P. 8–21 (in Russ.).
19. *Moiseeva A.P.* On the question of the essence of the study of technoscience // *Modern problems of science and education*. 2015. No. 1 (Part I). URL: https://elibrary.ru/download/elibrary_25325522_67912728.pdf (in Russ.).
20. *Moiseeva A.P., Bakanova E.A.* Phenomenon of technoscience // *Bulletin of Science of Siberia*. 2017. No. 2 (25). P. 45–58 (in Russ.).
21. *Nosov S.I.* Law and informatization // *Lawyer*. 2019. No. 4. URL: <https://urfac.ru/?p=2369> (in Russ.).
22. *Osipov V.E., Vasenkin A.V.* System of social and ethical bases of technoscience // *Modern technologies. System analysis. Modeling*. 2012. No. 4 (36). P. 255–259 (in Russ.).
23. *Pisarenko A.P., Ignatenko V.V.* To the question of the "in-human" law: trends and prospects // *Herald of the Taganrog Institute of Management and Economics*. 2018. No. 1. P. 55–58 (in Russ.).
24. *Schwab K.* The Fourth Industrial Revolution: how it will change life and prevent people from becoming rich. M., 2016 (in Russ.).

25. *Seredkina E.V.* Ethical and epistemological aspects of technoscientific knowledge in the context of paradigmatic shift from the *homo faber* into the *homo creator* // Humanitarian vector. Series: Philosophy, Cultural Studies. 2016. No. 1. P. 41–45 (in Russ.).
26. *Skinner K.* Digital Man. The fourth revolution in human history that will affect everyone. M., 2019 (in Russ.).
27. *Somenkov S.A.* Artificial intelligence: from object to subject? // Herald of Kutafin University. 2019. No. 2 (in Russ.).
28. *Varkhotov T.A.* Technoscience – science without scientists? // Epistemology & philosophy of science. 2020. Vol. 51. No. 1. P. 32–36 (in Russ.).
29. *Vyzhletsov G.P.* Scientific rationality in the era of axiological relativism // Herald of St. Petersburg University. Ser. 17. 2015. No. 4. P. 21–26 (in Russ.).
30. *Zaporozhets A.M.* Legal Aspects of the Innovative Economics of Russia // Scientific forums. 2014’2(1). P. 53–77 (in Russ.).
31. *Borgesius F.* Discrimination, artificial intelligence, and algorithmic decision-making. URL: <https://rm.coe.int/discrimination-artificial-intelligence-and-algorithmic-decision-making/1680925d73>
32. *Wardle C., Derakhshan H.* Information disorder: Toward an interdisciplinary framework for research and policy making. URL: <https://edoc.coe.int/en/media/7495-information-disorder-toward-an-interdisciplinary-framework-for-research-and-policy-making.html>
33. *Yeung K.* A study of the implications of advanced digital technologies (including AI systems) for the concept of responsibility within a human rights framework. URL: <https://rm.coe.int/draft-study-of-the-implications-of-advanced-digital-technologies-inclu/16808ef255>
8. *Выжлецов Г.П.* Научная рациональность в эпоху аксиологического релятивизма // Вестник СПбГУ. Сер. 17. 2015. Вып. 4. С. 21–26.
9. *Гаджиев Г.А.* Является ли робот-агент лицом? (Поиск правовых форм для регулирования цифровой экономики) // Журнал рос. права. 2018. № 1. С. 15–30.
10. *Горохов В.Г.* Технология и наука // Эпистемология и философия науки. 2012. Т. XXXIV. № 4. С. 5–17.
11. *Горохов В.Г.* Технонаука – новый этап в развитии современной науки и техники // Высшее образование в России. 2014. № 11. С. 37–47.
12. *Гуссерль Э.* Кризис европейских наук и трансцендентальная феноменология: введение в феноменологическую философию. СПб., 2004. С. 5–398.
13. *Запорожец А.М.* Правовые аспекты инновационной экономики России // Научные форумы. 2014’2(1). С. 53–77.
14. *Ирискина Е.Н., Беляков К.О.* Правовые аспекты гражданско-правовой ответственности за причинение вреда действиями робота как квазисубъекта гражданско-правовых отношений // Гуманитарная информатика. 2016. Вып. 10. С. 63–72.
15. *Кожевников Н.Н., Данилова В.С.* Онтологические и эпистемологические аспекты современной философии // Вестник СВФУ. 2012. Т. 9. № 4. С. 69–75.
16. *Котлярова В.В.* Современное научное познание: парадигма интеграции // Исторические, философские, политические и юридические науки, культурология и искусствоведение. Вопросы теории и практики. Тамбов, 2015. № 9 (59): в 2 ч. Ч. 1. С. 99–102.
17. *Кошовец О.Б., Фролов И.Э.* «Прекрасный новый мир»: о трансформации науки в технонауку // Epistemology & Philosophy of Science. 2020. Т. 51. № 1. С. 20–30.
18. *Ладыгина И.В.* Философские основания робототехники // Гуманитарный вектор. 2016. Т. 11. № 1. С. 28–35.
19. *Лебедев С.А.* Три эпистемологических парадигмы: классическая, неклассическая и постнеклассическая // Вестник МГОУ. Сер.: Философские науки. 2019. № 2. С. 8–21.
20. *Моисеева А.П.* К вопросу об исследовании сущности технонауки // Современные проблемы науки и образования. 2015. № 1 (часть 1). URL: https://elibrary.ru/download/elibrary_25325522_67912728.pdf
21. *Моисеева А.П., Баканова Е.А.* Феномен технонауки // Вестник науки Сибири. 2017. № 2 (25). С. 45–58.
22. *Носов С.И.* Право и информатизация // Юрист. 2019. № 4. URL: <https://urfac.ru/?p=2369>
23. *Осипов В.Е., Васенкин А.В.* Система социально-этических принципов технонауки // Современные технологии. Системный анализ. Моделирование. 2012. № 4 (36). С. 255–259.
24. *Писаренко А.П., Игнатенко В.В.* К вопросу о «нечеловеческом» законе: тенденции и перспективы // Вестник Таганрогского института управления и экономики. 2018. № 1. С. 55–58.
25. *Скиннер К.* Человек цифровой. Четвертая революция в истории человечества, которая затронет каждого. М., 2019.

СПИСОК ЛИТЕРАТУРЫ

1. *Алексеев С.С.* Собр. соч.: в 10 т. М., 2010. Т. 6: Восхождение к праву.
2. *Баканова Е.А.* Трансформация науки в информационном социуме // Философия и культура. 2017. № 4. С. 80–88.
3. *Баранов П.П.* Правовое регулирование робототехники и искусственного интеллекта в России: некоторые подходы к решению проблемы // Северо-Кавказский юрид. вестник. 2018. № 1. С. 39–45.
4. *Бейлин М.В.* Нанотехнонаука: между теоретическими и прагматическими целями научного мышления // Научные ведомости БелГУ. Сер.: Философия. Социология. Право. 2016. Вып. 38. № 24 (245). С. 145–148.
5. *Бердяев Н.А.* Человек и машина (проблема социологии и метафизики техники) // Журнал «Путь». № 38 (за 05.1933). URL: <http://www.odinblago.ru/path/38/1>
6. *Брянник Н.В.* Э. Гуссерль о смысле науки в контексте современной философии и истории науки // Вестник Северного (Арктического) федерального ун-та. Сер.: Гуманитарные и социальные науки. 2017. № 4. С. 51–60.
7. *Вархотов Т.А.* Технонаука – наука без ученых? // Эпистемология и философия науки. 2020. Т. 51. № 1. С. 32–36.

26. Соменков С.А. Искусственный интеллект: от объекта к субъекту? // Вестник Университета им. О.Е. Кутафина. 2019. № 2. С. 75–85.
27. Середкина Е.В. Этические и эпистемологические аспекты технонаучного знания в контексте парадигмального сдвига от *homo faber* к *homo creator* // Гуманитарный вектор. Сер.: Философия, культурология. 2016. № 1. С. 41–45.
28. Хабриева Т.Я., Черногор Н.Н. Право в условиях цифровой реальности // Журнал рос. права. 2018. № 1. С. 85–102.
29. Чернышов И.А. Технонаучная модель современного технического знания // Общество: философия, история, культура. 2018. № 2. URL: <https://cyberleninka.ru/article/n/tehnonauchnaya-model-sovremennogo-tehnicheskogo-znaniya/viewer>
30. Шваб К. Четвертая промышленная революция: как она изменит жизнь и помешает людям богатеть. М., 2016.
31. *Borgesius F.* Discrimination, artificial intelligence, and algorithmic decision-making. URL: <https://rm.coe.int/discrimination-artificial-intelligence-and-algorithmic-decision-making/1680925d73>
32. *Wardle C., Derakhshan H.* Information disorder: Toward an interdisciplinary framework for research and policy making. URL: <https://edoc.coe.int/en/media/7495-information-disorder-toward-an-interdisciplinary-framework-for-research-and-policy-making.html>
33. *Yeung K.* A study of the implications of advanced digital technologies (including AI systems) for the concept of responsibility within a human rights framework. URL: <https://rm.coe.int/draft-study-of-the-implications-of-advanced-digital-technologies-inclu/16808ef255>

Authors' information

NEZNAMOV Andrey V. —
PhD in Law, Managing Director
of the AI Regulation Center of PJSC
Sberbank, Founder of the Research Center
“Robopravo”, senior researcher at the Institute of
State and Law of the Russian Academy of Sciences;
10 Znamenka str., 119019 Moscow, Russia

Сведения об авторе

НЕЗНАМОВ Андрей Владимирович —
кандидат юридических наук,
управляющий директор
Центра регулирования ИИ ПАО «Сбербанк»,
основатель Исследовательского центра
«Робоправо», старший научный сотрудник
Института государства и права Российской
академии наук; 119019 г. Москва,
ул. Знаменка, д. 10
ORCID: 0000-0000-2880-7394