

Copyright protection of the AI-generated works: Who owns AI-generated works? Can AI be an author? The EU and the UK approach.

by Rafiga Malikova

LLM Capstone / Final Thesis SUPERVISOR: Professor Maria José Schmidt-Kessen

Central European University Private University Quellenstrasse 51-55, 1100 Vienna Austria

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Abstract

The rise of artificial intelligence surpassed human expectations and consciousness in different ways. Even if we imagined artificial intelligence as a potential conqueror and threat to human existence during previous decades, now we have reached the new decade in which it comes as a creator and, of course, challenges how intellectual property law was regulated till now. Today AI programs are trained to produce paintings, photos, music, recordings, and even an academic paper in a limited time by using a myriad of sources belonging to original creators, who spent hours, even their entire life, to possess this ability or way of thinking. From DALL-E to Stability AI. AI can make realistic edits to existing images from a natural language caption. Also, the Google-owned artificial intelligence company Deep Mind has created software that can generate music by listening to recordings.¹ Several months ago, fully AI-generated films were introduced during the First Annual AI Film Festival, of which the aim is to celebrate and showcase art and artists who are pushing the boundaries of AI filmmaking, achieving what was once considered impossible.²

From 2022, Chat GPT can write poems, novels, and even blog content which many people would not believe a machine has created them. Despite huge interest towards these newly invented programs, it creates a huge dilemma and raises a novel issue concerning the legal status of AI-generated works. Are they copyrightable? Who should own them? Considering that AI uses a significant amount of the existing data to produce new works/data, does it fulfil the originality/creativity requirement? In the case of recognition of copyright protection of AI-produced works, can these rights belong to non-human persons, specifically to AI itself? What is required for AI to be considered an author? Does this approach respond to the goals of copyright law?

Another dilemma comes from the ethical point of view regarding millions of copyrighted subject matter infringed by AI while generating new "works". Recently, the announcement of Stability AI has caused protests and lawsuits by artists who are against the violation of their intellectual property rights by AI programs. The root of this confusion stems from the fact that the AI-based art generator still needs millions of pieces of data, including original artworks of the artists who did not allow their works to be used and make a profit by the owners of the Stability AI platform. Therefore, ethical aspects of AI training would have a possible effect on answering whether AI-produced works are/should be protected by copyright law. However, they lie outside the questions asked in this thesis.

¹ WIPO Magazine, Issue 5/2017 (October), page 17.

² See the website: https://aiff.runwayml.com/#about

It is not surprising that a large amount of global revenue comes from the outcome of AI-generated works.³ This is the reason why most scholars, governmental authorities, universities, and individuals commenced to consider the future of the technological improvements related to AI and try to find a way to address different interest groups, such as start-ups, technology leaders and as well as programmers in terms of granting copyright protection to the works mentioned. It is unsurprising that Elon Musk recently announced making an effort to build a new AI-based start-up company to compete with OpenAI in developing AI generative systems.⁴

³ See the website: https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier#introduction

⁴ Financial Times, https://www.ft.com/content/2a96995b-c799-4281-8b60-b235e84aefe4, (last access 18 April 2023)

1.1.Introduction

The European Union has made significant efforts over the past years to be in a world-leading position towards AI-related research and initiatives. Recently, the European Commission was called to support a horizontal, evidence-based and technologically neutral approach to common, uniform copyright provisions applicable to AI-generated works and to stress the key importance of balanced IP protection in relation to AI technologies in the Union.⁵ However, no legislative acts related to copyright, including the Berne Convention for the Protection of Literary and Artistic Works, TRIPS Agreement and WIPO Internet Treaties, do not explicitly provide any provision concerning the copyrightability of AI-generated works.

This thesis aims to determine whether AI-generated output is/should be protected under European and UK copyright law and, if so, how its authorship should be defined. Additionally, I will deeply explore the threshold for the copyrightability of AI-generated works, the extent of artificial autonomy required for recognizing them, and authorship and ownership alternatives of AI-produced works. Before answering these questions, there is a need to explore whether AI has a legal personality and why it is necessary from the copyright perspective. By conferring legal personality upon AI entities, there is a possibility of allocating specific rights and responsibilities to them, which may include the ability to hold copyrights and enforce them through legal means. This legal framn1ework could provide clarity and establish a basis for determining the ownership and protection of AI-generated creative works, ensuring that they receive adequate copyright protection.

The meaning of computer-generated work is defined in some legislative acts⁶ as "the work which is generated by computer in circumstances where the author of the work is not an individual". In order to protect a work under copyright law, it needs to meet the requirements of subject matter, authorship, originality and, in some jurisdictions, fixation. Therefore, the first issue will include the main copyright law requirement, subject matter, and examining whether works created by AI fall within the parameters of protected works at the EU and UK levels. The controversial part of this discussion remains at the root of the originality problem. What does originality mean? Can AI-produced output be considered original in the traditional copyright law concept? The central research question arises from this statement. Is there a need to determine a new originality concept for AI-produced works?

Most countries' case law (for example, Spain and Germany) does not directly recognize AIproduced work under copyright law unless it carries at least one aspect of originality, which should be the

⁵ European Parliament Report on intellectual property rights for the development of artificial intelligence technologies, A9-0176/2020, 02.10.2020.

⁶ UK Copyright, Design and Patents Act (CDPA) 1988, s. 178, New Zealand Copyright Act 1994, s2.

outcome of a powerful and intelligent mind. For example, in the Infopaq International case⁷, the European Court of Justice defined the term "intellectual creation" in two parts: expression of creative abilities and making free and creative choices by the author. At the EU level, AI programs that make autonomous decisions by learning their previous actions without human intervention obviously meet the second requirement to be considered an author. However, under the UK Copyright, Design and Patents Act⁸, it clearly indicates that "in the case of a computer-generated literary, dramatic, musical or artistic work, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken". In most jurisdictions, it is also clearly stated that the author should be a human being.⁹ However, I consider that taking into account the current advances in technology, differentiating joint authorship and autonomous authorship in terms of the degree of human intervention towards AI-generated works would change the approaches to determine the issue of ownership.

It should be noted that the UK is one of the leading countries which decided to take initiatives towards recognizing AI output as a copyrightable matter. The UK government has chosen to differentiate the copyright protection term of AI-generated works by reducing it to 50 years, compared to outputs created partly or wholly by a human. The same approach can be observed in New Zealand Copyright Act (1994) and Hong Cong Copyright Ordinance; however, this thesis will be based on the European and the UK approaches and inspired mostly by UK provisions, case law, and scholarly views. In that regard, investigating the recent case law and legislative updates concerning the UK model as a helpful approach deeply would allow me to contribute to both legal and innovative fields by suggesting different points of view. At least, the novel steps towards making amendments to the Berne Convention or changing the path in court decisions regarding the status of AI-generated works at the EU level should be taken into consideration.

Before pointing out the applicability of European Copyright Law to AI-generated works, we need to determine its main characteristics because they will affect copyright analysis in this thesis.

With the increasing prevalence of artificial intelligence (AI) in various industries, there has been a rise in the production of AI-generated work. AI-generated work can take many forms, including art, music, writing, and computer code. Even if, despite the growing importance of AI-generated work, there is still no widely accepted definition of this term, the European Commission specified in its communication that Artificial intelligence (AI) refers to systems that display intelligent behaviour by analyzing their

⁷ Infopaq International A/S v Danske Dagblades Forening, C-5/08, [2009] ECR I-06569, at I-6643.

⁸ UK Copyright, Design and Patents Act (CDPA) 1988, s. 9(3).

⁹ Case C-145/10, Painter, AG Trstenjak, [AG121], Council Directive 91/250/EEC, 2009/24/EC, Art 2(1), Feist Publications v Rural Telephone Service Company, Inc. 499 US 340 (1991).

environment and taking actions – with some degree of autonomy – to achieve specific goals.¹⁰ AI-based systems can be purely software-based, acting in the virtual world (e.g. voice assistants, image analysis software, search engines, speech and face recognition systems), or AI can be embedded in hardware devices (e.g. advanced robots, autonomous cars, drones or Internet of Things applications).¹¹ This thesis will mainly focus on software-based AI systems and their works. Specifically, this chapter aims to provide a comprehensive definition of AI-generated work, exploring its key characteristics, types, and elements.

From a structural perspective, four fundamental components of generative AI have been identified by scholars: Input, Learning algorithm, Trained algorithm and Output.¹² Input refers to the existing works of art that serve as the input data for training the system. The Input data can vary from a small, similar collection to tens of thousands of diverse works.¹³ The Learning Algorithm refers to the machine learning system that operates on the Input data. This can be a custom-built code, off-the-shelf software, or a combination of both.¹⁴ Trained Algorithm is the information generated by the Learning Algorithm during its operation on the Input data, along with instructions for converting that information into some form of work.¹⁵ Depending on the machine learning approach employed, this information may include recognizable elements from the Input data or be more abstract, like a series of concepts or decision points. The Output is a piece of work produced by executing the Trained Algorithm. The Output is frequently created from a starting point or "seed" given to the Trained Algorithm, but it can also be produced from random starting points, with or without limitations.¹⁶

Why are these components vital for our analysis? Because by utilizing this technological anatomy, it becomes feasible to tackle the complicated concerns related to the ownership and authorship of work produced by AI. Dividing a generative AI into these four components and exploring each element allow subjects to assert their rights in the elements that they are exclusively accountable for and have constructive discussions regarding the rest. For example, the Learning Algorithm could incorporate human input in the learning procedure, which is also known as "active learning."¹⁷ Additionally, not every Learning Algorithm has to be created from the root, as there are several open-source and proprietary software packages that offer machine learning capabilities, which overall affect the issue of granting copyright protection to human or non-human beings.

¹⁰ Communication from the Commission to the European Parliament, the European Council, Council, the European Economic and Social Committee and the Committee of the Regions on Artificial Intelligence for Europe, Brussels, 25.4.2018 COM (2018) 237 final.

¹¹ Ibid.

¹² Jessica Fjled and Mason Kortz, 'A Legal Anatomy of Al-generated Art: Part I (Jolt Digest, 21 November 2017) last access 10 April 2023.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ibid.

1.1. Research Methodology

This research paper mainly focuses on analytical and deductive approaches in order to find an answer to the questions asked. It adopts a comparative and analytical research design to compare the approaches of the EU and the UK regarding copyright protection for AI-generated works. It involves an indepth analysis of relevant legal frameworks, case law, academic literature, and official guidelines. A comprehensive review of scholarly articles, research papers, and dissertations are also conducted to gather insights and perspectives for the author to justify her point of view. The primary focus of the thesis leans on the Berne Convention for the Protection of Literary and Artistic Works and the UK Copyright, Design and Patents Act, but the author does not limit herself to the legislative acts while trying to formulate an effective solution to the emerging problem in the AI sector. In that regard, this thesis also incorporates a critical analysis, the research aims to identify and evaluate potential shortcomings, gaps, and inconsistencies in current approaches. By critically examining these approaches, the research intends to contribute to the ongoing academic and policy debates surrounding the copyrightability of AI-generated works. The aim is to provide a comprehensive and balanced assessment of the strengths and weaknesses of existing approaches while considering potential alternative perspectives and solutions.

This research is subject to certain limitations. Firstly, the constantly evolving nature of AI and copyright law may result in some aspects not being adequately covered. Additionally, the focus on the EU and the UK may limit the generalizability of the findings to other jurisdictions. Nevertheless, these limitations will be acknowledged and thoroughly examined in the research.

2.1. Theoretical Framework. Legal Personality of AI

The analysis of the legal personhood of AI begins by asking what copyright law confers to authors and what is expected from them in return. Copyright law is the perfect means of promoting, enriching and disseminating in areas such as, but not limited to, national cultural heritage, creativity, and social, technological and scientific progress.¹⁸ Concerning the essential role of copyright protection, from the author's viewpoint, it would make sense only if they derive benefits from such works in the form of moral, economic, exclusive and related rights.¹⁹ The question of whether AI has legal personality is not separate from deriving benefits if we open up the classical discussion of the definitions of legal personality. Because all these issues are interconnected with each other, having moral, economic and exclusive rights should be

¹⁸ WIPO-World Intellectual Property Organization Handbook, No. 489 (E), second edition, 2004, p 41. Available at: https://www.wipo.int/edocs/pubdocs/en/intproperty/489/wipo_pub_489.pdf (Accessed: 12 April 2023). ¹⁹ Ibid, p. 43.

accompanied by holding responsible before the law, suing and being sued, as well as conferring some form of legal personality on AI.

On a theoretical level, there is no common understanding of legal personality; however, typically, when a person or legal entity is recognized as a legal person, they are granted a particular bundle of rights and duties, the ability to possess assets and pursue legal action, as well as be subject to legal action themselves.²⁰

At a philosophical level, the opponents of granting AI legal personhood have many arguments, from the point that AI is not a human and natural person, AIs should never be more than the property of human beings, to the lack of soul, feelings, interests, free wills, consciousness and intentionality.²¹ However, to answer the questions asked in this thesis, we are mostly supposed to view all legal possibilities in a pragmatic context, considering their potential consequences in society and the goals to be achieved.²²

Most legal systems worldwide acknowledge two types of persons in the legal context: natural person and legal person.²³ A legal person, also known as a juridical person or artificial person, is an entity recognized by the law as having legal rights and duties distinct from those of its members or owners. However, unlike legal persons, natural persons do not need to be recognized or created by law, as they exist as living individuals by virtue of their birth. Many scholars already acknowledge that Artificial Intelligence will not be considered a natural person soon, and current approaches support attributing personality to AI as a legal person.²⁴ Additionally, the concept of legal personality is not a straightforward matter, and whether an AI is eligible for personhood and the type of personhood it qualifies for depends on the context. It is important to consider the circumstances and the reasonable grounds, such as economic reasons and efficient management of resources and activities, before granting legal personality.²⁵ This point of view is also supported by the legalist approach, which attempts to understand whether the legal personhood of human beings, corporations, international organizations and even objects can be extended to AIs on the ground that they meet goals pursued by the legal personhood concept.²⁶ For example, one of the main purposes of corporations is to benefit their shareholders and boost economic stability, which enables them to be recognized as having legal personhood. What about AIs? It raises another issue of ultimate-value context, which is, to some scholars, one of the crucial prerequisites of granting some level of legal personhood and claiming rights as infants or legal persons possess.²⁷ According to Visa A.J. Kurki, AI is not of ultimate

²⁰ Solum B., Lawrence Legal Personhood for Artificial Intelligences. North Carolina Law Review. Volume 70, Number 4, (1992) p. 1239.

²¹ Ibid, p. (1258).-1271[.]

²² Ibid, p. 1239.

 ²³ Nagesh Pal Singh & Nidhish Dev Lomash, Future of AI as Legal Personality, 4 INT'l J.L. MGMT. & HUMAN. 1116 (2021), p.3.
²⁴ Ibid, p. 3.

²⁵ Kelly Amal Dhru, Visa A. J. Kurki, A Theory of Legal Personhood, Medical Law Review, Volume 30, Issue 2, 2019, p. 133.

²⁶ S. Chopra and L. F. White, A legal theory for autonomous artificial agents. University of Michigan Press, 2011, p. 186.

²⁷ Kelly Amal Dhru, Visa A. J. Kurki, supra note 25, p. 175-178.

value because it can never achieve a status of moral considerability like adults, infants and animals.²⁸ Therefore, it is to say that if an AI is not deemed to have an ultimate value in the long run, it can still hold some claim rights by acting as "an administrator of a project defined by human beings", provided certain conditions are met. However, in the opposite case, it can only be considered to enjoy passive legal personhood, which is solely for specific legal rights and protections, without ascribing full legal capacity and accompanying responsibilities.²⁹

On the other hand, the proponents of the technological approach support the idea that passing the Turing test to prove to possess a wide range of capabilities, memories, and knowledge comparable to human beings is enough to determine whether AI act like a human or just a programming machine.³⁰ I am a bit sceptical of that point of view whether this test is sufficient to grant legal personality to AI, even if it can be seen as more technology-friendly. However, I consider that even if the Turing test is a vital benchmark for assessing AI's ability to exhibit intelligent behaviour, it cannot fully address the ethical, social, and legal implications of granting legal personality to AI, which I addressed above.

Even if there are enough reasonable grounds for granting legal personality to AI, it would be worth mentioning that worldwide legal systems may face coordination problems in assigning a legal personality to AIs at the technological, intra-system, and inter-system levels.³¹ First, each AI system can have unique technological peculiarities, including the type of tasks they perform, the level of autonomy, the potential risks, and their social impacts, which may require specific regulations to ensure that they operate within legal and ethical boundaries.³² Second, as different fields of law can characterize different personality statuses of AI to the extent that that field of law finds legal personality necessary, it can result in ambiguity in the legal practice.³³ For example, many scholars claim that AI lacks the capacity for intentionality to be found to have committed crimes and torts, which is one of the main elements in criminal and tort law to determine different types of criminal behaviour and appropriate level of liability.³⁴ Third, the criteria for recognizing legal personhood may vary from country to country, and legal systems may exercise exclusive jurisdiction over these rules, which may complicate coordination.³⁵

²⁸ Ibid, p. 178.

²⁹ Ibid, p.178.

³⁰ Petit, Nicolas, Law and Regulation of Artificial Intelligence and Robots - Conceptual Framework and Normative Implications, 2017, p. 8.

³¹ Claudio Novelli, Giorgio Bongiovanni & Giovanni Sartor (2022) A conceptual framework for legal personality and its application to AI, Jurisprudence, 13:2, 194-219, p. 201.

³² Ibid, p. 201.

³³ Ibid, p. 202.

³⁴ Lawrence B. Solum, Legal Personhood for Artificial Intelligences, 70 N.C. L. Rev. 1231 (1992), p. 1267.

³⁵ Claudio Novelli, supra 31, p. 202.

European Parliament's resolutions regarding civil liability regime for artificial intelligence³⁶ and intellectual property rights for the development of artificial intelligence technologies³⁷ clearly acknowledge that AI systems should not be granted legal personality, as they do not have human consciousness, and their sole purpose is to serve humanity. When it comes to the civil liability of AIs, the Parliament notes that AI systems are only capable of causing harm due to the actions of human beings. Therefore, AI itself cannot be held liable.³⁸ European Parliament also recognized that the automation of the creative process using AI could raise concerns regarding the ownership of intellectual property rights over AI-generated works. However, giving legal personality to AI technologies would not be a suitable solution to address this issue by taking into account its potential adverse effect on the incentives by human creators.³⁹ Although European Parliament took a concrete step towards the issue of the legal personality of AI, especially in the context of copyright protection, its analysis justified with previous theories was not welcomed by all scholars. In the current age of advanced technology, we need to reconsider the main principles and regulations for AI in conformity with Judge Easterbrook's argument that mistakes by legislative bodies are common, especially when technology is emerging at a rapid pace.⁴⁰

2.2. Possible functional approach.

The electronic personality of AI

Because of the above-mentioned reasons and European Parliament Resolutions, it can be seen as reasonable to consider another approach-electronic personality of AI instead of legal personality, while it could be more practical and appropriate for addressing the legal challenges posed by AI. The idea of an electronic personality brings a specific legal status for AI by creating a different legal liability regime while making autonomous decisions or otherwise interacting with third parties independently.⁴¹ This new concept was suggested by European Parliament Resolution to grant electronic personhood to "intelligent" robotic artefacts in 2017. By considering that robots are considered the manifestations of AI and the Resolution ⁵⁵ mentioned also specified the legal liability of AI in general, analogously, legal rights, obligations and liability of AI could be determined, and it can clarify the relationship between, on the one hand, AI, and its programmer, on the other hand, AI and its user.

³⁶ European Parliament, Intellectual property rights for the development of artificial intelligence technologies, 2020/2015(INI), 2020 O.J. (C 338).

³⁷ European Parliament, Recommendations to the Commission on a Civil Liability Regime for Artificial Intelligence, 2020/2014(INL), 2020 O.J. (C 338) 1.

³⁸ Ibid, para. 7.

³⁹ European Parliament, 2020/2015(INI), supra note 36, para. 13.

⁴⁰ F.H. Easterbrook, "Cyberspace and the Law of the Horse." U. Chi. Legal F. (1996): 207-216.

⁴¹ European Parliament, 'Resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics' (2015/2013(INL)), 59 (f).

What is electronic personality? Electronic person is a form of legal entity, they can hold liable for their actions and enter into legal agreements.⁴² An electronic person performs several functions aligned with the goals of its AI developer.⁴³ Similar to the liability of the company's management board members towards its debtors, although an electronic person would independently carry out its actions, it would impose certain responsibilities on natural persons, such as those listed in the registry, for example, programmers, creators and owners of AI.⁴⁴

Some scholars, such as Sthéfano Bruno Santos Divino perceives the e-personhood of AI as the most appropriate framework in order to address liability, accountability and IP issues. They argue that AI does not seem to fit into either of the two established legal classifications, namely natural person or legal person. From their point of view, referring to AI as a legal person would "make this entity strange and dislocated, without a factual, legal and historical context."⁴⁵ Recognizing the uniqueness of AI within the current legal framework necessitates the development of a new concept: the electronic personality.

Another reason for justification regarding this solution is that granting electronic personality to AI systems would lead to the reallocation of responsibilities and risks between AI programmers, users and AI itself, which in turn, could promote investment and entrepreneurship.⁴⁶ Indeed, it would generate a motivation to shift risk onto these electronic persons as a means to protect natural persons from potential consequences and also avoid granting them additional rewards for which AI made autonomous decisions. In that regard, this approach resembles a challenge with corporations as well, where they can be utilized to safeguard investors from liabilities that go beyond their initial investment.⁴⁷

Although European Parliament later dropped their idea of granting electronic personality to AI by showcasing in its Resolution related to the civil liability regime, dated 2020 and Proposal for the Artificial Intelligence Act⁴⁸, dated 2021, it should not be denied that with the advancement of AI technologies, the EU Parliament's position of "works autonomously produced by artificial agents and robots might not be eligible for copyright protection."⁴⁹ may need to be reversed. If the operator (backend and frontend developer) of an AI system is strictly liable for any harm or damage resulting from the physical or virtual

 ⁴² Ziemianin, K. (2021). Civil legal personality of artificial intelligence. Future or utopia?. Internet Policy Review, p. 9.
⁴³ Yastrebov, O.A. (2018). The Legal Capacity of Electronic Person: Theoretical and Methodological Approaches. Trudy Instituta gosudarstva i prava RAN — Proceedings of the Institute of State and Law of the RAS, 13(2), pp. 36—55.
⁴⁴ Supra note 42, Ziemianin, p. 10.

⁴⁵ Divino, Santos, and Sthefano Bruno. 2020. Critical Considerations on Artificial Intelligence Liability: E-Personality Propositions. Revista Eletronica Direito e Sociedade 8: 193-214, at 205.

⁴⁶ Chesterman, S. (2020). Artificial intelligence and the limits of legal personality. International & Comparative Law Quarterly, 69(4), 819-844, p. 825.

⁴⁷ Ibid, p. 825.

⁴⁸ Proposal for a regulation of the European Parliament and of the Council laying down harmonized rules on artificial intelligence (Artificial Intelligence Act), COM/2021/206 final.

⁴⁹ Supra note 5, para. 15.

activities performed by AI systems, why could operators receive any reward from AI-generated works by registering AI as an electronic person and gain profit?

3.1. Can AI-generated works be considered original and artificially creative?

Unfortunately, the question is not so simple. Human beings often find it challenging to embrace the idea that AI can possess the capacity for creative thinking. Under this reluctance, there is hidden human pride in the wish to differentiate themselves apart from other animals and machines.⁵⁰ By taking into account that there is not a clear answer even from the legal point of view, the scholar's arguments have also been split into several groups, while mostly 2 of them are more evident⁵¹:

- 1. The implementation of the analogy of human-authored creations to AI-generated works in terms of creativity by objectively judging them.
- 2. Removing originality requirement for computer-generated works by accepting its difference from traditional works.

Both Berne Convention and ECJ case law⁵² requires the works to be the author's own intellectual creation reflecting its personality and leaning on its free and creative choices. For example, in the Infopaq case⁵³, the court concluded that the originality requirement is met in the sense that it belongs to the author by being the author's intellectual work. This implies that the work in question cannot have been directly replicated from pre-existing sources and that the author had the ability to exercise subjective choices during its creation, thereby touching the work with its distinctive artistic style. Additionally, the court further clarified in another case that a work solely driven by its technical function, created solely to achieve a specific technical effect, does not meet that criterion, therefore, does not qualify for copyright protection.⁵⁴ However, the court also acknowledged that the choice, order, and combination of words could present the author's ability to express creativity uniquely and its intellectual creation.⁵⁵ What if it means that the poems, books, and songs written by ChatGPT will be supposed to be creative and original, given that its algorithm

⁵⁰ Colin Davies, "An evolutionary step in intellectual property rights - Artificial intelligence and intellectual property", 27 Computer Law & Security Review (2011), p.604.

⁵¹ Toby Bond and Salah Blair, Artificial Intelligence and copyright, Section 9(3) or authorship without an author, Journal of Intellectual Property Law & Practice, 2019, Vol. 14, No. 6, p.423.

⁵² Case C-5/08 Infopaq International [2009] ECR I-6569, para. 37; See also Case C-145/10, Painer v. Standard VerlagsGmbH, 2011 E.C.R. I-12594, para. 89

⁵³ Ibid, Infopaq, para. 11.

⁵⁴ Case C-604/10 Football Dataco/Yahoo, 2012 para. 38

⁵⁵ Supra 7, Infopaq, para. 45.

tries to understand the statistical patterns, style and relationships between words and generate coherent and contextually relevant responses?

Considering that harmonization of the European case requires all national jurisdictions (Member States of the European Union) to take similar steps, finding enough justifications for AI-generated works to be AI's own intellectual creation will play a substantial role in this thesis.

Regarding AI-generated works, some scholars also acknowledge that AI can become an independent actor in the creative and automatic process by producing unique works of artistic value and various complexity, making AI an active participant in creativity and innovation.⁵⁶ Although the creativity of AI is not inherent and lacks free will, it stems from the algorithm utilized in its design and training or the instructions provided by its programmers.⁵⁷ While human authors often exercise free will in their creative process, the focus can be directed to the outcome with regard to AI-generated works rather than the consciousness behind the process.

According to the Dutch Supreme Court decision, "author's own intellectual creation" and "imprinting the work with a personal touch" are two elements required for copyrightable work. The first means that it must not be derived from another work; the latter is the result of creative human effort and reflects the choices made by the creator, thus embodying the human spirit. As a result, works which are supposed to be banal without evident creativity fall outside these requirements.⁵⁸ However, there is no point in directly applying those cases to the current situation, which is constantly evolving and so different from human creations. Because in the European Copyright Law, creativity and originality requirements are so interconnected, thus the work can be considered original if the author tries to express their free and creative choices and abilities during the production of the work.⁵⁹

All legal framework is set up in the sense that creativity is a basic human (not non-human) characteristic.⁶⁰ But this approach should be reevaluated in this era. According to the European Parliament Resolution on AIs⁶¹, the concept of creativity is associated with a human being and given that the idea of 'intellectual creation' encompasses the author's unique characteristics and expression. It can be justified with the view that even the outputs of the fully generative machines reflect the creative input of the AIs designer or a combination of the AIs input and the user's input, which are intertwined.⁶² Because AI itself

⁵⁶ Kalin Hristov, Artificial Intelligence and the Copyright Dilemma, 57 IDEA 431, 2017, p. 434.

⁵⁷ Daryl Lim, AI & IP: Innovation & Creativity in an Age of Accelerated Change, 52 Akron L. Rev. 813, p. 842 (2018)

⁵⁸ Dutch Supreme Court 30 May 2008, LJN BC21 53 (ECLI:NL:HR:2008: BC2153), para. 4.5.1.

⁵⁹ CJEU 12 September 2019, C-683/17, para. 30.

⁶⁰ Madeleine de Cock Buning, Autonomous Intelligent Systems as Creative Agents under the EU Framework for Intellectual Property, 7 EUR. J. Risk REG. p. 315 (2016).

⁶¹ Supra note 36, 2020/2015(INI), para 15.

⁶² Jane C. Ginsburg & Luke A. Budiardjo, Authors and Machines, 34 BERKELEY TECH. L. J. 343 (2019), p.405.

can never be seen as a source of creativity.⁶³ While some scholars argue that distinguishing three categories of generative machines (ordinary, partially generative, fully generative) can change the outcome of creativity issues, others still believe that AI-generated outputs are by-products of the code written by the programmers and the instructions given by the users.⁶⁴ With regard to a fully generative machine, which is capable of producing individual outputs with only minimal user input, the resulting output, regardless of its uniqueness and complete unpredictability, can be traced back directly to the machine's process, which, in turn, is inherently a creation of a human developer or user.⁶⁵ What many scholars cannot admit is the fact that similar to the capacity of infants to acquire knowledge and exhibit developmental progress under human guidance by copying them, AI itself holds the potential for learning patterns from human inputs, analyzing data and utilizing those patterns to generate novel works with minimal human input. Because sometimes, AI is programmed in a manner that enables it to showcase learned skills that surpass the capabilities of its programmers.⁶⁶

In that regard, psychological and philosophical approaches to this matter are needed to be taken into account. On the psychological level, in order for creative work to be considered truly valuable, it should possess two important qualities: originality and functionality or the ability to be adapted practically to reality.⁶⁷ It is called adaptive originality, which requires the work to respond to its practical purposes. One might argue that AI-generated works also meet these requirements while being adaptable to various practical applications and real-world contexts.

But on the philosophical level, it can be difficult to argue that AI systems are creative. Even if creativity is generally understood as the capacity to produce things that are both original and valuable, it is limited to actions that involve intention, purpose, understanding, judgment, and evaluative ability, as it is not a property applicable to inanimate objects or plants lacking these cognitive attributes.⁶⁸

A holistic approach may be granting economic rights to AI-generated works similar to those granted to films, sound recordings, broadcasts, and typographical arrangements, given that they do not copy the previous works but do not necessarily have to be completely original.⁶⁹ But it does not mean that the process by which AI generates original works is always creative⁷⁰, even in that case, determining the minimum creativity threshold for AI-generated outputs in European frameworks would help to approach those works separately. Without replacing human creativity with artificial creativity or removal of the

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⁶³ Ibid.

⁶⁴ Ibid, p. 398-405.

⁶⁵ Ibid, p.405.

⁶⁶ Supra note 56, Kalin Hristov, p.434.

⁶⁷ Supra note 60, Madeleine.

⁶⁸ Berys Gaut, "The Philosophy of Creativity", 5/12 Philosophy Compass (2010), p. 1039.

⁶⁹ Supra 51 Toby Bond, p.423.

⁷⁰ Shlomit Yanisky-Ravid, Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era--The Human-Like Authors Are Already Here--A New Model, 2017 Mich. St. L. Rev. 659, p.724. (2017)

human-based creativity requirement completely for AI-produced inputs, unfortunately (or fortunately), it will be impossible to grant them the current copyright protection.

3.2. Who is the author?

If AI-generated works are considered to meet the originality requirement, the question arises who the author is. There is no doubt that common and civil copyright law, except in the UK and Ireland, are based on the anthropocentric position⁷¹, requiring human authorship and promoting the creative incentives of human beings. Even Berne Convention does not define the scope of the authorship; it is also silent in terms of AI-generated inputs. However, the nationality and residency requirements stipulated in the Berne Convention make it indirectly clear that only humans can be an author from the copyright perspective. Directly, the Swiss Federal Act on Copyright and Related Rights indicates that only a natural person can be an author.⁷² If we go back, European Commission's Proposal dated 1989 also stipulates that:

"The human input as regards the creation of machine-generated programs may be relatively modest and will be increasingly modest in future. Nevertheless, a human 'author' in the widest sense is always present and must have the right to claim 'authorship' of the program."

The UK Copyright, Designs and Patent Act not only defines AI-generated works as a subject matter of copyright law but also grants the person with authorship who undertakes the arrangements necessary for the creation of the work.⁷³ Clearly, it leaves more room for the interpretation of this article by not to explaining the eligibility of the person, as it can be a natural and legal person. The problem stems from the question of who is supposed to be eligible to make arrangements for the creation of the work and whether the concept of electronic personality will help to incentivize artistic works. Recently, in order to adjust and, if necessary, reconsider copyright law to the development of AI technologies, the UK government conducted a thorough process of gathering evidence and seeking input on various options concerning the incorporation of AI into the patent and copyright systems. Given that the use of AI in generating creative content is still in its early stages and these limited experiences may result in unintended consequences, the UK government has reached a conclusive decision to maintain the existing law concerning computer-generated works without implementing any alterations at this time.⁷⁴

⁷¹ Zurth, Patrick, Artificial Creativity? A Case Against Copyright Protection for AI-Generated Works (25 March 2021). UCLA Journal of Law & Technology, p.2.

⁷² Urheberrechtsgesetz [URG] Copyright Act, Oct. 9, 1992, AS 1798 (1993), Art. 6.

⁷³ Supra note 6, Article 9(3).

⁷⁴ Artificial Intelligence and Intellectual Property: copyright and patents: Government response to the consultation, updated on 28 June 2022, last accessed on 15 June 2023. https://www.gov.uk/government/consultations/artificial-intelligence-and-ip-copyright-and-patents

Considering that European Parliament refused to accept the legal personality of AI, we need to consider both European and the UK approaches to find the appropriate solution. In academia, three categories of human beings are supposed to be granted authorship, such as users, programmers or the legal entity consisting of the owner of the software. Here, I will discuss which approach would benefit the ultimate goals of copyright law and the enhancement of the AI industry.

A. User:

According to some scholars, Berne Convention outlines minimum standards of authorship, meaning that some levels of human involvement should be present during the creation of the work.⁷⁵ If the role of human beings is only limited to giving instructions, they cannot be considered an author of these works.⁷⁶ For example, DALL-E was programmed to generate photos, videos and movies with human instructions; if a painter determines the painting's colour, style and content with words, the inputs will come up as a result of the automated decision-making feature of deep learning machines.⁷⁷ Therefore, the final product is not the end user's creation. Until recent decades, some scholars were against this position, pointing out that the user may possess more technical knowledge than the programmer, allowing them to better understand and utilize AI to create a valuable output. As a result, the user should be considered the author of any resulting work, except in cases where the work contains a significant portion of recognizable expression from the original program.⁷⁸ Nevertheless, taking into account the recent enhancement of AIs, it would not be fair to say that the final output is the creative decision-making process of the users.

In addition, granting copyright to the users is not welcomed, considering their less contribution to the creation of AI-generated works. In the case of limiting authorship with the users, with the reluctancy of AI companies and programmers, it can hinder the widespread application of AI and the exceed advantages associated with it, potentially leading to diminished production of AI-generated works and impeding the progress of AI industry as a whole.⁷⁹

B. Programmer:

At first glance, granting authorship to the programmer may be perceived as the most appropriate way in terms of its indirect technological investment in the AI-generated output. The reason behind this point of view stems from the idea that the intricate nature of designing such AI systems requires a mentally demanding process, a high level of skill, innovation, and creativity. Consequently, acknowledging and protecting the rights of the programmers who invest their expertise and resources in creating these systems

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⁷⁵ Jane C. Ginsburg, People Not Machines: Authorship and What It Means in the Berne Convention, 49 Int'l Rev. Intell. Prop. & Competition L. 131, 134-35 (2018)

⁷⁶ Ibid.

⁷⁷ Daniel J. Gervais, The Machine as Author, 105 Iowa L. Rev. 2053, 2070 (2020).

⁷⁸ Pamela Samuelson, Allocating Ownership Rights in Computer-Generated Works, 47 U. PITT. L. REv. 1185, 1202 (1986).

⁷⁹ Supra 56, Kalin, p. 444.

becomes crucial in order to incentivize further advancements and ensure a fair and equitable environment for creators.⁸⁰

On the other hand, given that the levels of autonomy on AI-generated works are various, it may not be fair to grant authorship solely to the programmer in every case, as the nature of AI-generated works can vary greatly, making it difficult to generalize ownership and attribution to a single individual. In the case of fully autonomous AI machines, it is perceived that no programmer can control the outcome, which introduces an element of unpredictability.⁸¹ For instance, if we consider a scenario where an AI program independently determines the melody, harmony, key, and rhythm without relying on the AI programmer's initial input, in this case, the programmer's contribution is not carried over to the production level and does not impact the creative expression of the resulting work.⁸²

From the economical point of view, granting copyright protection to the unpredictable output of AI machines would unfairly reward the programmer, especially considering that the programmer is no better positioned than anyone else to anticipate the output.⁸³ As a result, a direct causal connection is broken between humans and the outputs generated by these machines.

C. AI itself: legal entity consisting of the owner of the software and the owner of the computer.

As stated in the InfoSoc Directive⁸⁴, one of the main goals of copyright law is to protect and stimulate the development and marketing of new products and services and the creation and exploitation of their creative content. The idea of attributing authorship to AI itself can aim to safeguard the creations generated by AI machines from being freely available to the public; rather, it would grant programmers and investors involved in developing these machines a certain level of exclusivity over the copyrightable outcomes.⁸⁵ Here, the concept of electronic personality will help. Unlike companies, which are often established to minimize risk and engage in trade, granting personality to AI aims to legitimize intellectual property rights; initially, the rights would vest in the machine and then be transferred through contracts to the designated recipient identified from the beginning.⁸⁶

There is a strong belief among scholars that AI itself deserves better to be granted economic rights, despite no financial incentives of AI, unlike human authors. However, when considering the existing

⁸⁰ Atilla Kasap, Copyright and Creative Artificial Intelligence (AI) Systems: A Twenty-First Century Approach to Authorship of AI-Generated Works in the United States, 19 WAKE Forest J. Bus. & INTELL. PROP. L. 335 (2019), p.367.

⁸¹ Ibid, supra note 77, Daniel.

 ⁸² Dornis, Tim W., Artificial Creativity: Emergent Works and the Void in Current Copyright Doctrine (10 September 2019).
YALE JOURNAL OF LAW & TECHNOLOGY Vol. XXII, pp. 1 (2020), p. 50.
⁸³ Ibid.

⁸⁴ Directive on the harmonization of certain aspects of copyright and related rights in the information society ('InfoSoc Directive'), 22 May 2001, 2001/29/EC.

⁸⁵ Supra note 56, Kalin Hristov, p.444.

⁸⁶ Supra note 50, Colin Davies, p.618.

legislation governing intellectual property rights, especially Berne Convention and the UK Copyright, Designs and Patent Act, what matters fundamentally is the presence of creativity. This thesis argues that AI can fulfil this requirement. With regard to the human authorship requirement, this approach would be the suitable solution, given that on behalf of AI, within the electronic personality concept, the people who make the necessary arrangements for the production of work will be granted economic rights. Furthermore, regarding the term of copyright protection, enabling AI to be an author makes the implementation of the law practical.⁸⁷ For example, in accordance with the UK Copyright, Designs and Patents Act, the copyright for computer-generated works is limited to a validity of 50 years. As a result, the copyright vested in the AI would not endure indefinitely, ensuring that it does not impede the unrestricted dissemination of knowledge and information.

It should be noted that the issue of granting authorship to AI is not straightforward, not only from an academic point of view but also from a legal point of view. First, granting authorship to AI would adversely affect human creativity, more importantly, access to the information.⁸⁸ Even if human beings are considered the right holder, enabling AI investors to use its power and gain economic value would also affect the humans' rights to fair competition. The creative abilities of humans should always be prioritized above those of AI, considering that the scope of AI's creation is ultimately determined by its human programmers, whereas human creativity possesses the unlimited potential and boundless possibilities.⁸⁹

In any case, preventing unfair competition between humans and AIs is not only related to economic revenues resulting from granting authorship. In the condition to avoid potential negative effects on human creativity, the concept of electronic personality would benefit the increase of human willingness to invest in AI technologies by balancing their interests and responding to the goals of copyright law.

4. Conclusion

This research has identified the main components of considering AI-generated works as a subject matter of copyright law by suggesting the authorship to AI itself, which is supposed to have an electronic personality. Considering that this point of view was almost new and not supported by the European Parliament (even rejected), this study has shed light on the potential balanced path forward in addressing the unique challenges posed by AI-generated outputs. In order to prove this hypothesis, the first chapter of the study focused on the traditional legal personality concept and scholarly, legislative views in terms of AI-produced works. Admittedly, it did not seem reasonable and possible to implement it in the works of AI. Unlike the UK, the Europe governments try to avoid showing a determined approach since they need

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 ⁸⁷ Gautam Badlani, Artificial Intelligence and the Need for Reform in Copyright Laws, 1 LEGAL Spectrum J. 1 (2021), p.6.
⁸⁸ Ibid.

⁸⁹ Ibid.

more time to see the potential effects of AIs on human creative endeavours and the overall goodness of society. To overcome these challenges and find the balance between the Europe and the UK approaches, in the further chapter, the study tried to explore another concept-electronic personality, which is more specific and flexible to adjust it to the current revolutions of AIs. Even if this concept is not accepted by any legislative bodies in Europe and the UK, we stick to this type of personality which is ultimately necessary for granting authorship to the AI by rewarding humans behind the scene at the same time.

In the second chapter, this study tackled one of the most vital elements of creativity/originality of AI-generated works. Through an examination of existing case law and scholarly perspectives, it became evident that the traditional approaches may not be fully adequate in addressing the unique nature of AIgenerated creativity. As such, it becomes apparent that a new and alternative approach is necessary to comprehend and evaluate the creative outputs of AI in a more nuanced and contextual manner. One of the appropriate solutions could be creating a new concept of artificial creativity and evaluating each AIgenerated output separately. Unlike traditional creative works, AI-generated outputs often involve algorithms and machine learning, where the creative contributions are a result of data analysis, machine learning, and computational processes. This blurs the line between human and machine creativity, necessitating a reevaluation of the concepts of authorship, creativity, and originality. It is within the purview of the courts to engage in comprehensive analysis, taking into account factors such as the extent of human involvement in the creation process, the level of originality and creativity exhibited by the work, and the overall societal impact and value generated by the AI system. By means of this case-by-case approach, courts can ensure that their determinations align with the underlying goals of copyright law while also considering the dynamic nature of technological advancements and their impact on creative production.

In the last chapter, the study focused on the advantages of granting authorship to AI itself rather than users or programmers separately. With the help of electronic personality, the possibility to reap the rewards from these creative outputs becomes more accessible, providing an incentive for individuals and organizations to invest in AI technology, ultimately contributing to the growth and evolution of AI endeavours. However, it should be admitted that ethical and social challenges arising from these perspectives should be addressed in another study more comprehensively.

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