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# AI and Copyright law

## The protection of AI-generated outputs

**Alice Hanfelt**

DEPARTMENT OF BUSINESS LAW

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# Contents

# Abstract

There is uncertainty about whether AI-generated output can and should be protected under EU copyright law and, in that case, who should obtain the rights. This thesis examines this legal issue by interpreting the legal text especially the InfoSoc Directive, case law and by considering legal scholarships. It has been established in the thesis that an AI-generated output can be considered protectable if it meets the traditional copyright requirements of being a 'work'. Furthermore, according to some scholars, two actors that could claim authorship for such output are the developers of the AI systems or the user of the system. For example, a user could show creativity when entering detailed prompts and modifying the final output into his own creation. In addition, the developer of the AI system can develop the system in a way that makes it possible for the developer to predict the output and thereby express creativity and originality in the generating process. However, this assumes that AI is used as a tool and not acting independently in the generative process. Moreover, a conclusion is made that it is probably challenging for an AI-generated output to meet the requirements of copyright protection. Therefore, the possibility of protecting AI-generated outputs as related rights is further examined and considered more appropriate, as related rights are not subject to any thresholds. Potentially, an AI-generated output could take the form of a recording and, therefore, be protected under existing categories of related rights. In addition, both the user and developer of an AI system could be considered the rights holder of such recording by making investments in the creation of a recording. Finally, a suggestion is presented to introduce a new category of related rights to bring more legal certainty and avoid the risk of AI outcompeting human creativity.

**Keywords**: European Union, Copyright, Related rights, InfoSoc Directive, AI-generated output, Protection, Rights holder, Prompts, Requirements, Thresholds.

# Abbreviations

| | |
|---|---|
| AI | Artificial Intelligence |
| CJEU | Court of Justice of the European Union |
| DSM | Digital Single Market |
| EU | European Union |
| genAI | Generative AI |
| InfoSoc | Information Society |
| IPRs | Intellectual Property Rights |
| TRIPS | The Agreement on Trade-Related Aspects of Intellectual Property Rights |
| UN | United Nations |
| WCT | WIPO Copyright Treaty |
| WIPO | World Intellectual Property Organisation |
| WPPT | WIPO Performers and Phonograms Treaty |
| WTO | World Trade Organisation |

# 1 Introduction

## 1.1 Background

In recent times, the evolution of artificial intelligence (AI) has given rise to discussions on whether AI-generated outputs are eligible for copyright protection. It includes considerations of whether the output is of such a nature that it is covered by current legislation and who should obtain its rights.[1] Today's creators can take advantage of the new technology in their creative processes by using AI as a tool. However, AI-output can be generated incredibly quickly, and the result is often considered to be of better quality than the result of human-made creations. This could rival human creativity and challenges the traditional system of copyright and related rights protection.[2] For instance, it could result in potential job losses and threaten to outcompete writers, musicians, and performers.[3] Traditional copyright protection of the European Union (EU) is obtained by the author for expressions of literary and artistic domain, such as paintings, texts, poems, compositions, and tunes, whether published or not. In contrast, related rights are akin to copyright but aim to protect the creations of performers, producers, and broadcasting organisations.[4] The current legal framework is mostly harmonised throughout the EU, which contributes to legal certainty, promoting innovation, and protecting the rights of the creators.[5] However, the legal framework might need adaptation to the new technology.[6] The uncertainty of whether AI-generated outputs can be covered by current legislation is argued to have arisen due to the reduced human control in the creative process.[7] Consequently, according to some scholars, two actors that could potentially receive protection for

[1] Axhamn, Johan., *Copyright and Artificial Intelligence – with a focus on the area of music*. In M. Rosenmeier, T. Riis, J. Schovsbo, and H. Udsen (eds.), *Festskrift til Jorgen Blomqvist,* 1st ed. Vol. 1, 2021, pp. 33-34, [cit: Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*].

[2] Appel, Gil., Neelbauer, Juliana. and Schweidel, David A., *Generative AI has an Intellectual Property Problem,* Harvard Business Review, 2023-04-07, Available at https://hbr.org/2023/04/generative-ai-has-an-intellectual-property-problem (accessed 24 April 2024), [cit: Appel et al., *Generative AI has an Intellectual Property Problem*].

[3] García-Peñalvo, Francisco José. and Vázquez-Ingelmo, Andrea., *What Do We Mean By GenAI? A Systematic Mapping of The Evolution, Trends, and Techniques Involved in Generative AI,* 2023-07-24, p. 8, [cit: García-Peñalvo and Vázquez-Ingelmo*, What Do We Mean By GenAI? A Systematic Mapping of The Evolution, Trends, and Techniques Involved in Generative AI*].

[4] Pila, Justine and Torremans, Paul., *European Intellectual Property Law,* 2nd ed. Oxford: Oxford Press, 2019, pp. 221-225. [cit: Pila and Torremans*, European Intellectual Property Law*].

[5] van Eechoud, Mirielle., Hugenholtz, Bernt. P., van Gompel, Stef., Guibault, Lucie. and Helberger, Natali., *Harmonising European Copyright Law: The Challenges of Better Lawmaking,* University of Amsterdam, No. 2012-07, pp. 7-9. [cit: van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*]. See also Recital (4) of Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society.

[6] European Parliament, *Artificial Intelligence Act: deal on comprehensive rules for trustworthy AI*, 2023-12-09, Available at https://www.europarl.europa.eu/news/en/press-room/20231206IPR15699/artificial-intelligence-act-deal-on-comprehensive-rules-for-trustworthy-ai, (accessed 24 April 2024).

[7] Hugenholtz, Bernt. P. and Quintais, Joao. Pedro., *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?* Vol. 52, 2021, p. 1191. [cit: Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?*].

such outputs are the developers of the AI systems or the user of the system.[8] This raises the question of which of them it may be, if any of them.

## 1.2 Purpose and research questions

The purpose of this thesis is to describe and analyse the protectability of AI-generated outputs and to discuss potential rights holders of such right, according to EU law on copyright and related rights, in particular the InfoSoc Directive. To achieve this purpose, the study will account for the different objects of protection envisaged by the directives as well as the different categories of rightsholders. The following research questions will be considered:

1. To what extent is an AI-generated output considered a protectable subject matter under EU law on copyright and related rights?

2. Under what conditions could the user or the developer of an AI system be eligible rights holders?

## 1.3 Method and materials

Copyright and related rights are regulated in international, European, and national law. The legal framework is extensive and includes international conventions setting out minimum requirements, several EU directives, and the Member States' national legislation that must comply with these.[9] EU directives will constitute an essential component of the materials utilised in this thesis. This is because EU copyright law is mainly based on directives, and the purpose of this thesis is to determine whether output generated by AI could be protected under EU copyright law. Directives are binding legal acts adopted by an EU institution to achieve a result within the Union.[10] In this way, the EU can exercise its competence.[11] However, national authorities of the Member States are free to choose how a directive is to be implemented in their country, which means that the national legislation is partially uniquely designed but has the same basis.[12] The InfoSoc Directive is particularly important for this thesis because it harmonises the foundations of copyright and related rights across the EU.[13]

In order to understand and retrieve the content of EU copyright law, judgments from the Court of Justice of the European Union (CJEU) will be interpreted. Especially cases that set out and interpret the requirements for copyright protection. The CJEU acts at the request of the Member States to, among other things, interpret EU law and assess the Treaties' conformity with international conventions. This is done by either

[8] Guadamuz, Anders., *Artificial Intelligence and Copyright,* WIPO Magazine, 2017-10, Available at https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html, (accessed 22 March 2024), [cit: Guadamuz, *Artificial Intelligence and Copyright*].

[9] Pila and Torremans*, European Intellectual Property Law* pp. 221-225.

[10] Ibid., p. 60.

[11] See Article 288 of the Treaty on the Functioning of the European Union.

[12] European Commission, *Implementing EU Law,* Available at https://commission.europa.eu/law/application-eu-law/implementing-eu-law_en (accessed 23 April 2024).

[13] See especially Recital (1), (9) and (10) of Directive 2001/29/EC.

direct effect, preliminary rulings, or opinions.[14] The court uses several methods to interpret, such as teleological and systematic approaches.[15] These methods imply that the court must interpret and fill the gap between primary law, i.e., the treaties, and secondary law, such as the directives. The teleological approach aims to interpret what the law aims to achieve. In comparison, the systematic approach has the starting point that the Treaties establish a legal order that is coherent and comprehensive.[16] However, some scholars argue that there is potentially a lack of coherent copyright jurisprudence.[17] Nevertheless, the material used for this thesis is primarily legal text and case law. Since AI-generated output is a new phenomenon, several questions arise regarding how to treat and analyse whether outputs can be protected. The legal dogmatics method is used within legal studies to interpret and analyse the principles, rules, gaps, and uncertainties of the law. The wording of the law is to be interpreted and analysed mimicking the way a judge would operate.[18] When viewing the law as an interconnected system, the author should immerse themselves within this system guided by current legislation. By identifying potential gaps and ambiguities in legislation and jurisprudence, it is possible to suggest potential outcomes and assess how the legal situation may develop.[19] In addition, the EU legal method is used to interpret the legal text against the background of the wording and purpose of the EU directives, and in relation to what has emerged from the judgments of the CJEU.[20]

In order to get guidance on how AI-generated works can be perceived, some rulings from national courts in foreign jurisdictions will be considered. It must be noted that these should not be interpreted as precedents for how the CJEU shall rule in future cases. Furthermore, legal scholarship is used and constitutes secondary sources for this thesis. These aim to clarify the legal situation, the content, and the interpretation of the law.[21] However, the legal scholarships have been chosen carefully since the legal situation is uncertain, and many disagreements and different theories are circulating.

## 1.4 Delimitations

This thesis will not examine jurisdictions outside the EU or the Member States' national laws. However, exceptions to this are made when discussing case law for the purpose of obtaining guidance. Furthermore, the protection for press publishers, computer programs and the sui generis database protection is delimited. Other aspects that warrant exclusion from the thesis is the copyright exceptions and

[14] Pila and Torremans, *European Intellectual Property Law*, pp. 63-64.

[15] Favale, Marcella., Kretschmer, Martin. and Torremans, Paul C., *Is there an EU Copyright Jurisprudence? An Empirical Analysis of the Workings of the European Court of Justice*. Vol. 79, No. 1. 2016. p. 69. [cit: Favale, et. al., *Is there an EU Copyright Jurisprudence? An Empirical Analysis of the Workings of the European Court of Justice*].

[16] Lenaerts, Koen and Gutiérrez-Fons, José A., *To Say What the Law of the EU is: Methods of Interpretation and the European Court of Justice,* European University Institute, 2013, pp. 13 and 24-25.

[17] Favale, et. al., *Is there an EU Copyright Jurisprudence? An Empirical Analysis of the Workings of the European Court of Justice*, p. 70.

[18] Smits, Jan. M, *What is legal doctrine? On the aims and methods of legal-domestics research,* Maastricht European Private Law institute (M-EPLI). Working paper No. 2015/06. pp. 5-7 and 14-16. [cit: Smith, *What is legal doctrine? On the aims and methods of legal-domestics research*].

[19] Ibid.

[20] Riesenhuber, Karl (ed.), *European Legal Methodology*, 2nd ed. Cambridge: Intersentia, 2021, pp. 3-7.

[21] Smith, *What is legal doctrine? On the aims and methods of legal-domestics research*, pp. 14-16.

limitations in general, but especially what follows from Articles 3 and 4 of the DSM Directive. This is because the focus of the essay is not on exploitation by users. In addition, the question of whether an output could infringe on a pre-existing work is excluded. This is because the thesis only focuses on obtaining protection as such. In addition, the AI Act is excluded, and orphan works are not considered in the thesis.

## 1.5 Outline

This thesis is divided into three investigative chapters, with a concluding chapter at the end. Chapter two aims to provide the reader with an understanding of the foundations of copyright and related rights, which prepares the reader for the upcoming chapters. The chapter maps out the relevant existing legal framework, examines the requirements for obtaining protection, and presents how international and European copyright law are connected. Chapters three and four form the core of the thesis. First, the technological definition of generative AI is provided. Furthermore, an ongoing analysis and discussion establish whether AI-generated outputs can be compatible with the requirements of copyright and related rights protection. In addition, these chapters include an assessment of whether the user or the developer of an AI system could be designated the rights holder of an AI-generated output. The final chapter provides a brief summary where conclusions are drawn, a potential future perspective is presented, and complexities are discussed.

# 2 Understanding the foundations of copyright and related rights

## 2.1 Introduction

Copyright and related rights have been harmonised within the EU through 13 directives and two regulations regulating different areas within copyright, such as the term of protection[22] and rental and lending rights.[23] The harmonisation aims to ensure strong protection for rights holders and to enhance the functioning of the internal market.[24] The EU and its Member States are contracting parties to several international conventions on copyright law, which implies that EU copyright law must build on and align with these conventions.[25] Thus, the legal framework is complex and fragmented. The Berne Convention was adopted in 1886, and international common rules on copyright protection were established.[26] In addition, the Rome Convention was adopted in 1961 and established rules for the protection of related rights.[27] The rules provided in the conventions constitute minimum standard protection of copyright and related rights, meaning that the contracting parties of the conventions, has the flexibility to form and further develop these provisions as long as they comply with what follows from the conventions.[28] Furthermore, the World Intellectual Property Organization (WIPO), a specialised agency of the United Nations (UN), provides two treaties – the WIPO Copyright Treaty (WCT) and the WIPO Performance and Phonograms Treaty (WPPT).[29] The WCT aims to develop and maintain the protection of authors,[30] and similarly the WPPT aims to develop and maintain the protection of performers and producers of phonograms.[31] In addition, the WIPO Treaties seek to foster innovation and creativity throughout all contracting states to keep pace with economic and technological achievements.[32] Furthermore, the World Trade Organisation (WTO) provides the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), setting out minimum requirements on intellectual property rights (IPRs) with the main focus on international trade.[33] International law regulates the protection of copyright and related rights separately, but in 2001 the EU harmonised

[22] Directive 2006/116/EC of the European Parliament and of the Council of 12 December 2006 on the term of protection of copyright and certain related rights.

[23] Directive 2006/115/EC of the European Parliament and of the Council of 12 December 2006 on rental right and lending right and on certain rights related to copyright in the field of intellectual property.

[24] Recital (3) and (4) of Directive 2001/29/EC.

[25] Recital (15) of Directive 2001/29/EC, see also Pila & Torremans, *European Intellectual Property Law,* p. 226.

[26] See Article 1 of the Berne Convention for the Protection of Literary and Artistic Works (1886).

[27] See Article 2 of the Rome Convention, International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organisations (1961).

[28] Pila and Torremans., *European Intellectual Property Law,* pp. 29-30 and 226.

[29] International Bureau of WIPO, *The advantages of adherence to the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT)*, p. 2, Available at https://www.wipo.int/export/sites/www/copyright/en/docs/advantages_wct_wppt.pdf, (accessed: 12 April 2024).

[30] See preamble to WCT.

[31] See preamble to WPPT.

[32] Pila & Torremans, *European Intellectual Property Law,* p. 30.

[33] See preamble to TRIPS Agreement.

these rights in the InfoSoc Directive.[34] Consequently, the directive regulates the rights of authors as well as performers, producers, and broadcasters.[35] The subsistence of protection according to the directive, is considered in the subsequent section.

## 2.2 Subsistence of protection

Article 1(1) of the InfoSoc Directive regulates the scope of the directive, which is the legal protection of copyright and related rights. The exclusive rights provided as a consequence of obtaining legal protection and to whom these rights are designated are further regulated in Articles 2-4 of the Directive. According to Article 2 of the InfoSoc Directive, a reproduction right is provided;

> "(a) for authors, of their works;"
>
> "(b) for performers, of fixations of their performance;"
>
> "(c) for phonogram producers, of their phonograms;"
>
> "(d) for the producers of the first fixations of films, in respect of the original and copies of their films;"
>
> "(e) for broadcasting organisations, of fixations of their broadcast, whether those broadcasts are transmitted by wire or over the air, including cable or satellite."

This article shows what constitutes a protectable subject matter under the directive and who receives the rights. A distinction is made between authorial works and related rights. Copyright protection arises only for authors, of their works, while related rights are expressed under (b)-(e). This means that the protectable subject matter differs depending on whether one gains copyright protection or protection of related rights.[36] The InfoSoc Directive does not provide a definition of 'work', and neither does any of the other directives.[37] However, Article 1(1) of the Term Directive refers to Article 2 of the Berne Convention in how to interpret the definition. Article 2(1) of the Berne Convention states that a 'work', in the meaning of copyright, is an expression of literary and artistic domain. In comparison, a related right is a subject matter falling outside the scope of the Berne Convention.[38] In other words, related rights are neighbouring rights to copyright. The difference between the rights conferred can be explained by the fact that a sonata is protected by copyright, and a recording of the sonata is protected as a phonogram.[39] This establishes that related rights protection exists independently of a work. However, the rights are closely related since a recording cannot be made if there is no artistic

[34] Recital (2-5) of Directive 2001/29/EC and see Pila & Torremans, European Intellectual Property Law, p. 225.
[35] See Article 2 of Directive 2001/29/EC.
[36] Pila & Torremans, *European Intellectual Property Law,* pp. 249 and 265-267.
[37] Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?*, p. 1193.
[38] Angelopoulos, Dr Christina, *Study on EU Copyright and related rights and access to and refuse of scientific publications, including open access – Exceptions and limitations, rights retention strategies and the secondary publication right,* European Commission, 2022-06, p. 18.
[39] Pila & Torremans, *European Intellectual Property Law,* pp. 249.

work to record, and a work cannot be communicated to the public without being recorded or performed.[40]

When protecting works and related rights, exclusive rights are granted to prevent third parties from using the protected subject matter without permission, and in a way that is incompatible with the interest of the rights holder. These rights consist of both economic and moral rights.[41] Economic rights give the rights holder control over the reproduction, communication to the public, and distribution of the protectable subject matter,[42] which is regulated in Articles 2-4 of the InfoSoc Directive. Moral rights are not regulated in the scope of the directive but shall be applied in accordance with what appears in the Members States copyright laws, in the Berne Convention and in the WIPO Treaties.[43] Article 6bis of the WCT regulates the moral rights of the author. For example, the author has the right to claim authorship and to uphold the rights after the author's death. In contrast, Article 5 of the WPPT regulates the moral rights of performers. It gives, for example, the performer the right to be identified as the performer of the performance but does not give any additional rights after the performer's death. However, the WPPT is silent on the moral rights accrued to producers or broadcasting organisations.

The duration for which the rights holder holds economic rights is limited and regulated in the Term Directive. However, it should be noted that the directive is not applicable to moral rights.[44] According to Article 1(1) of the Term Directive, the time the protection remains in effect depends on the author's lifetime and another 70 years after the author's death. Article 3 of the Term Directive was amended in 2011 and states that related rights should be protected from when the performance, fixation, or broadcast was made and the next 70 respectively 50 years.[45] Consequently, the duration of protection for related rights is not determined by the lifetime of the performer, producer, or broadcasting organisation.[46] Additionally, the scope of protection for copyright and related rights is independent of any formalities. This is not explicitly stated in the InfoSoc Directive. However, Article 5(2) of the Berne Convention states that the rights granted to the author must be independent of any formalities, meaning that the protection of copyright is not subject to registration; it is obtained "automatically" when an expression is considered a 'work'.[47] Similarly, Article 20 of the Rome Convention states that related rights "shall not be subject to any formality". In other words, if a creation is considered a protectable subject matter, the rights holder receives exclusive rights without having to act.

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[40] van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*, pp. 37-38

[41] Pila & Torremans, *European Intellectual Property Law,* p. 277.

[42] Poort, Joost, *Borderlines of Copyright Protection: An Economic Analysis.* In Hugenholtz, P. Bernt (ed.) *Copyright Reconstructed: Rethinking Copyright's Economic Rights in a Time of Highly Dynamic Technological and Economic Change,* Kluwer Law International, 2018, p. 284.

[43] Recital (19) of Directive 2001/29/EC.

[44] Recital (20) of Directive 2006/116/EC.

[45] Directive 2011/116/EC of the European Parliament and of the Council of 27 September 2011 amending Directive 2006/116/EC on the term of protection of copyright and certain related rights.

[46] Pila & Torremans, *European Intellectual Property Law,* pp. 305-308.

[47] WIPO, *Summary of the Berne Convention for the Protection of Literary and Artistic Works (1886),* Available at https://www.wipo.int/treaties/en/ip/berne/summary_berne.html#_ftn1, (accessed 13 April 2024).

## 2.3 The requirements for copyright protection

This section intends to give the reader an understanding of how traditional copyright protection arises by mainly going through the requirements and interpretations set by case law from the CJEU. In the case *Levola Hengelo*, the court interpreted the concept of 'work' in the meaning of the InfoSoc Directive.[48] The court established two requirements that must be met in order to be considered a work.[49] The subject matter "must be original in the sense that it is the author's own intellectual creation"[50] and be an "expression of the author's own intellectual creation".[51] First, the definition of an 'expression' should be examined. The court stated in the *Levola Hengelo* case that since the EU is a contracting party of the WCT, the EU must comply with the Berne Convention, Articles 1 to 21.[52] According to Article 2(1) of the Berne Convention, a 'work' should take the form of a literary or artistic expression and not as an idea, method, or concept, etc. According to the WIPO Guide to the treaties, this is because the author's works are "considered as the products of the human mind and, therefore, as expressions of the personality of their authors".[53] This is called the 'idea/expression dichotomy', which limits the scope of protection by making a difference between an idea and an expression.[54] For example, the idea of composing a song about love cannot be protected: any love song can be protected as long as it is expressed differently and considered a protectable subject matter.[55] Secondly, the expression must be either artistic or literary to be considered a protectable subject matter. For example, the CJEU established that a taste could not be classified as a work in the meaning of the InfoSoc Directive.[56] This was partly because a taste cannot be determined objectively, unlike artistic works.[57] Consequently, literary works include stories, poems, compositions, and scientific studies, and artistic works include paintings, sculptures, etc.[58]

In addition to the requirements of being an expression of a literary or artistic nature, the expression must also be a result of 'the author's own intellectual creation' and possess 'originality'.[59] According to Rosati, it has been shown that it is difficult to determine the scope of originality.[60] However, she means that the concept of originality is often interpreted in connection with the 'author's own intellectual creation' as an intellectual contribution that reflects the author's personality.[61] The

[48] Case C-310/17 *Levola Hengelo* [2018] ECLI:EU:C:2018:618, para. 1. [cit: Case C-310/17 *Levola Hengelo*].

[49] Ibid., para. 35.

[50] Ibid., para. 36.

[51] Ibid., para. 37.

[52] Ibid., para. 38.

[53] WIPO, *Guide to the Copyright and Related Rights Treaties Administered by WIPO and Glossary of Copyright and Related Right Terms*, p. 7. Available at https://www.wipo.int/edocs/pubdocs/en/copyright/891/wipo_pub_891.pdf, (accessed 13 April 2024).

[54] Shemtov, Noam, *The Idea – Expression Dichotomy and its Role in Software-Related Disputes*, Oxford University Press, 2017, p. 105.

[55] van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*, pp. 34-35.

[56] Case C-310/17 *Levola Hengelo*, para. 44.

[57] Ibid., p. 42.

[58] WIPO, *Guide to the Copyright and Related Rights Treaties Administered by WIPO and Glossary of Copyright and Related Right Terms*, p. 267, https://www.wipo.int/edocs/pubdocs/en/copyright/891/wipo_pub_891.pdf.

[59] Case C-5/08 *Infopaq* [2009] ECLI:EU:C:2009:465, para. 35. [cit: Case C-5/08 *Infopaq*].

[60] Rosati, Eleonora, *Judge-Made EU Copyright Harmonisation – The Case of Originality,* European University Institute, 2012-09, pp. 63-64, [cit: Rosati, *Judge-Made EU Copyright Harmonisation – The Case of Originality*].

[61] Ibid., p. 76.

CJEU has interpreted these concepts in several legal cases. For instance, in the *Infopaq* case, about reproduction of newspapers.[62] The court stated that an author can only show an 'intellectual creation' by expressing his creativity in an original manner by "[…] the choice, sequence and combination of those words that the author may express […]".[63] In this case, the court established that "11 consecutive words" can be considered enough to be protected if they meet a sufficient degree of originality.[64] The requirement on originality was further interpreted in the *Painer* case, which concerned the use of photographs.[65] The court stated that an expression must "reflect the authors personality" and "express his creative abilities in the production of the work by making free and creative choices".[66] This established that the author can fulfill the requirement of originality in several ways, in different parts of the process when the work is produced.[67] However, in the *Brompton Bicycle* case, the CJEU concluded that if the subject matter is covered by particular limitations, such as how the final product will look. Then, the requirement of creativity cannot be exercised, and the final expression will not be considered original.[68] Consequently, the CJEU has established that it is not enough for the author to make a literary or artistic expression: originality and creativity is required to obtain protection, and only a work that expresses this, is an entitled subject matter covered by EU copyright law.[69]

As previously mentioned, the rights of a work belong to its author. According to the above presented case law, the author should express an intellectual creation that possesses originality, creativity and leaves a personal mark.[70] Hugenholtz and Quintais argue that, in order for the author to express all these features, there is a need for some human intellectual effort.[71] Similarly, Guadamuz indicates that "a human author is necessary for a copyrighted work to exist".[72] Furthermore, several provisions in the directives indicate the author to be human. For example, Article 2-4 of the InfoSoc Directive states that the author has the right to determine how his exclusive rights should be administered. Consequently, the author must be able to make decisions. Moreover, the term of protection regulated in Article 1(1) of the Term Directive is based on the author's lifetime, indicating that the author must be human. Therefore, it should be interpreted as the author must be human to be eligible for copyright protection.[73]

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[62] Case C-5/08 *Infopaq*, para 2.

[63] Ibid., para. 45.

[64] Ibid., para. 48.

[65] Case C-145/10 *Painer* [2011] ECLI:EU:C:2011:798, para. 2. [cit: Case C-145/10 *Painer*].

[66] Ibid., paras. 88-89.

[67] Ibid., para. 90.

[68] Case C-833/18 *Brompton Bicycle* [2020] ECLI:EU:C:2020:461, para. 24.

[69] Case C-469/17 *Funke Medien* [2019] ECLI:EU:C:2019:623, paras. 19–20.

[70] Case C-145/10 *Painer*, paras. 88–89.

[71] Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?* p. 1194.

[72] Guadamuz, *Artificial Intelligence and Copyright.*

[73] Ramalho, Ana, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan,* Routledge, London and New York, 2022, p. 6. [cit: Ramalho, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan*].

## 2.4 The requirements for protection of related rights

This section aims to provide the reader with an overview of the protection of related rights and explain the difference to copyright protection. Article 2(b-e) of the InfoSoc Directive distinguishes between different types of rights holders: 'performers', 'producers', and 'broadcasting organisations'. Furthermore, it distinguishes between the associated subject matter, which is 'fixations of their performance', 'phonogram', 'first fixation of films' and 'fixation of their broadcast'. According to van Eechoud and others, these constitute general concepts for what is to be protected and to whom the rights are designated. Thus, what constitutes a subject matter and who is designated the rights can be difficult to identify from what is stated in the directive.[74] However, Article 2 of the WPPT provides more detailed definitions of how these concepts should be interpreted. As previously explained, guidance can be taken from the WPPT since the EU is a contracting party and needs to comply with what is stated in the Treaty.[75] The article states that;

> "(a) "performers" are actors, singers, musicians, dancers, and other persons who act, sing, deliver, declaim, play in, interpret, or otherwise perform literary of artistic works or expressions of folklore;"
>
> "(b) "phonogram means the fixation if the sounds of a performance or of other sounds, or of representation of sounds, other than in the form of a fixation incorporated in a cinematographic or other audiovisual work;"
>
> "(c) "fixation" means the embodiment of sounds, or of the representations therof, from which they can be perceived, reproduced or communicated though a device;"
>
> "(d) "producer of a phonogram" means the person, or the legal entity, who or which takes the initiative and has the responsibility for the first fixation of the sounds of a performance or other sounds, or the representations of sounds;"
>
> "(f) "broadcasting" means the transmission by wireless means for public reception of sounds or of images and sounds or of the representations thereof; such transmission by satellite is also "broadcasting"; transmission of encrypted signals is "broadcasting" where the means for decrypting are provided to the public by the broadcasting organization or with its consent;"

It can be established from this article that related rights are closely connected to authorial works. For example, in order for a musical work to be sold on the market, it must be recorded.[76] According to Axhamn, related rights are somehow linked to artistic and literary works but attribute to those who communicate particular creations to the public in a distinct and valuable way through a performance, recording, or broadcast.[77] In addition, the rights holder must possess some human activity and should therefore be either a natural or legal person.[78] Recital (10) of the InfoSoc Directive states that creators of related rights have the right to be rewarded for their creation to manage and continue their work. This is because certain investments are required from performers to make a performance, as well as to record a phonogram.[79] According to van Eechoud and others, as a consequence, the

[74] van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*, pp. 34 and 51-52.

[75] Pila and Torremans*, European Intellectual Property Law,* p. 225, see also Recital (15) of Directive 2001/29/EC.

[76] van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*, pp. 37-38.

[77] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, p. 71.

[78] Ramalho, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan,* p. 34.

[79] Recital (10) of Directive 2001/29/EC.

only requirement for protecting subject matters under related rights is that a performance must have taken place and that a recording or transmission has been made.[80] Thus, the most significant difference between copyright and related rights is the thresholds required for protection. That is to say, there is no requirement for the performance, recording, or broadcast to be original, only that it is considered a subject matter of a related right.[81] For example, in the *Pelham* case from the CJEU, regarding the inclusion of a sample – approximately a 2-second rhythm sequence – from one phonogram into another phonogram. The question arose whether this constituted an infringement of the first phonogram.[82] The court held that a producer of a phonogram has the exclusive right to use the phonogram in his interest and can prevent third parties from copying samples from his phonogram.[83] However, if a sample taken from an existing phonogram is modified to the extent "the sample is unrecognisable to the ear" in the new creation, it does not constitute infringement.[84] Thus, a creator cannot freely copy and use the rights of other rights holders, as this would constitute infringement.

## 2.5 Conclusion

This chapter has examined the subsistence of protection for copyright and related rights and presented how EU law is connected to international conventions. To obtain copyright protection in the meaning of the InfoSoc Directive, the work must be an expression of either literary or artistic nature. In addition, the expression must possess originality and creativity to the extent it constitutes a human “author’s own intellectual creation”. Moreover, the associated rights belong to the author of the work. On the other hand, there are no similar requirements on originality to obtain protection for related rights. Protection of a related right will arise as a consequence of making a creation covered by one of the subject matters, and the rights conferred will be designated the person who makes the investments in making it available to the public. The following two chapters constitute the main body of this thesis as they examine whether an AI-generated output can be protected under the legal framework and to whom the rights should be designated.

[80] van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*, p. 185.
[81] Ibid.
[82] Case C-476/17 *Pelham* [2019] ECLI:EU:C:2019:624 paras. 2 and 16. [cit: Case C-476/17 *Pelham*].
[83] Ibid., para. 39.
[84] Ibid., para. 36.

# 3 Protecting AI-generated outputs under copyright law?

## 3.1 Introduction

This chapter will first attempt to define generative AI. This is relevant to understand in what way an AI-generated output could be compared to a protectable work under EU copyright law. Furthermore, the function of AI systems as tools in the creative process is considered, leading to a discussion on whether an AI-generated output can be considered to meet the requirements for copyright protection. The chapter addresses this from two different angles regarding who should be designated the rights holder – the person who entered the prompts, i.e., the user, or the developer of the AI system. However, there are different opinions regarding whether AI-generated outputs can be protected and who should be designated the authorship.

## 3.2 An attempt at defining generative AI

Generative AI, or 'genAI' is a technical term, thus not a legal term.[85] García- Peñalvo and Vázquez-Ingelmo explain that genAI is a collection of technologies that can be used to produce and create novel content such as text, images, and audio, also called output. The output depends on the input data the AI algorithms are fed to be trained.[86] This is called machine learning which is a type of AI technology that enables a system to learn and develop without being programmed in a specific way.[87] Thus, AI systems can take different forms and consist entirely of software or being integrated into hardware.[88] AI systems can bring advantages, such as educational methods. On the other hand, the disadvantages are tangible. Problems with genAI arise not only in terms of ethical aspects but also in terms of potential job losses and negative aspects for the society that has not kept up with this drastic development.[89] From a copyright perspective, AI-generated outputs threaten to outcompete writers, musicians, and performers. Moreover, the fact that AI systems have the capacity to generate "novel" content assembles uncertainties in whether the output is of such a nature that it is sufficient to be protected under copyright law.[90] The definition of AI is not entirely determined, which has consequences of further ambiguities regarding the extent to which AI-based systems generate the output independently or how great the need for human control is.[91] Girasa explains that difficulties arise in assessing the

[85] García-Peñalvo and Vázquez-Ingelmo, *What Do We Mean By GenAI? A Systematic Mapping of The Evolution, Trends, and Techniques Involved in Generative AI,* pp. 7-8.

[86] Ibid.

[87] Miclet, Laurent., Bayoudh, Sabri. and Delhey, Arnaud., *Analogical Dissimilarity: Definition, Algorithms and Two Experiments in Machine Learning,* Vol. 32, 2008-08-21, pp. 1-2, [cit: Miclet, et al., *Analogical Dissimilarity: Definition, Algorithms and Two Experiments in Machine Learning*].

[88] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, pp. 36-37.

[89] García-Peñalvo and Vázquez-Ingelmo, *What Do We Mean By GenAI? A Systematic Mapping of The Evolution, Trends, and Techniques Involved in Generative AI,* p. 8.

[90] Ibid.

[91] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, pp. 38-39.

authorship of an AI-generated creation based on this uncertainty.[92] Axhamn shares this opinion and explains that depending on how an AI system is developed, the authorship might be assigned to different actors.[93] For example, whether the AI system generates the output independently, whether the user of the system controls the output, or whether the developers of the system developed the system in a way that makes the output predictable.[94]

## 3.3 AI-generated output and copyright protection

A project named 'The Next Rembrandt' is an example of how genAI can be used to create a new expression based on existing works. The project aimed to generate a new portrait of Rembrandt Harmenszoon van Rijn, utilizing AI technology.[95] The system was fed with thousands of Rembrandt artworks that generated a final output constituting a portrait embodying the distinctive craft and techniques of the artist. Even though the artist passed away over 300 years ago, the AI system succeeded in producing a portrait that Rembrandt himself could have painted.[96] Google's Project Magenta is another example of how AI technology can be used in the creative process.[97] The project aims to investigate AI's impact when used as a tool in the creative process to increase human creativity. The project offers creators different AI-based tools, such as 'Magenta Studio' to generate music or 'Sketch RNN' to make sketches.[98] These projects indicate that using AI as a tool means less human control in the final creation. However, it has been considered in chapter two that copyright protection cannot exist without a human author.[99] Therefore, according to several legal scholars, the AI system itself cannot be designated as the author.[100] Neither can, according to Hugenholtz and Quintais, an output generated wholly by AI be protected under copyright law due to the absence of human intellectual effort.[101] In what way human creativity can be shown in the process of using AI as a tool, and what impact this has on the emergence of a protectable subject matter will be examined under future subheadings.

### 3.3.1 The user of an AI system

According to some scholars, the user of an AI system could potentially receive copyright protection for an AI-generated creation as a result of showing sufficient

[92] Girasa, Rosario, *Artificial Intelligence as a Disruptive Technology – Economic Transformation and Government Regulation,* Springer, 2020, p. 227.

[93] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, pp. 80-81.

[94] Ibid.

[95] VML, *The Next Rembrandt,* Available at: https://www.vml.com/work/next-rembrandt (accessed 5 April 2024).

[96] Ibid.

[97] Magenta, *Make Music and Art Using Machine Learning,* Available at: https://magenta.tensorflow.org (accessed 5 April 2024).

[98] Ibid.

[99] Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?* p. 1194, and Guadamuz, *Artificial Intelligence and Copyright.*

[100] See Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, p. 71, and Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?* p. 1208-1209.

[101] Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?* p. 1196.

human interaction based on entering detailed prompts.[102] The CJEU has not yet tried a case concerning whether AI-generated output can be protectable and, in that case, who should be considered the author. However, the issue has been touched upon more closely in China.[103] In addition, the United States has published guidelines for how such creations should be assessed.[104] As mentioned earlier, case law and guidelines from jurisdictions outside the EU do not have precedential value for how the EU will assess the matter in the future. However, considering that the EU, China, and the United States are contracting parties of the WIPO Copyright Treaties, they share a common core at an international level.[105] Therefore, the interpretation made by the jurisdictions can be of interest in gaining an understanding of how the CJEU could potentially interpret AI-generated outputs in the light of copyright protection in the future.

In 2023, the Beijing Internet Court raised a case about whether an AI-generated image could get copyright protection and who was entitled to obtain authorship.[106] The circumstances of the case were as follows: the plaintiff generated the image by entering several prompts into an AI system called Stable Diffusion and published the final result on the Internet. The image was later copied and used by the defendant on another platform. The plaintiff considered himself to be the author, and the image to be copyright-protected, and therefore, the defendant to be infringing on his copyright by using the image without permission. Consequently, the court ruled that AI-generated content is eligible for copyright protection. This was because the person entering the prompts did so in a sufficiently intellectual manner that the person controlled the final output to the extent it showed personality and could not be considered a "mechanical intellectual achievement".[107] In its argumentation, the court made an interesting comparison with creators' possibilities in the past. For example, that there were minimized opportunities to create artistic works before the camera was invented. For instance, an artist who paints needs to have remarkable skills to do that. However, this changed as photographs were considered a subject matter for copyright protection and the camera could then be used as a tool for creating. In the same way, the court considered that an AI system can be used as a tool to create as long as the outcome expresses originality and the personality of the author.[108] The argument made by the court that new technology has, for a long time resulted in less human investment, is considerable. It reflects the need for how today's legislation requires an adaptation in the same way that was required when the photography could receive copyright protection. An example of how new technology can be incorporated, is the guidelines published by the United States Copyright Office. They provide guidance on how an AI-generated output should be

[102] Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?* p. 1208, and Ramalho, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan,* pp. 28-30.

[103] Beijing Internet Court Civil Judgement (2023), *Jing 0491 Min Chu No. 11279.*

[104] United States Copyright Office, *Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence,* Vol. 88, No. 51, 2023-03-16, p. 4, [cit: United States Copyright Office, *Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence*].

[105] WIPO, *Contracting Parties or Signatories to Treaties Administered by WIPO,* 2019-04-19, pp. 10, 13 and 37, Available at: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_423.pdf (accessed 27 April 2024).

[106] Beijing Internet Court Civil Judgement (2023), *Jing 0491 Min Chu No. 11279.*

[107] Ibid.

[108] Ibid.

interpreted in relation to copyrighted work.[109] Traditional U.S. Copyright law states that only the work of a human author can be protected by copyright protection.[110] Consequently, the guidelines state that "a human may select or arrange AI-generated material in a sufficiently creative way that the resulting work as a whole constitutes an original work of authorship".[111] However, the guidelines states; with the limitation that the protection only covers what can be linked to the human creation and not to the AI-generated content itself.[112]

The interpretation and argumentation from both jurisdictions are interesting in connection to EU law. For example, according to the Beijing Internet Court, for copyright protection to arise, it is sufficient that the person who enters the prompts does so in a way that shows originality and creativity and results in an intellectual investment.[113] These requirements are similar to what has been established by the CJEU (see chapter two).[114] Furthermore, the requirement for human activity that is expressed in the U.S. Copyright Office guidelines can also be compared to the requirement of human intellectual effort recognised under EU law.[115] Consequently, since there are no restrictions within EU copyright law saying that a work generated by AI, when used as a tool, cannot be eligible for protection. An assumption is made that the only thing that should matter when obtaining copyright protection is whether the AI-generated output is considered a 'work' under traditional EU copyright law. According to Hugenholtz and Quintais, this can be determined by taking a four-step test. The AI-generated output must constitute an (1) expression (2) of literary or artistic domain, that is (3) original and creative in a manner that shows the 'author's own intellectual creation', and (4) is the result of sufficient human control.[116] This assessment should be made on a case-by-case basis.[117] In conclusion, it should be established that an AI-generated output could be protected under EU copyright law. However, with the limitation that the output must meet all the requirements set under traditional copyright law and that a human author can be designated.

Whether the user of an AI system can meet these requirements and hold authorship can be examined in the light of the *Painer* case. In the case, the CJEU established that a photographer can show creativity in three different phases when taking a photograph.[118] A photograph is taken using a camera as a tool. Hence, a comparison can be made to AI-generated creations since AI systems are used as tools in the creative process. The court stated that creativity from the photographer can be exercised in the "[…] preparation phase, the photographer can choose the

[109] United States Copyright Office, *Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence,* p. 4.
[110] United States Copyright Office Review Board, *Decision Affirming Refusal to Register A Recent Entrance to Paradise,* 2022, p. 2.
[111] United States Copyright Office, *Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence,* p. 4.
[112] Ibid.
[113] Beijing Internet Court Civil Judgement (2023), *Jing 0491 Min Chu No. 11279.*
[114] See for example, Case C-145/10 *Painer*, paras. 88-89.
[115] See for example, Case C-5/08 *Infopaq*, para. 45.
[116] Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?* p. 1200.
[117] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, p. 76.
[118] Case C-145/10 *Painer*, para. 91.

background, the subject's pose and the lighting. When taking a portrait photograph, he can choose the framing, the angle of view and the atmosphere created. Finally, when selecting the snapshot, the photographer may choose from a variety of developing techniques […]".[119] According to several scholars, the creativity of processing an AI-generated output can be shown in the preparation phase by entering the prompts, and in the final phase by modifying the final output to the extent it meets the requirements for originality.[120] On the other hand, it has been argued that creativity is considered more difficult to be shown in phase two, that is, when AI generates the output, implying that the human control is decreased.[121] In this phase, it is uncertain to what extent the user can control and predict the output, which can be referred to as the 'black box problem'.[122] According to Rudin and Radin, AI systems can be based on machine learning to the degree that it enables the AI system to function like the human brain. In that case it is impossible to trace the final output back to the human intellect, hence the definition of a black box.[123] Thus, as previously mentioned, Axhamn argues that depending on how the AI system is developed, the output can be predicted to different extents.[124] However, according to Hugenholtz and Quintais, this does not have to be decisive if the user shows sufficient creativity and originality in the first and third phases.[125] In conclusion, the user of an AI system could create a copyrightable work when using AI as a tool. However, this requires that the output is considered a 'work' under copyright law, that creativity and originality are shown by entering detailed prompts, and that the author modifies the generated output into his own creation. On the other hand, according to Axhamn, if the AI independently generates the final output, this will most likely not constitute a protectable subject matter as it will not be attributed to an author.[126]

### 3.3.2 Developers of the AI system

Another potential author of AI-generated output is the developers of the AI system.[127] Regarding the AI developers' claim for authorship, there is no question of using AI as a tool. Instead, it is a question of whether the development of the AI system is a sufficient basis for copyright protection to arise for the outputs generated by the system.[128] There are no rulings from the CJEU regarding this, nor is there any guidance to be found in the directives. However, the CJEU has is the case *Football Dataco and others*, considered whether the effort and skills developers invest when

[119] Case C-145/10 *Painer*, para. 91.

[120] Ramalho, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan,* p. 28. and Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?* pp. 1202-1203.

[121] Ibid.

[122] Rudin, Cynthia. And Radin, Joanna., *Why Are We Using Black Box Models in AI When We Don't Need To? A Lesson From an Explainable AI Competition.,* Harvard Data Science Review, 2019-11-22, Available at https://hdsr.mitpress.mit.edu/pub/f9kuryi8/release/8 (accessed 2 May 2024).

[123] Ibid.

[124] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, p. 81.

[125] Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?* p. 1205, and see Case C-145/10 *Painer*, para. 91.

[126] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, p. 66.

[127] Guadamuz, *Artificial Intelligence and Copyright.*

[128] Ramalho, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan,* p. 56.

developing a database could be sufficient to obtain copyright protection. The court responded negatively to this question.[129] This statement can provide guidance in interpreting the connection between an AI system and the generated output. It could be perceived that the effort and skills invested by the developers when creating the AI system are not sufficient for the output to be considered a protectable subject matter. The output itself is still required to constitute a 'work'.[130] Furthermore, a case from the US Court can also provide guidance in this assessment. In the case *Rearden LLC v. Walt Disney Co*. from 2018, the court ruled in favor of the developer of a "capture program" based on an algorithm that could reproduce images.[131] However, the program was not controlled by an algorithm based on machine learning with the possibility of making its own decisions, which means that the program cannot be completely compared to an AI system. The court argued that the output was sufficiently based on the creative contribution of the developer of the program to be copyright-protected. This case indicates that the developer of a similar system to AI, is a considerable author of a generated output.[132] On the other hand, in the previously presented case from the Beijing Internet Court, the court argued that the developer of the AI system should not be entitled as the author.[133] This was because the developer lacked insight and influence in the generative process. The Beijing Internet Court highlighted that creativity can only be expressed in the process of developing the AI system but not when the system generates the output.[134]

As previously mentioned, an AI system can take different forms, meaning that one system might be based entirely on machine learning where AI learns to make its own decisions. In comparison, another system might be programmed in a way that makes it possible for the developers to control the output to a certain extent.[135] According to Axhamn, if the developers can control and limit the user's possibilities in generating an output and thus predict how the final output will be designed, the authorship should belong to the developers. In that case, it does not matter how detailed the user's prompts are.[136] In the same way, it can be argued that if the developers cannot predict how the AI system develops due to machine learning, their control over the final output is non-existent. In that case the developer cannot be considered an author.[137] Similarly, Hugenholtz and Quintais argue that if the user only "pushing buttons", the developer is the only potential actor to obtain authorship.[138] Consequently, a conclusion can be drawn that designating the authorship to the developers of the AI system depends on the design of the AI system and whether the output can be considered to constitute a 'work'. On the other hand,

[129] Case C-604/10 *Football Dataco and Others* [2012] ECLI:EU:C:2012:115, para. 46. [cit Case C-604/10 *Football Dataco and Others*].

[130] Cf. Case C-604/10 *Football Dataco and Others* para. 46.

[131] Rearden LLC v. Walt Disney Co., 293 F. Supp. 3d 963 (N.D. Cal. 2018).

[132] Ibid.

[133] Beijing Internet Court, *Jing 0491 Min Chu No. 11279 (2023).*

[134] Ibid.

[135] Miclet, et al., *Analogical Dissimilarity: Definition, Algorithms and Two Experiments in Machine Learning,* pp. 1-2.

[136] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, p. 81.

[137] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, p. 81 and Miclet, et al. *Analogical Dissimilarity: Definition, Algorithms and Two Experiments in Machine Learning,* pp. 1-2.

[138] Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?* P. 1208.

according to Ramalho, it should be considered whether the development of an AI system and the final output can be connected at all.[139] Arguments against the developer of the AI system being eligible for authorship can potentially be compared to the fact that the inventor of the camera cannot be considered the author of all photographs generated from that camera. This depends on the fact that the inventor is not expressing any originality or creativity when the picture is taken. Similarly, the creators of Photoshop do not obtain copyright to works that are drawn on a computer using the program.[140] Hugenholtz and Quintais highlight the commercial problems in relation to such claims: Who would want to use a program where the developers obtain the rights for a creation made by the user?[141]

Consequently, a developer of an AI system should be able to claim authorship of an AI-generated output if the output constitutes a 'work' in the meaning of copyright law. This can occur if the AI system is developed in a way that allows the developers to anticipate the design of the output and thereby express creativity and originality in the generating process. However, this could be difficult to argue when the user contributes to the generative process. In such a situation, another potential attribution of authorship is to designate joint authorship between the developer and the user. That is, if both the developer and the user contribute to creating a protectable output.[142] Consequently, the assessment must be made on a case-by-case basis, i.e., on the individual case.[143]

## 3.4 Conclusions

This chapter has established that EU copyright law can protect AI-generated outputs if the output can be considered a 'work'. On the other hand, a complexity has been demonstrated regarding to what extent an output is entitled to meet the requirements of being a protectable subject matter. This is mainly due to the lack of human control, which results in uncertainty about who can claim authorship. One finding is that when AI is used as a tool in the creative process, the output could be considered protectable. Furthermore, in that case, authorship could be assigned to the user who shows creativity and originality by entering detailed prompts and modifies the generated output into his own creation. On the other hand, if AI independently generates a work, the user does not contribute to the creative process, and the developer cannot control the generative process, copyright protection cannot arise because there is no author of the work. Another finding is that developers of AI systems could possibly obtain copyright protection under certain circumstances. However, this assessment is more difficult as a relevant connection between the development of the AI system and the final output must be clarified. Creators in today's society are exposed to several sources of inspiration and tools that can be

[139] Ramalho, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan,* p. 56.
[140] Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?* p. 1209.
[141] Ibid.
[142] Hugenholtz and Quintais, *Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?* p. 1209. See also Article 1(2) of the Term-Directive.
[143] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, p. 73.

used in the creative process. Therefore, it should be made clear in which situations and from what systems a developer can claim authorship. Most likely, the user of an AI system has no idea how the system is developed and how much the developers can control the output, and thereby claim authorship. This could lead to disputes between the user and the developer, regarding difficulties in the designation of authorship. Consequently, the final conclusion is that it might be considered inappropriate to protect AI-generated outputs under copyright law, as it will face several challenges both when it comes to meeting the requirements of being a protectable work, but also when it comes to designating authorship. However, a potential solution could be to protect the output as a related right. This will be examined in the next chapter.

# 4 Protecting AI-generated outputs as related rights?

## 4.1 Introduction

This chapter will examine whether an AI-generated output could be protected as a related right, which is an alternative solution to protecting AI-generated outputs under copyright law. Protecting such an output under the legal framework of related rights could be considered more appropriate since there are no thresholds.[144] This will first be assessed in terms of the existing categories of related rights expressed in the InfoSoc Directive. Furthermore, in the same way, the categories of right holders expressed in the directive will be evaluated in whether the user or developer of an AI system can be considered as such. In addition, the possibility and need to create a new category attributing to AI-generated content are discussed.

## 4.2 AI-generated output and protection of related rights

Related rights are neighboring to literary and artistic works but protect subject matters outside this scope.[145] The emergence of related rights arose due to the technological development and aimed to protect the investments made by performers, producers, and broadcasting organisations. [146] Furthermore, to ensure that no actors are free-riding on the investments made by the creator of a related right.[147] Ramalho explains that the rights holder of a related right must be either a natural or legal person, meaning that an AI system itself cannot obtain any rights. Consequently, protection can only arise if the AI system is used as a tool in the creative process.[148] In contrast to what was assessed in the previous chapter on copyright protection, there are no requirements for the creator of a related rights to fulfill "authorial creativity" or possess originality.[149] Thus, the most significant difference between copyright and related rights is the thresholds required for protection.[150] Consequently, the prerequisite for protecting an AI-generated output is if it can be considered a subject matter under one of the existing categories of related rights and have an economic value.[151] Hence, there is no requirement that the subject matter must be linked to an author nor for the investment to amount to a determined number.[152] In order to assess whether related rights can protect an AI-

[144] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, pp. 70-71.

[145] Ramalho, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan,* p. 33.

[146] van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*, pp. 187 and 190. See also Recital (10) of Directive 2001/29/EC.

[147] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, p. 71.

[148] Ramalho, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan,* p. 33.

[149] Ibid.

[150] van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*, p. 185.

[151] Ibid.

[152] Ramalho, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan,* p. 33.

generated output, the protectable subject matters according to the InfoSoc Directive should be examined.

### 4.2.1 Performance or broadcast

According to Article 3(2)(a) of the InfoSoc Directive a protectable subject matter is the 'fixation of the performance', and the rights holder is the performer. The performer is provided with an exclusive right to prohibit third parties from making the protectable subject matter available to the public.[153] In the case *Circul Globus Bucureşti* from the CJEU, the court examined the difference between a live performance and the exclusive right of communication to the public. The court concluded that "any activity which does not involve a 'transmission' or a 'retransmission' of a work, such as live presentations or performances of a work" is not covered by the exclusive right.[154] Consequently, Recital (23) of the InfoSoc Directive should be interpreted as it is not the performance as such that constitutes the subject matter. It is the performance once it has been fixed by either a 'transmission' or a 'retransmission', which is a prerequisite for communicating the performance in the first place.[155] It should be questioned whether an AI-generated output can take such a form, which is unclear and difficult to determine. However, as mentioned, the rights conferred are designated to the performer. Guidance on who is covered by the definition a 'performer' can be obtained from Article 2 of the WPPT. It states that a 'performer' refers to someone who makes a performance such as acting, dancing, or singing. Most likely, neither the developer nor the user of an AI system will be considered a performer based on the aforementioned definition. Consequently, an AI-generated output is likely not to be protected under this category, nor rights to accrue to the user or the developer of the AI system.

Article 3(2)(d) of the InfoSoc Directive states that 'fixations of a broadcast' is a protectable subject matter, and that the rights holder of such right is the broadcasting organisation. Similarly to what was mentioned concerning performances, Recital (23) of the InfoSoc Directive also applies to broadcasting. Consequently, only the "transmission" and "retransmission" of the broadcast can be protected regardless of whether it is done by wire or over air, but not the broadcast as such.[156] In the case *ITV Broadcasting Ltd* from the CJEU, the court examined whether retransmitting a broadcast live over the internet by a third party could constitute communication to the public according to the InfoSoc Directive. The court established that this is possible under certain conditions.[157] For example, a live transmission on YouTube while creating something using ChatGPT, could potentially be considered a 'transmission' covered by the InfoSoc Directive.[158] Since protection only arises for the transmission and not for the actual content of the broadcasting, it should not matter if AI is used to create content.[159] However, it seems unlikely that an AI-

[153] See Article 3 of Directive 2001/29/EC.
[154] Case C-283/10 *Circul Globus Bucureşti* [2011] ECLI:EU:C:2011:772, paras. 39 and 40.
[155] van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*, p. 82.
[156] Recital (23) of Directive 2001/29/EC.
[157] Case C-607/11 *ITV Broadcastong Ltd* [2013] ECLI:EU:C:2013:147, para. 40.
[158] See also van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*, p. 46.
[159] van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*, p. 46.

generated output would take the form of a 'transmission' or ‘retransmission of a broadcast. Furthermore, it seems unlikely that the developer or user of an AI system is considered a broadcasting organisation in that sense, and to be obtaining exclusive rights due to the investments in communicating the transmission to the public.[160] In summary, an AI-generated output is likely not to be protected under this category, nor rights to accrue to the user or the developer of the AI system.

### 4.2.2 Phonogram or the first fixations of films

Article 3(2)(b) of the InfoSoc Directive states that ‘phonograms’ are protectable subject matters under EU law, and that the rights belong to the producer. In the case *Pelham* from the CJEU, the court stated that phonograms constitute of sound recordings.[161] Furthermore, suppose a producer uses existing samples from another work or phonogram. In that case, this must be modified to the extent that "the sample is unrecognisable to the ear" for the recording to constitute a protectable subject matter and not infringe upon others’ rights.[162] The protection of a phonogram is attributed to the producer of the phonogram, which is the person who makes the investments in making the recording or fixation.[163] According to van Eechoud and others, there are divided opinions about what can constitute an investment in that sense. Some interpret investments as the actual costs, i.e., equipment and salaries. In contrast, others make a wider interpretation when it comes to the effort and time spent in making the phonogram.[164] Whether AI-generated outputs could be protected as a phonogram has been discussed by legal scholars. According to Ramalho, one could argue that AI-generated output can be considered a protectable subject matter as a related right, but with the limitation that the AI has only been used as a tool in the process.[165] Furthermore, Axhamn has established that, according to Swedish Copyright law, it is possible to obtain protection for a recording of a performance that involves AI.[166] Nevertheless, whether an AI-generated output can constitute a sound recording is unclear. It raises questions such as whether a sound recording can be created at all without a microphone. This situation could potentially be compared to how a DJ works. A DJ remixes and adapts existing sounds in the systems they work in, creating a sound recording without having to record the sounds himself. Therefore, an AI system could potentially create a sound recording and be considered a phonogram, as long as the existing sounds used in the process, are modified to the extent it "is unrecognisable to the ear".[167] Axhamn states that, if an AI-generated output constitutes a protectable subject matter, the developer of the AI system is likely the one who is considered to be the producer of the sound recording; this is due to the investments made in the creation and training of the AI system.[168]

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[160] Ramalho, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan,* p. 33.

[161] Case C-476/17 *Pelham*, para. 21.

[162] Case C-476/17 *Pelham*, paras. 36 and 39.

[163] van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*, pp. 190-192, see also Recital 5 of Directive 2006/115/EC.

[164] van Eechoud, et. al., *Harmonising European Copyright Law: The Challenges of Better Lawmaking*, p. 192.

[165] Ramalho, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan,* p. 33.

[166] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, p. 71.

[167] Case C-476/17 *Pelham*, para. 39.

[168] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, p. 72.

Furthermore, Article 3(2)(c) of the InfoSoc Directive regulates the subject matter of 'first fixation of films', and states that the producer of such right is the rights holder. According to Article 2(1)(c) of the Rental and Lending Rights Directive, the definition of 'film' should be interpreted as "a cinematographic or audiovisual work or moving images, whether or not accompanied by sound".[169] Ramalho argues that an AI-generated output could be protected under this subject matter. Such output could be a film recording generated with AI as a tool, for example, drone footage. However, in that case the rights probably accrue to the person using the drone, for its investment in recording the footage.[170]

Consequently, AI-generated outputs could potentially be protected as a phonogram or as the first fixation of films if the output meets the requirements for being a subject matter. Furthermore, both the developer of the AI system and the user could be considered a 'producer' of such subject matter, depending on who made the investments in creating the recording of either sound or visual images.[171]

### 4.2.3 Creating a new related right?

It has been established that a certain complexity is involved in protecting AI-generated outputs, as the output must fit into one of the existing subject matters to be protected as such. According to Hugenholtz, the absence of thresholds could result in overprotection of the subject matters protected under related rights.[172] Is this really what is wanted in terms of protecting AI-generated outputs, given the threat of AI outcompeting human creativity? Axhamn presents the possibility to create a new category of related rights and argues that this is the most appropriate measure in adapting current law to the technological development. This would also imply that AI-generated outputs will not be protected under copyright law but be considered neighboring.[173] This would result in less legal uncertainty and reduce potential gaps in protecting AI-generated outputs, which can be considered desirable. However, it should be questioned whether the protection of such outputs should be covered by some thresholds so that these are not overprotected. For example, is it reasonable that an AI-generated output should be protected for as long as 50 or 70 years? Furthermore, there might be a need for a requirement on sufficient contribution when making the investments. Otherwise, any output generated by using AI as a tool in the creative process, could potentially receive protection. I believe that legislators must be careful in the creation of such a category and that there is a need for stricter requirements for protection to ensure that human creativity is not outcompeted.

## 4.3 Conclusions

This chapter has established that AI-generated outputs could be protected as related rights, and in that case, most likely as either a phonogram or as the first fixation of

[169] Article 2(1)(c) of the Rental and Lending Rights Directive.

[170] Ramalho, *Intellectual Property Protection For AI-Generated Creations – Europe, The United States, Australia and Japan,* pp. 33-34.

[171] See Recital (10) of Directive 2001/29/EC.

[172] Hugenholtz, P. Bernt., *Neighbouring Rights are Obsolete,* Vol. 60, 2019-08-31, Springer. p. 1009.

[173] Axhamn, *Copyright and Artificial Intelligence – with a focus on the area of music*, p. 84.

films. This is because the protectable subject matters according to these two categories probably correspond best to the form an AI-generated output can take, i.e., a recoding. Moreover, the developer and user of an AI system could potentially be considered a producer in the meaning of the InfoSoc Directive as they can be considered to make significant investments in the creation of a recording. For example, the developer when training the AI model to generates a sound recording. Since related rights are not covered by any thresholds, it can be considered more appropriate and feasible to protect AI-generated outputs as such and not under copyright law. However, there could be necessary to create a new category attributed to AI-generated outputs to control the protection of such creations and to reduce the threat of AI outcompeting human creativity.

# 5 Conclusions

This thesis has examined to what extent an AI-generated output is considered a protectable subject matter under EU law and especially the InfoSoc Directive. This has been investigated regarding both copyright law and the protection of related rights. In addition, potential rights holders have been assessed for when AI-generated outputs are considered protectable subject matters. The uncertainty has arisen partly due to copyright being strongly associated with requirements for originality, human creativity, and designating authorship of the work. Therefore, whether an AI-generated output can meet the requirements for copyright protection and whether the AI system's user or developer can obtain authorship have been examined. This has been done by interpreting the legal text, case law, and legal scholarship. One conclusion is that if AI independently generates an output, the human control is so minimal that the output cannot constitute a protectable subject matter. Consequently, the generated output can only be protected if AI is used as a tool, and the rights must be assigned to a human being and not to the AI system as such. For example, a user of an AI system can show creativity when entering detailed prompts and modifying the final generated output into his own creation. Provided that the output constitutes a 'work' in the meaning of copyright, this has been considered sufficient for the user to claim authorship, and the output to be protectable. In addition, it was examined whether the developer of the AI system can create copyrightable works by developing a system generating outputs. Conclusions were drawn that this is possible if the output constitutes a 'work', which can occur if the system is developed in a way that allows the developers to anticipate the design of the output and thereby be considered to express creativity and originality in the generating process. In that case, the developer of the system could claim authorship. In summary, AI-generated outputs can be protected by EU copyright law under certain conditions, but only if there is a human author of the output. On the other hand, it is probably challenging to meet the requirements for obtaining copyright protection. Therefore, the possibility of protecting AI-generated outputs as related rights was further examined.

As related rights are not subject to any thresholds, it can be argued to be more appropriate to protect an AI-generated output under this legal framework. The only requirement for protection to arise is that the output is considered a protectable subject matter under one of the existing categories in the InfoSoc Directive. However, one conclusion is that, if AI-generated output is to be protected as related rights, this will most likely be done as phonograms or the first fixation of films. This was because those two categories probably correspond best to the form an AI-generated output takes, more precisely as a recording. Furthermore, the person who obtains the rights must be either a natural or legal person and is the one who makes the investments in making the recording and is communicating it to the public. Hence, both a user and a developer of an AI system could be designated the rights holder as producer, but not AI as such.

I believe that AI-generated outputs should be protectable, but there must be more precise requirements for such protection. If there are no requirements for protecting AI-generated outputs, there is a risk that the use of AI will increase uncontrollably. This is because we live in a society where using AI as a tool will probably increase extensively in future creative processes. However, I believe it is essential to cherish and protect human creativity, and to maintain a traditional approach to copyright. Therefore, I suggest that AI should not be protected under copyright law but rather as a related right. Furthermore, I think that creating a new category of related rights attributing to AI-generated creations is a good solution. This is because AI-generated outputs can take different forms, not only as recordings, and that there is potentially a need to incorporate stricter protection for such creations. This is to avoid the risk of AI outcompeting human creation and the risk of overprotecting AI-generated creations. Given that this thesis had a very narrow focus, not all the complexities concerning AI and copyright has been mentioned. For example, whether the works on which the AI system has been trained have their own interest in the AI output, and to what extent it is permitted to develop AI systems under relevant exceptions for authorship. Consequently, the relationship between AI and copyright is far from certain and will form the basis of many future debates and attempts to determine the applicable law.

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