



Scientific Works as Intellectual Property Objects

Stoyan Denchev¹, Tereza Trencheva², Svetoslava Dimitrova³

University of Library Studies and Information Technologies, Bulgaria^{1,2,3}

Abstract

The university information environment is dedicated to science. Every day scientists, scholars, researchers, devote their own life to science and that is for the well-being of all humanity. That's why these people of science should be protected, and mainly their creations. The potential value of scientific researches can change lives; to help governments, industries, society, etc. The scientific works are part of the national and the world cultural heritage. The scientific work is a result of the creative activity of its creator who explores the surrounding world; the processes that occur in it; the elements that build it, and the connections between them; and expresses them through his own scientific views, understanding, knowledge, attitudes, competences. All these are only intellectual efforts and they end with intellectual product – so called scientific works. The aim of this paper is to define the specific characteristics of scientific works and the principles of protection, set in the Berne Convention for the protection of literary and artistic works. In order to achieve that goal, an analysis of the types of works will be made, based on different criteria – according to the number of authors; the means of expressions; the basis of creation; the type of scientific knowledge. An overview of the objects that cannot be recognized as copyrighted, such as scientific discoveries, official translations of regulations, will be made. Last, but not least, a categorization of the rights owners of scientific works will be made and that includes authors, heirs of the author, employers of the ones that create works of science, users of works of science, etc. The scientific works give us mainly knowledge that we all benefit from and the protection of works of science is a right of every creator.

Keywords: *intellectual property, scientific works, copyright, university information environment, the Berne Convention.*

1. Introduction

Intellectual property has long, historical based live, become an essential part of our daily lives, finding application in every field and aspect. The role of intellectual property in the university information environment is also crucial. The scientific content that is created in it requires a continuous process of protection, since scientific works should not be vulnerable in any way. Based on the intellectual efforts put in the creation of intellectual products, they can be conditionally divided into two groups:

- *industrial property*, and that category includes inventions, utility models, trademarks, designs, etc.,
- *objects of copyright*, and that category includes works of literature, art and science.

Therefore, the scientific works are classified as an object of copyright and enjoy the full protection it provides.

The use of scientific works is regulated both in international treaties for the protection of intellectual property, which Bulgaria has ratified (the Convention establishing the World Intellectual Property Organization (WIPO), the WIPO Copyright Treaty, the Berne Convention for the Protection of Literary and Artistic Works), and in national laws, such as the Copyright and Related Rights Act. However, none of the acts defines what a scientific work is.

2. Types of scientific works

According to the basis of creation, scientific works are:

- Primary (original);
- secondary (derivatives).

Primary works are those works that were created for the first time and have no prototype. Secondary are those works which are created on the basis of an already existing primary work, in such a way as to discover the similarities of the secondary with the primary.

According to the type of scientific knowledge contained in scientific works, they are:

- theoretical;
- applied.

Theoretical-oriented scientific works offer knowledge of laws, regularities, processes, phenomena, etc., and the knowledge contained in them cannot be represented in the form of objects in the real



world. These are the work of scientific fields such as politics, law, economics, history, and more. Applied scientific works present knowledge of chemistry, physics, biology, anatomy, metallurgy, and more.

According to the number of authors of scientific works, they are:

- individual;
- co-authored.

The individual presupposes that it was created by one person, while the co-authored is created by several authors, who made concerted efforts to create the scientific work.

According to the number of works that the scientific works contain, they are:

- single;
- combined.

A single scientific work is a self-contained and complete work, such as a thesis, dissertation, etc. Combined is that work that includes individual works, which are compiled as a whole. Combined works, in turn, are divided into collective and composite. Collective are those works whose creation the authors know beforehand and prepare their copyrighted materials to be included in this collective work. Compiled are those works whose creation the authors do not know in advance, and when they prepare their copyrighted material, they do not know that they will be included in this compiled work. Usually, a compiled work is the work of a single composer, and he has a copyright of the entire compiled work, but the individual authors, whose works are included in it, keep their own copyright of their individual work.

According to the means by which scientific works are expressed, they are:

- literary;
- photographic;
- audio-visual;
- graphic;
- combined.

Literary are those scientific works where the main means of expression is the text – an article, a report, a dissertation, etc., and the form of presentation can be either written or oral. Photographic are those works that use a visual expression that contains a specific moment, result of scientific research. Audio-visual are those works that also use visual expression, but they represent a larger segment, i.e. more dynamic, result of scientific research. Graphic are those works that contain signs and symbols, such as diagrams, sketches, maps, graphics, and more. Combined scientific works use different means of expression and are not limited to one of them – such as text with tables, figures and photographs. [1], [2]

3. Objects that are not recognized as copyrighted

Scientific discovery does not enjoy the protection of intellectual property rights, in particular copyright, and the reason lies in the very nature of scientific discovery as such. The definition of scientific discovery is the identification of phenomena, properties, or laws of the material world, unknown before and is a subject to verification. Therefore, based on that definition, scientific discovery cannot be created by man and added to the surrounding real world. Official translations of regulations also do not enjoy the protection of intellectual property rights. The reason is that the initiative for this translation is from the authority which issued the act, or, as in the case of international treaties, by the authority which is authorized to ratify it. Having an official translation of a normative act does not necessarily mean that it is impossible for a private person to make a translation of that document. This private translation is for commercial use and the translator is copyrighted for the translation he has made. Other objects that do not enjoy the protection of intellectual property rights are ideas and concepts, folklore works, news, facts, information. [3], [4]

4. Rights holders of scientific works

Rights holders of scientific works include:

- the author of the scientific work;
- the heirs of the author of the scientific work;
- employers or persons creating a scientific work;
- the contracting authorities of scientific works;
- users of a scientific work;
- persons who have publicized a scientific work on specific terms.



The author is the person who, after research, creates a scientific work. After the death of the author, copyright is exercised by his heirs, and they exercise that right until the period of protection, that is fixed by law, expires. The employer of a person who creates scientific works may also own the rights to them – in cases where the works are created within the framework of an employment contract whose object is precisely the creation of such works. Contracting authorities of scientific works may also own the rights of them, in the cases where the work is custom-made, by assigning it. The users of a scientific work are publishing houses, radio and television organizations, etc., who use scientific works in their activity or in connection with it and their delivery to the end user. A copyright may also be held by a person who has disclosed it publicly, but on condition that the work has been anonymously publicized, nicknamed or publicized after the end of the copyright term. [5], [6].

5. Basic Principles in The Protection of Scientific Works

The basic principles of protection are set out in the Berne Convention for the protection of Literary and Artistic Works, adopted by WIPO in 1886, and ratified by Bulgaria as early as 1921, and they address the principles and all other fundamental issues of the intellectual protection of authors. They have also been reflected in all national copyright laws, including the Copyright and Related Rights Act, adopted in 1993.

The principles underlying the above-mentioned Bern Convention on the protection of scientific works are:

- the principle of the automatic emergence of protection by the very creation of a scientific work;
- the principle of the protection term;
- the principle of territorial limited protection;
- the principle of the national regime;
- the principle of the convention minimum.

The principle of the automatic emergence of protection means that copyright arises by the very creation of a scientific work in an objective form, without any legal action being taken. The principle of protection term means that intellectual property rights are limited over time, including in scientific works. In other words, copyright is recognized and exercised only for a period, fixed by law, and after that period is over anyone can use the scientific work freely. The principle of territorial limited protection means that a country recognizes and guarantees the protection of copyright in a scientific work only within its territory. The principle of national regime means that a state, part of the Berne Convention, grants copyright protection to foreign nationals, representatives of countries, also members of the Convention, who are in its territory, following the same principles as their nationals. The principle of convention minimum means that the protection afforded to citizens in one member state of the Convention in another state cannot be below the level of protection enshrined in the Convention. Also, the level set out in the Convention is only minimal, and each country must adopt reinforcing measures in its national legislation. [5]

6. Conclusion

The scientific work is the result of research presented in an objective manner. Scientific works and especially the knowledge they offer find their application in the industries and other different fields of activities. Their application increases the scientific and educational potential of society. The created scientific content only increases the global mass of knowledge. That's why the nature and the intellectual property aspects of scientific works need to be an object of future researches, in order for authors of scientific works to work in a secure environment in this respect.

7. Acknowledgements

This research would not have been possible without the financial assistance of the following project: "A Conceptual Educational Model for Enhancing Information Literacy in an University Information Environment", financed by National Science Fund of the Ministry of Education and Science of the republic of Bulgaria with Contract № KP – 06 – H35 / 10 or 18.12.2019, led by Prof. DSc Stoyan Denchev.

References

- [1] Denchev, S. & Trencheva, T. "Intellectual Property as a Basic Part of the University's Information Literacy", Proceedings of ICEMS 2016 Conference, 28-29th May, DEStech Publications, Beijing/China, 2016, pp. 74-78.



- [2] E. Zdravkova. Media literacy as a key competency for the safe and effective use of media, In Conference Proceedings: 12th International Conference on Education, Research and Innovation, Seville, Spain, 2019, pp. 7467-7473
- [3] K. Planska-Simeonova. Copyright Protection of Photographic Information in Compliance with the New Regulations Of The European Union, 11th annual International Conference on Education and New Learning Technologies Palma de Mallorca, Spain, 2019, pp. 5040-504
- [4] Titu, M., Oprean, C., Stan, S. & Titu, S. "The Place and Role of Intellectual Property Policies in an Advanced Scientific Research and Education University", International Conference Knowledge-Based Organization, 2017, vol. 23, no. 1, pp. 479-488.
- [5] Tsakova, V. "Works of science as Intellectual Property Object". Sofia: University Publishing House "Stopanstvo", 2009.
- [6] Yordanova, D. "Development of Complex' Measures for Copyright Protection in Universities", Proceedings of 5th National Seminar with International Participation "Intellectual Property, Innovations and Science in a Global Environment, Sofia, "Za bukвите – O Pismeneh", 2017, pp. 55-62.
- [7] S. Dimitrova. E-content – intellectual property aspects // 11th International Conference on education and new learning technologies, EDULEARN19 Proceedings, Palma, Mallorca, Spain, Vol. 11, 2019, pp. 6061-6065.
- [8] M. Traykov, M. Trencheva, R. Mavrevski, A. Stoilov, I. Trenchev, Using Partial Differential Equations for Pricing of Goods and Services // Scientific Annals of Economics and Business, vol., 63(2), 2016, pp. 291-298.