

# Human Rights and Freedoms in the Science and Technology Field: Systemic Relations And Implementation Aspects

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**Abstract**—The relevance of the legal regulation of human rights and freedoms in the science and technology field lies in their important role in the progress of society and the state. Of particular relevance are existing problems of the implementation of fundamental rights and freedoms in the science and technology field, with the need to identify their interconnections to improve legal regulation. The reliability of the results is ensured by the use of the dialectical method of research. The systemic method, as well as the methods of analysis and synthesis, was used to determine the relationships of rights and freedoms, to identify their structure. The legal content of rights and freedoms was determined by the formal legal method. Based on the comparative legal method, the author carried out a comparative analysis of legal regulation in different states. The paper provides a proof that human rights and freedoms exercised in the science and technology field have systemic relationships, constitute a legal basis for its formation and functioning. The author substantiates the fact that the scientific and technical creative freedom is a fundamental legal regulator for social relations in the science and technology field and is systemically important for it.

**Keywords:** *human rights, freedom of scientific creative activities, law and science, legal regulation of science and technology, science and technology field*

## I. INTRODUCTION

The legal systems of modern democracies are based on the postulate that a person recognizes his rights and freedoms as the highest values of society. Such an approach is predetermined by the historical development of society and, of course, corresponds to the norms of law originating from the nature of human existence. Moreover, the main role of the state is to provide the necessary conditions under which the maximum degree of freedom of each individual is achieved.

The desire for self-expression, in particular, by creating a new or improving a previously created unique result is an integral property of human consciousness inherent in everyone from the moment of birth. Self-expression should be considered as a natural state of a person without which the complete socialization of a person is impossible. The process of realizing this aspiration, which is the basis for creating new cultural or material values, is called creative activities [1].

The main objectives of the study are to identify human rights and freedoms exercised in the science and technology

field, to analyze their content and relationships for improving legal regulation in general, and maximize the enjoyment of rights and freedoms in particular.

## II. METHODS

The study was based on the dialectic method which allowed us to consider the phenomena in their development and the variety of relationships. Following it, general scientific methods were applied, viz. analysis, which was used to examine individual rights and freedoms differing in their nature; synthesis, its application helped to show the common character and the relationship of rights and freedoms as regulators; a systematic approach that allowed to consider rights and freedoms as a system of interrelated elements. A comparative analysis of the issues of legal systems of various states is carried out based on the comparative-legal method. The identification of the objective content of human rights and freedoms, the establishment of their legal nature and definition of external manifestation was carried out based on the formal-legal method. A scientifically based integrative theory of law comprehension was used as a methodological basis for the study.

## III. RESULTS AND DISCUSSION

The process of scientific and technical creative activities is an intellectual, spiritual activity that is impossible without freedom. The freedom of scientific and technical creative activities is proclaimed in various international and domestic legal acts, but its content is not developed in them, there is no legal definition.

Freedom in question is a complex phenomenon related to the inner world of a creative individual, as well as relationships revealing the ratio of creative activity and the environment. The identification of this structure of freedom of scientific and technical creative activities consisting of internal and external aspects is of significant methodological importance for the analysis of the legal regulation of scientific and technological activity.

For a creative person, the freedom of creative activities is associated with inner spiritual freedom and the possibilities of personal choice. Regarding internal aspects, the freedom of scientific and technical creative activities implies an independent determination of the object and the subject of scientific and technological activity by an individual, as well as methods for its implementation. The internal value system

of the individual is of particular importance in scientific and technical creative activities because creative freedom directly depends on individual values determining the creative process, for example, whether a researcher intends to find out the truth or if he/she is aimed at confirming the prevailing ideology [2; 3; 4]. Obviously, the freedom of creative activities allows the legal subject to act in accordance with his/her internal convictions, which may differ from generally accepted requirements including those legally determined. However, if the subject claims a public assessment, in particular, a state assessment of his activity, he/she must correlate his/her behavior with a generally accepted model of behavior.

The above provisions confirm the prevailing opinion that the law has objective limits in the regulatory impact on public relations. Obviously, the law is the most effective social regulator, but in the spiritual sphere, in particular, in the regulation of creative activity, its significance is limited. In this regard, the impact on scientific and technical creative activities must be carried out by the combination of social norms, including moral, ethical, religious ones, etc. [5]. Only this approach will allow social regulation to cover the whole diversity of social relations in the science and technology field and, accordingly, direct their development in the right direction.

The law influences mostly those aspects of the freedom of scientific and technical creative activities that reveal the relations of creative activity and the external environment. First of all, it should be noted that considered freedom is an integral part of the legal status of the subject of creative activities. In this regard, the fact of performing creative activities on a professional basis is of crucial significance, including those implemented according to a civil law contract, or on a non-professional basis, i.e. to satisfy one's interests. An employer (an ordering customer) has the right to indicate a specific subject of research to the employee engaged in the scientific and technological activity, he can also determine the methods that should be applied in this creative activity, thereby narrowing the freedom of creative activities to more stringent bounds. In the case of an unprofessional subject, the degree of freedom of creative activity will be higher. This subject determines the conditions essential for his creative work based on internal convictions and goals. However, in this case, he will not have an official status of a subject of science and technology field according to the legislation of some states, in particular, Russia.

The result of scientific and technological activity should be related to the external aspects of creative freedom. It is the result that embodies the outcome of the realization of creative freedom and it is an external expression, a means of its embodiment. The content of the scientific and technological result allows not only to determine the quality of the implementation of creative freedom depending on the competence of the author and the depth of penetration into the truth but also the degree of its implementation making it possible to judge the values of the society as external conditions of creative activities. It is also important that the state provides legal protection to this result, which, on the one hand, builds the author's confidence in the inviolability of the result as an act of self-expression from the unauthorized use and creates conditions for further creative

activities, and on the other hand, it promotes the effective development of public relations and stability in general.

The freedom of scientific and technical creative activities contributes to the progress of society. However, the effectiveness of this freedom depends on the whole complex of human rights and freedoms exercised in the science and technology field, based on generally accepted criteria and individual attitudes [6]. For example, the freedom of scientific and technical creative activities allows the researcher to go beyond the generally accepted framework, in particular, to draw a scientific conclusion that does not correlate with general ideas about reality. However, the value of this creative result will decrease significantly if the opportunity to inform about it expressing one's opinion is not provided. Thus, the process of scientific and technical creative activities, as well as the proclamation of its results creates the prerequisites for the implementation of freedom of thought and speech.

Following international legal acts, freedom of thought and speech provides the opportunity to express one's opinion, as well as to seek, receive and disseminate all kinds of information and ideas, regardless of state borders, by any means of their choice [7]. In this regard, we consider it necessary to note that the legislation of some states reveals the freedom of creative activities through freedom of speech. For example, the US Constitution does not explicitly proclaim the freedom of scientific and technical creative activities. Its content is disclosed through the first amendment to the Constitution, which establishes the inadmissibility of Congress passing the laws restricting freedom of speech [8]. In other words, US government bodies, including the US Supreme Court, recognize the freedom of creative activities through an extended interpretation of freedom of speech [9]. The Russian Constitution clarifies the content of this freedom, additionally providing the power to transmit and produce information [10].

In the modern post-industrial society, the importance of information for the economic development of states can not be overestimated. The free movement of information is not only a necessary condition for the implementation of freedom of scientific and technical creative activities but also a factor contributing to the development of social relations in general. The openness of information resources is an important criterion for the effectiveness of the rule-of-law state. In this regard, the practice of the European Court of Human Rights is indicative. So, in *Lingens v. Austria* (1986), it was noted that "... freedom of expression, as secured in paragraph 1 of Article 10 (art. 10-1), constitutes one of the essential foundations of a democratic society and one of the basic conditions for its progress and for each individual's self-fulfilment". It was also said that "it is applicable not only to "information" or "ideas" that are favourably received or regarded as inoffensive or as a matter of indifference but also to those that offend, shock or disturb. Such are the demands of that pluralism, tolerance, and broadmindedness without which there is no democratic society." [11]. Similar positions are expressed in *Oberschlick v. Austria* (1991), *Dyundin v. Russia* (2003), etc. [12; 13; 14].

The freedom of scientific and technical creative activities provides the conditions for the enforcement of the right to freely participate in scientific and technological progress and enjoy its benefits. This right proclaimed in Art. 27 of the

Universal Declaration of Human Rights of 1948, was further enshrined in Art. 15 of the International Covenant on Economic, Social and Cultural Rights of 1966. The essence of this law is manifested in the fact that everyone is given the opportunity to feel like a full member of society: on the one hand, it is an opportunity to join the world of creative activities and contribute to the scientific and technological progress of society, on the other hand, to use the part of cultural goods that are created as a result of scientific and technological activity. In this regard, states must create such conditions under which the achievements of science and technology will be freely created and disseminated. The enforcement of this right is impossible without the freedom of scientific and technical creative activities, therefore, “states undertake to respect the freedom necessary for scientific research and creative activity” [15]. In the society of globalization and internationalization, the enforcement of the right to participate in scientific and technological progress and to use its benefits should provide the possibility of ensuring international access to the results of creative activities.

The results of scientific and technical creative activities are a qualitative basis for the enforcement of the right to education and the freedom of teaching. Obviously, the right to education is one of the fundamental human rights, and in this regard, the state is obliged not only to provide conditions for the enforcement of this right but also to ensure the quality of educational activities. The quality of education directly depends on advances in science, engineering, and technology being included in educational programs. In other words, we are talking about training specialists with the level of knowledge that meets current requirements. Ultimately, quality education is the basis for the competitiveness of the entire state and society as a whole.

The freedom of scientific and technical creative activities determines the implementation of those legal norms in the field of education which establish that education should be aimed at the full development of the human personality and consciousness of the dignity, and should also strengthen the respect for human rights and fundamental freedoms and should enable everyone to be useful participants in a free society [15]. It is important to note that the freedom of scientific and technical creative activities in educational relations promotes self-reproduction and creates the conditions for its further implementation. Training and internship of scientists confirm the above-mentioned.

The interrelation of freedom of scientific and technical creative activities and freedom of teaching (some researchers also refer it to creative activity) is apparent [16]. The freedom of teaching or academic freedom provides the choice of the content of the discipline and methods of teaching by a professor within the framework of state educational standards. In the absence of freedom of scientific and technical creative activities, the freedom of teaching becomes illusory, because on the one hand, a professor cannot develop and enrich his/her knowledge by introducing the results of creative activity, and on the other hand, he/she is not able to ensure the quality of his work due to the lack of information about objective phenomena contained in the results of creative activity.

The freedom of scientific and technical creative activities is the foundation of the material well-being of the individuals implementing it. In this regard, it should be mentioned that

the freedom in question constitutes the basis for the realization of freedom of labor, as well as the right to use abilities to be engaged in economic activity. The main content of freedom of labor is that everyone is given the opportunity to earn a living by the work that he freely chooses. The desire of the individual to carry out scientific and technological activities and thereby realize the freedom of creative activities determines the choice of a profession which indicates the implementation of freedom of labor. At the same time, states should take measures to implement the freedom of labor, including vocational education and training programs, ways and methods of achieving steady economic, social and cultural development and full productive employment when basic political and economic freedoms are guaranteed [15].

Essentially, the relation between the considered freedom of creative activities and the right to use abilities to be engaged in any economic activity is similar. In fact, we are talking about the fact that the freedom of scientific and technical creative activities allows an individual to create a result that can subsequently be commercialized. Such activities for the commercialization of high-tech goods, work, services, and technologies are called innovation activities, which currently form the basis of the economies of the most developed countries. The legal regulation of innovative relations has found legislative regulation in Russia [17].

The current development of the scientific and technological sphere is characterized by the fact that the significant result being urgent in rapidly developing social relations can be achieved by the collaborative creative activities of researchers. Moreover, the specific feature of modern relations is the international nature of scientific and technical creative activities caused by the need to combine the efforts of scientists from different states, as well as interstate financing of projects. Indeed, the practical activity of recent years confirms this thesis. For example, joint interstate programs for space exploration and research in the field of natural sciences often combine the efforts of a large number of scientists. In this regard, the freedom of scientific and technical creative activities determines the implementation of freedom of associations. Freedom of associations is of particular importance in a democratic society, as it contributes not only to the formation of individual scientific teams for the purpose of conducting research but also ensures the creation of scientific communities that allow defending the rights and freedoms of people engaged in scientific and technological activities. The processes of globalization, the development of information systems, the activities of international intergovernmental and non-governmental organizations contribute to the formation of a common scientific and technological area, so undoubtedly, the processes of forming a global scientific community are developing increasingly. In this regard, the idea that “the world science is indivisible seems relevant and ignoring this fact is disastrous for any specialist” [18].

In the research literature, there is no consensus on the issue of types of creative activities. For example, academician V.N. Kudryavtsev agrees with V. Dahl and singles out scientific and artistic creative activities [18]. Other researchers point to the impossibility of attributing scientific and technical activities to creative activities because the latter is associated with the emotional, artistic

sphere of human life, which involves the creation of cultural and material values, whereas science is a special kind of mental and cognitive activity of a person aimed at obtaining any new knowledge [19]. This opinion can be partially agreed with some clarifications. Indeed, scientific and technological activity is a type of cognitive activity of a person, but along with this, it is aimed at finding unique results, creating new theories and technical solutions, constructing new objects, which, of course, are cultural values and achievements. Therefore, the term scientific and technical creativity and, accordingly, designating this type of activity to creative activities seem quite justified.

The process of implementing the freedom of scientific and technical creative activities leads to a certain result of an intellectual nature. The intellectual result is the quintessence of the creative process which reflects the quality and degree of the freedom in question among other things. Often, it is the result as a means of self-expression, embodying the personality of the individual and the depth of its development, that is of particular interest to the creative person. One cannot speak of any outstanding result reflecting the objective truth in the case of a significant restriction or lack of freedom of scientific and technical creative activities.

In international and domestic legal systems, the intellectual result is considered as the property of the person participating in its creation. Accordingly, such a person has all the powers associated with the possession of this result, which are covered by the general concept of intellectual property law. Everyone has the right to protect his/her moral and material interests being the result of scientific activities [20]. States must also create the conditions necessary for the full enforcement of this right, including those necessary for the protection, development, and dissemination of the achievements of science and culture [15; 21].

In the Russian Federation, intellectual property law has legal regulation expressed in the norms of constitutional (Article 44 of the Constitution of the Russian Federation), civil (Section VII of the Civil Code of the Russian Federation), criminal (Articles 146, 147 of the Criminal Code of the Russian Federation), administrative (Article 7.12 RF Code of Administrative Offenses) and other branches of law. We believe that it would be fair to implement subsequent law-making and enforcement in the field of intellectual property, taking into account the relationship with the freedom of scientific and technical creative activities.

We believe that further scientific research may be connected with other rights and freedoms, for example, the freedom of scientific and technical creative activities develops the conditions for the enforcement of the right to protect health and qualified medical care. Obviously, achieving effectiveness in the enforcement of this right is possible when advanced medical technologies and the latest achievements of medical science, created in the process of implementing the freedom of scientific and technical creative activities are introduced [22; 23]. On the other hand, the right to the protection of health in combination with other rights is a factor restricting the freedom of scientific and technical creative activities, for example, issues related to the inadmissibility of human cloning, the implementation of other medical experiments on people [24; 25; 26].

A similar situation arises with environmental rights, in particular, with the right to a favorable environment [10]. The inconsistency of scientific and technological progress is seen in the fact that its achievements, originally created for the benefit of man, in the process of implementation and use begin to harm the ecological system, the violation of which entails the violation of human rights. In some cases, the harm is so significant that scientists and practitioners increasingly mention the term global environmental problem. It should be noted that scientific achievements themselves are indifferent to human rights, including environmental ones. Difficulties arise in the process of using the achievements of science, technology and engineering. The human nature reveals another contradiction associated with scientific and technological progress and creative activities, which is based on the fact that, on the one hand, a person seeks to take advantage of the benefits of civilization, which include the results of scientific and technical creative activities, and on the other, he wants to be in conditions as close as possible to natural. These dialectical aspects stipulate the need for legal intervention in human activity, including in the science and technology field, in particular, through reasonable restrictions on the freedom of scientific and technical creativity.

A study of the work of an outstanding legal expert of the past I.A. Ilyin contributed to the identification of another significant relationship. In modern law there is a category of subjective rights, called collective ones. These include the right to self-determination, which is not only proclaimed in various international and domestic legal acts, but is also one of the fundamental principles of modern legal systems that have the character of *jus cogens*. Substantially, the principle of equal rights and self-determination of peoples establishes that all peoples have the right to freely determine their political status and carry out economic, social and cultural development.

The right to self-determination presupposes the possibility of creating the conditions necessary for people to realize their integrity, unity and common destiny [27]. In this regard, the need to create conditions for the enforcement of the right to use one's native language and the freedom to choose the language of creative activity should be noted [10]. Obviously, the freedom of scientific and technical creative activities in a system with other rights and freedoms is the factor without which complete self-determination of the people is impossible. Moreover, the effective implementation of this freedom is possible only in an independent, truly democratic state with a developed civil society.

The above provisions determine not only the vector of development of law-making and law enforcement but also determine the trends of further legal scientific research.

#### IV. CONCLUSION

Summing up the study, the following conclusions can be made.

1. Human rights and freedoms exercised in the science and technology field have systemic relations. Being in dialectical unity with each other, they determine the trends, boundaries and specific features of joint implementation in the science and technology field.

2. The freedom of scientific and technical creative activities possesses the systemic importance for the

formation and implementation of social relations arising in the science and technology field, it forms the legal basis for the formation and functioning of the science and technology field combined with other rights and freedoms.

3. The freedom of scientific and technical creative activities is the fundamental legal regulator of public relations in the science and technology field. It has an inherent legal nature and is inherent in everyone from the moment of birth.

4. The freedom of scientific and technical creative activities is of particular interest for lawmaking and legal regulation in connection with its key importance in the system of human rights and freedoms in the science and technology field. The identification of its structure, consisting of external and internal elements allows increasing the efficiency of regulation. External elements include the legal status of the subject of creative activities; the result of creative activities. Internal elements include an independent determination of the subject of creative activities by an individual, as well as methods for its implementation.

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