

NAVIGATING THE COMPLEXITIES OF AI: CHALLENGES IN THE PROTECTION OF COPYRIGHT REGARDING AUTHORSHIP AND OWNERSHIP

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ABSTRACT

The rapid advancements in artificial intelligence (AI) have ushered in a new era of innovation and creativity. They have also given rise to intricate conundrums in the realm of intellectual property. AI-generated content such as artworks, music, and literature, have raised fundamental questions about who should be recognized as the author of these creations. The nagging question is: should AI itself be considered the author, or should credit be assigned to the human programmer who created and trained the AI? This ambiguity fuels debates about the appropriate attribution of creative works, especially when AI systems are used to produce content that is virtually indistinguishable from human-made works. Closely related to this is the question of whether AI can be considered as autonomous in itself to be able to generate ideas on its own, hence contents generated by it should be afforded copyright in the name of the AI.

The question of whether the creator of the AI, the user who inputs parameters, or the AI itself should possess ownership rights becomes a complex legal puzzle. This blurs the line between human innovation and machine-driven creation. Striking a balance between stimulating innovation and protecting the interests of creators and innovators is an ever-challenging task. Addressing these conundrums necessitates a re-evaluation of copyright laws to accommodate AI's

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transformative capabilities. This paper, therefore, seeks to undertake an excursus on these intricate complexities that AI presents to intellectual property as it relates to copyright in modern times.

1. INTRODUCTION

The advent of technology has brought with it concomitant benefits and challenges in the field of intellectual property law and other fields of human endeavor. One of the most profound technological advancements in recent times is the development and proliferation of artificial intelligence (AI).² AI's capabilities have evolved to the point where it can create content that is virtually indistinguishable from that produced by humans. This development poses significant questions and challenges regarding the authorship and ownership of AI-generated content.

This is primarily due to the axiomatic fact that, traditional copyright laws, such as those outlined in the Berne Convention, were designed with human creators in mind.³ These laws provide a framework for the protection of literary and artistic works, ensuring that creators are recognized and rewarded for their efforts, without contemplating the intervention of machine learning generated information. Accordingly, when AI systems autonomously generate content, these laws are called into question.

In the peculiar case of Ghana, the Copyright Act 2005 (Act 690) defines an author as "a person who creates a work" and an owner as "the person to whom the copyright in a work belongs."⁴ These definitions, while clear in the context of human creators, do not account for AI-generated content. The fundamental question arises: Should AI be considered the author of the works it generates, or should the human programmers and operators behind the AI receive the credit? This issue is further complicated by the nature of AI itself – whether it can be considered autonomous enough to generate ideas and create content independently.

The ownership of AI-generated content presents another layer of complexity. AI systems are typically developed and operated by corporations or individuals, leading to ambiguity regarding who holds the rights to the content produced. The dilemma is whether the rights should belong to the creator of the AI, the user who provides the input, or the AI

2 Abdikhakimov Islombek Bahodir ugli, 'Unraveling the Copyright Conundrum: Exploring AI-Generated Content and its Implications for Intellectual Property Rights' (2023) *International Conference of Legal Sciences* 1(5) 18-32.

3 Berne Convention for the Protection of Literary and Artistic Works (adopted on 24th July 1971, entered into force on 28th September 1979), Article 2 & 3.

4 Copyright Act, 2005 (Act 690), s. 76.

itself.

This paper is divided into five parts, the first part of which is the introduction. The second part of the paper undertakes an excursus into the literature surrounding the topic. The third part of the paper considers the challenges that confront copyright protection especially, with the evolution of AIs. The fourth part undertakes comparative analysis of the situation in Ghana with other countries and lessons to be drawn from these jurisdictions. Finally, the paper concludes with recommendations for addressing these challenges, whilst encouraging innovation.

2. LITERATURE REVIEW

2.1 General Background About Copyright

Copyright is a property right that subsists in certain types of works, such as original literary and artistic works, films and sound recordings.⁵ The copyright owner of a work holds the exclusive rights to perform certain actions related to that work, such as reproducing it, broadcasting it, or distributing copies to the public.⁶ These activities are restricted by copyright law. The copyright holder can manage the usage of the work by, for instance, making copies, selling them to the public, or granting others permission to do so in exchange for payment.⁷ A typical example is when a copyright owner allows a publishing company to print and sell copies of a literary work, receiving royalty payments, which are usually a predetermined percentage of the book's selling price.⁸

Copyright is the expression of ideas which is original and not just the existence of the idea.⁹ In determining what is original work, one cannot look beyond without considering the provisions of the Berne Convention, which is the source of modern copyright law. The provisions of the WIPO Copyright Treaty require contracting states to comply with the substantive provisions of the Berne Convention,¹⁰ as does the TRIPS Agreement.¹¹ The Berne Convention, while providing that it is a matter for the contracting states to determine which work shall be the subject copyright protection,¹² emphasizes the need for the work to be an intellectual creation.¹³

5 David I. Bainbridge, *Intellectual Property* (9th Edn, Pearson Education Limited, 2012).

6 *Ibid.*, (n 3), s 5&6.

7 *Ibid.*

8 *Ibid.*

9 *Ibid.*

10 WIPO Copyright Treaty (Adopted on 20th December 1996, Geneva), Article 1-21.

11 TRIPS Agreement, Article 9.

12 Berne Convention, Article 2(2).

13 *Ibid.*, Article 2(5).

Accordingly, the Copyrights Act of Ghana provides that copyright cannot extend to ideas, concepts, procedures, methods or other things of a similar nature. However, the work must be an expression of an idea.¹⁴ In essence, for a work to be copyrightable, it must be a work in the nature of the expression of an idea in a tangible form, and more particularly, the work must be an original work. Originality of work does not mean the work must be new or must be of first invention.¹⁵ It must be noted that, in certain instances, there could even be an expression of ideas which are not protected by copyright because, the ideas expressed therein, do not relate to literary, artistic or musical works.¹⁶ The second instance is where the idea so expressed is not original in nature.¹⁷

However, the test is that the work must involve some mental or intellectual effort, and not necessarily the exertion of labour or expense.¹⁸ For a work to be “original” within the meaning of the Copyright Act, it must be more than a mere copy of another work. At the same time, it need not be creative, in the sense of being novel or unique.¹⁹ What is required to attract copyright protection in the expression of an idea is an exercise of skill and judgment. Skill means the use of one’s knowledge, developed aptitude or practised ability in producing the work.²⁰ Judgment, on the other hand, means the use of one’s capacity for discernment or ability to form an opinion or evaluation by comparing different possible options in producing the work.²¹ This exercise of skill and judgment will necessarily involve intellectual effort. The exercise of skill and judgment required to produce the work must not be so trivial that it could be characterized as a purely mechanical exercise.²² For example, any skill and judgment that might be involved in simply changing the font of a work to produce “another” work would be too trivial to merit copyright protection as an “original” work.²³

Consequently, this test has done away with the sweat and brow doctrine by which a person was entitled to copyright protection merely because the person expended some effort without necessarily the exercise of any intellectual skill.²⁴

Therefore, it has been held that requiring that an original work be the

14 *Pearson Education Limited v. Morgan Adzei* [2011] GHASC 47.

15 *Bainbridge*, (n 4).

16 *Designer Guild Limited v. Russel Williams* [2000] 1 WLR 24616.

17 *Ibid.*

18 *Ibid.*

19 *Law Society of Upper Canada v. CCH Canadian Ltd* [2004] FSR 871

20 *Ibid.*

21 *Ibid.*

22 *Ibid.*

23 *Ibid.*

24 *University of London Press, Ltd. v. University Tutorial Press, Ltd.*, [1916] 2 Ch. 601; *U & R Tax Services Ltd. v. H & R Block Canada Inc.* (1995), 62 C.P.R. (3d) 257 (F.C.T.D.).

product of an **exercise of skill and judgment** is a workable yet fair standard.²⁵ The “sweat of the brow” approach to originality is too low a standard. It shifts the balance of copyright protection too far in favour of the owner’s rights and fails to allow copyright to protect the public’s interest in maximizing the production and dissemination of intellectual works.²⁶ On the other hand, the creativity standard of originality is too high. A creativity standard implies that something must be novel or non-obvious — concepts more properly associated with patent law than copyright law.²⁷ By way of contrast, a standard requiring the exercise of skill and judgment in the production of a work avoids these difficulties and provides a workable and appropriate standard for copyright protection that is consistent with the policy objectives of the Copyright Act.

Now, for copyright to exist in a work under the Copyrights Act, it must comply with the requirements of the Act. Therefore, pursuant to section 1(2) of the Copyright Act, a work is not eligible for copyright protection unless:

- (a) It is original in nature.
- (b) It has been fixed in a tangible form of expression, whether currently known or developed in the future, so that the work can be perceived, reproduced, or communicated either directly or with the help of any machine or device.
- (c) It meets one of the following criteria:
 - (i) It is created by a citizen or a person who is ordinarily resident in the Republic.
 - (ii) It is first published in the Republic; if first published outside the Republic, it must be published in the Republic within thirty days of its initial publication abroad.
 - (iii) It is a work for which the Republic has an obligation to provide protection under an international treaty.

It is evident from this provision that for a work to be entitled to copyright protection, there must be someone who is the author or owner of the work. Authorship and ownership are, however, two separate concepts in relation to copyright, each attracting unique rights. Authors have moral rights, while copyright owners hold economic rights. Sometimes, the author of a work is also the copyright owner, but this is not always the case, and many works have different individuals as authors and copyright owners.²⁸

²⁵ *Law Society of Upper Canada* (n 18).

²⁶ *Ibid.*

²⁷ *Ibid.*

²⁸ *Bainbridge* (n 4).

Ownership generally derives from authorship; the person who creates the work is usually the initial copyright owner, unless the work was created as part of their employment, in which case the employer is typically the first copyright owner.²⁹

The author of a work is the one who creates the work, and generally, will be the owner of the work except in certain specified instances where the author decides to transfer or assign or otherwise grant license in respect of his rights.³⁰

This is further reinforced by Article 15 of the Berne Convention. Therefore, in the absence of any agreement to the contrary, the one who creates the work is regarded as the author of the said work.³¹

Also, a person who acts solely as a scribe, accurately producing a copyright expression based on instructions without any creative input, cannot be considered an author or co-author of the work.³² Accordingly, there must be a significant creative contribution and a 'direct responsibility for what actually appears on the paper' to meet the criteria for authorship.³³

Based on the above, the author is the individual who creates or originates a work. For example, the author of a literary work is the writer; the author of a piece of music is the composer; the author of a photograph is the photographer; and the author of a compilation is the person who collects, organizes, and arranges the material within it. In the case of joint authorship, there must be evidence of contribution of each co-author to the finished work that is not distinct from each other.³⁴ There is no requirement that the authors intend to create a work of joint authorship: the question is simply that the authors collaborated and created a work in which their contributions are not separate.³⁵ However, there must be evidence that the contribution of each co-author involved the exercise of skill and judgment.³⁶ Contribution by way of ideas, will not, without more, make a person the joint owner of a work, since the overriding principle is that copyright protects expression of ideas and not ideas.³⁷ This reinforces the view that even a significant contribution cannot guarantee co-authorship; it has to be inexorably linked with the creative input required to produce a work of copyright. In cases where it is impossible to determine the author of the work, the presumption is that the person whose name appears on

29 Ibid.

30 Ibid.

31 Copyright Act, s 7.

32 Ibid.

33 *Robin Ray v Classic FM plc* [1998] FSR 622.

34 Copyright Act, s 76.

35 *Hodgens v Beckingham* [2003] EMLR 18.

36 *Fylde Microsystems Ltd v Key Radio Systems Ltd* [1998] FSR 449.

37 *Robin Ray v Classic FM plc* [1998] FSR 622.

the work shall be presumed to be the author of the said work.³⁸

On the other hand, ownership of copyright means the person to whom the copyright in a work belongs and includes the heir of an author or an assignee in whole or in part of a copyright.³⁹ This implies that, the owner of a copyrightable work is the person with the right to enjoy the economic and other rights vested in that work. As has been discussed already, the first author of a work is the owner of the said work. But there are some exceptions to this basic rule. For example, where a literary, dramatic, musical or artistic work is made by an employee in the course of his employment, his employer is the first owner of the copyright subsisting in the work subject to any agreement to the contrary.⁴⁰

The rights to a work may still belong to the employee based on an implied term arising from past practices. If the employee's name is on the work or its copies, it is presumed that the work was not created as part of their employment.⁴¹

For joint authorship works, unless the authors are employees acting within their employment, the joint authors automatically become the initial joint owners of the copyright. They own the copyright as tenants in common, meaning each author's rights are separate.⁴² Each can assign their rights without the permission of the other, and upon their death, their rights will transfer to their personal representatives as part of their estate.

When copyright is assigned to two or more persons, they hold it as tenants in common unless otherwise specified in the agreement. Copyright can be considered a bundle of rights, allowing for partial assignment. For instance, if Owner A of a dramatic work's copyright assigns the public performance rights to new joint owners B and C, and the right to publish paper copies to D and E jointly, A remains the sole owner of the remaining rights, such as the translation rights.⁴³

However, simply granting different rights to different people does not make them joint owners. Each person becomes the sole owner of their specific part of the copyright.⁴⁴ For example, assigning the right to publish paper copies to P and the right to public performance to Q makes each the sole owner of their respective rights. One co-owner of a copyright cannot perform or authorize infringing acts related to the work without

38 Copyright Act, s 40.

39 The Copyright Act, s 76.

40 Ibid, s 7.

41 Ibid, s 40.

42 Chioma O. Nwabachili et al, 'Authorship and Ownership of Copyright: A Critical Review' (2015) *Journal of Law*, Vol.34, 1.

43 Ibid.

44 Ibid.

the consent of the other co-owners.

3. COPYRIGHT PROTECTION AND ITS CHALLENGES

3.1 Traditional Copyright Laws and AI-Generated Works

Copyright law traces its origins back to the Renaissance, coinciding with the advent of the printing press.⁴⁵ The earliest recorded copyright grant occurred in England in 1557 when the Crown bestowed a monopoly over printing to the Stationers' Company.⁴⁶ Initially, this was more about censorship than protecting authors' rights.

The contemporary notion of copyright began to take shape in the 18th century. The British Statute of Anne, enacted in 1710, is widely acknowledged as the first copyright law centered on authors' rights, giving them exclusive control over their works for a limited period, after which the works would enter the public domain.⁴⁷

Three foundational principles emerged from the Statute of Anne (1710):

1. Copyright safeguards the expression of ideas, not the ideas themselves.
2. Copyright is time-limited, balancing the need to incentivize authors while eventually allowing societal access to works once protection expires.
3. Copyright holders are granted exclusive rights, such as reproduction, distribution, and adaptation of their works.

These principles significantly influenced international treaties like the Berne Convention of 1886, which harmonized copyright protections among member nations and underscored the principle of national treatment, ensuring foreign authors were afforded the same protections as domestic ones.⁴⁸

Throughout the 20th century, copyright law expanded to address emerging technologies, ranging from phonographs to digital media. For instance, the Digital Millennium Copyright Act (DMCA) of 1998 in the USA tackled issues related to the internet, particularly concerning digital reproduction and distribution. Despite these developments, the core goal of copyright law remains consistent: balancing the rewards for creators with the promotion of public access and innovation.⁴⁹

45 Syed Wajdan Rafay Bukhari et al, 'Impact Of Artificial Intelligence on Copyright Law: Challenges and Prospects' (2024) <<https://www.researchgate.net/publication/377334695>> accessed 30th June 2024.

46 Lyman Ray Patterson, *Copyright in Historical Perspective* (Vanderbilt University Press 1968); *Ibid.*

47 *Ibid.*

48 *Ibid.*

49 *Ibid.*

Traditionally, copyright laws are designed to protect human authors without any anticipation of works created by AIs. As already discussed, the Copyright Act of Ghana defines an author as the person who creates the work. A person could be either a natural person or a legal person. The Interpretation Act of Ghana defines a person as including a body corporate, a corporate sole, an unincorporated body and an individual.⁵⁰ It does appear that these laws were designed with human authors in mind because of the fact that copyright is conferred on original works that involve the exercise of skill and judgment, and which are in tangible form. Secondly, human authors are granted specific exclusive rights over their original works. These rights include the ability to publish their work, earn financial benefits, transfer copyright ownership, and protect their reputation from any actions that might harm it.⁵¹ The Berne Convention is a fundamental element of copyright protection, exemplifying the principles of authorship. This international treaty ensures that literary and artistic works receive worldwide protection, benefiting authors and their successors in title.⁵² By doing so, it empowers authors to assert their rights and safeguard their creative expressions. The Berne Convention also promotes transparency by encouraging the clear identification of the author's name or pseudonym, thereby removing any ambiguity about the author's identity.⁵³

Significantly, therefore, it is axiomatic that AI is not a legal or a natural person and thus is not recognised by these legislations. This raises pertinent questions as to who then is the author of work generated by AI, and whether the said work could be said to be the product of skill, ingenuity and judgment as required by copyright laws for the work to be original. The subsequent sections of this Article will be dedicated to undertaking this exploration.

3.2 Historical Context and Development of AI

Artificial intelligence has come a long way since its inception. The concept of machines capable of performing tasks that typically require human intelligence was first proposed in the mid-20th century.⁵⁴ Early AI research focused on problem-solving and symbolic methods, leading to the

50 Interpretation Act, 2009 (Act 792) s 46.

51 Copyright Act, s 5&6.

52 Hafiz Gaffar & Saleh Albarashdi, 'Copyright Protection for AI-Generated Works: Exploring Originality and Ownership in a Digital Landscape' (2024) *Asian Journal of International Law* <doi:10.1017/S2044251323000735> accessed 30 June 2024.

53 Ibid.

54 Chris Smith et al., 'The History of Artificial Intelligence' (2006) <<https://courses.cs.washington.edu/courses/csep590/06au/projects/history-ai.pdf>> accessed 30 June 2024.

development of the first AI programs in the 1950s and 1960s.⁵⁵

In the decades that followed, AI research experienced periods of optimism and stagnation, often referred to as “AI winters.”⁵⁶ However, significant breakthroughs in machine learning, neural networks, and computational power in the late 20th and early 21st centuries led to a resurgence in AI development. Modern AI systems, particularly those utilizing deep learning techniques, have demonstrated remarkable capabilities in areas such as image and speech recognition, natural language processing, and autonomous decision-making.⁵⁷

The term “Artificial Intelligence” was coined by John McCarthy in 1956.⁵⁸ Currently, there is no settled legal definition of “artificial intelligence.”⁵⁹ AI can be described as “the ability of machines to perform tasks that typically require human intelligence.” In 1990, Ray Kurzweil defined AI as “the science of making computers perform tasks that require intelligence when executed by humans.”⁶⁰ AI generally refers to the “capability of machines to undertake cognitive tasks such as thinking, perceiving, learning, problem-solving, and decision-making.”⁶¹ According to Russ Pearlman, “the main objectives of AI encompass reasoning, knowledge, planning, learning, natural language processing (e.g., understanding and speaking languages), perception, and the ability to move and manipulate objects.”⁶² The World Intellectual Property Organization (WIPO) identifies three categories of AI systems: (i) “expert (or knowledge-based) systems,” (ii) “perception systems,” and (iii) “natural language systems.”⁶³

AI’s impact on creative industries has been profound. From generating music and visual art to writing literature and creating digital content, AI systems are increasingly capable of producing works that are indistinguishable from those created by humans.⁶⁴ Examples include AI-generated paintings that have been sold at prestigious auction houses,

55 Ibid.

56 REDACTED, A (Brief) History of Machine Learning (2023) < <https://www.sparkfun.com/news/7896/> > accessed 30 June 2024.

57 Amirhosein Toosi et al., ‘A Brief History Of Ai: How To Prevent Another Winter (A Critical Review)’ (2021) < <https://www.researchgate.net/publication/354387444> > accessed 30 June 2024.

58 Fredy Sánchez Merino, “Artificial Intelligence and a New Cornerstone for Authorship”, WIPO-WTO Colloquium Papers, 2018, p. 28.

59 Philip C. Jackson, *Introduction to Artificial Intelligence 1* (Dover Publications, Inc. 1985).

60 Nina Fitzgerald and Eoin Martyn, “An In-depth Analysis of Copyright and the Challenges presented by Artificial Intelligence”, Ashurst’s Website, March 11, 2020, <https://www.ashurst.com/en/news-andinsights/insights/an-indepth-analysis-of-copyright-and-the-challenges-presented-by-artificial-intelligence/>; accessed 1 July 2024.

61 Sanjivini Raina, “Artificial Intelligence through the Prism of Intellectual Property Laws” in V.K. Ahuja and Archa Vashishtha, *Intellectual Property Rights: Contemporary Developments 133-41* (Thomson Reuters, 2020).

62 Russ Pearlman, “Recognizing Artificial Intelligence (AI) as Authors and Inventors under U.S. Intellectual Property Law”, 24 (2) *Richmond Journal of Law & Technology* 4 (2018).

63 WIPO, “WIPO Worldwide Symposium on the Intellectual Property Aspects of Artificial Intelligence”, WIPO, March 25, 1991 < https://www.wipo.int/edocs/pubdocs/en/wipo_pub_698.pdf > accessed 1 July 2024.

64 Prachi Pathak, ‘Challenges in Protecting Copyright For AI-Generated Content’ (2024) *IJCRT*, Vol 12, Issue 2, 772.

music composed by AI algorithms that rival human compositions, and AI-written articles and stories.⁶⁵ AI-generated content is now being utilized in various fields, such as journalism, advertising, art, and entertainment. For example, AI algorithms can analyze data to produce coherent news articles, compose music, or create visual artworks that mimic the style of famous artists. These applications demonstrate AI's potential to increase efficiency, foster new forms of creativity, and expand the limits of human expression. However, they also raise issues related to attribution, authenticity, and the potential displacement of human creators within the creative ecosystem.⁶⁶

3.3 Artificial Intelligence and Copyright Protection

The ability of AI to mimic human creativity raises questions about the nature of authorship and the value of human creativity. If an AI system can produce a work of art or a piece of literature that is indistinguishable from a human creation, does the AI deserve recognition as the author? Or should the credit go to the human programmers and data scientists who developed and trained the AI?

The legal implications of AI-generated content are complex and multifaceted. Traditional copyright laws were not designed to address the unique challenges posed by AI, leading to uncertainty and debate within the legal community. AI harbours the capability to generate a substantial volume of work in a brief timeframe with minimal investment.⁶⁷ The question is whether the works independently created by these AIs can be considered as original. Can the work be the exercise of skill and judgment so that the requirement of originality for copyright can be met? This is particularly so, due to the fact that AIs are preprogrammed with certain languages which enable them to explore large databases and generate content within the shortest possible time. Most of the works generated by AIs are derived from patterns of existing works already in existence. Consequently, although the work may be independently generated by AI, it is doubtful if such work could meet the test of originality which is cardinal in copyright protection.⁶⁸ Even if it is argued that the fact of generating content from patterns of existing work amounts to fair use of such works by the AI, it is contended that fair use in itself will not be sufficient to grant authorship to the AI for fair use amounts to only a

65 Ibid.

66 Abdikhakimov Isombek Bahodir ugli, 'Unraveling the Copyright Conundrum: Exploring AI-Generated Content and its Implications for Intellectual Property Rights' Online Scientific Conferences.

67 Ibid.

68 Syed Wajdan Rafay Bukhari et al, 'Impact of Artificial Intelligence on Copyright Law: Challenges and Prospects' (2023) JLS Volume 5, Issue 4, pp 647.

permissive use of an already copyrighted work and thus, is not intended to confer authorship on the AI.

Furthermore, AIs are constantly regenerating and thus, any content created is susceptible to change. This raises the question as to whether content generated by AIs could be said to be in a tangible or fixed form as required by copyright laws.⁶⁹

It has further been argued that human creativity is often linked to emotions, experiences, and intent. AI-generated content, while technically proficient, might lack the depth, emotion, or cultural context that human artists infuse into their works.⁷⁰ Furthermore, as AI enters the realm of creativity, the role and identity of the human artist are under scrutiny. Are they the creator, curator, or collaborator when using AI tools? This blurring of lines poses philosophical challenges about the essence of human creative expression which is an essential requirement of copyright protection.⁷¹ While AI offers immense potential to augment human creativity and open new avenues of artistic exploration, it also presents challenges that force society to reflect on the nature of creativity, authenticity, and the role of the artist in the digital age.⁷²

Again, if AI-generated content can be copyrighted, who should receive the economic benefits? Should it be the developers, the users, or perhaps a separate entity or trust that could allocate the funds for societal benefits? Additionally, moral rights, which are recognized in many jurisdictions, protect the personal and reputational value of a work for its creator.⁷³ With AI, the application of these moral rights becomes unclear. Can a machine have reputational concerns? If not, do these rights transfer to human operators?⁷⁴

Moreover, the proliferation of AI in creative industries can disrupt traditional economic models. If AI can produce content rapidly and inexpensively, it could challenge the livelihoods of human artists and creators. As AI tools become more accessible, there's potential for misuse. Plagiarism, copyright infringements, or the creation of misleading or harmful content can become pressing issues.⁷⁵

The question of whether AI-generated works can be copyrighted hinges on how the work is categorized. It is essential to distinguish between fully

69 Ibid.

70 Ibid.

71 Ibid.

72 Ibid.

73 Ibid.

74 Ibid.

75 Ibid.

AI-generated works and AI-assisted works, as these categories are treated differently in most legal systems.⁷⁶ Fully AI-generated works are created autonomously by AI systems without human intervention, whereas AI-assisted works involve human input or assistance in their creation.

The eligibility of a work for copyright protection is fundamentally based on its originality, which, similar to patents, revolves around human creativity. Originality requires that the work is independently created by the author and not copied from another source, whether copyrighted or in the public domain. With AI's lack of conscience and emotions, it becomes difficult to ascertain whether work created by AI is the result of skill and judgment.

For instance, in *Naruto v. Slater*,⁷⁷ a macaque monkey named Naruto took a selfie using a camera owned by British photographer David Slater. People for Ethical Treatment of Animals (PETA) sued Slater, arguing that the monkey owned the copyright. The U.S. Ninth Circuit Court of Appeals ruled that animals could not hold copyright. The Court ruled that the Copyright Act did not grant the animals the right to sue for copyright infringement. It was argued that the concept of the next friend should be applied to enable the animal through a human being. This argument was, however, discarded by the Court on grounds that the next friend doctrine applies in certain specified instances such as where the actual person is suffering from some mental defect or condition. The Court noted that a work will only be entitled to copyright protection if it is original in the sense of being the result of creative and intellectual effort by the author.

For works created with the assistance of AI, they may qualify for copyright, with the human contributor potentially being recognized as the author.⁷⁸ However, it is not entirely clear how much human contribution is necessary for a work to be eligible for copyright protection. While the human input should not be minimal, the exact level of contribution required for copyright eligibility remains uncertain.

4. COMPARATIVE ANALYSIS OF COPYRIGHT LAWS AND HOW THEY ADDRESS THE COMPLEXITIES OF AI

4.1 The European Union

The European Union has undertaken significant inroads towards the

⁷⁶ Eightgeeks, 'Demystifying Copyright in the Age of Artificial Intelligence: Legal Perspectives Unveiled' <<https://eightgeeksatlaw.wordpress.com/2024/05/23/demystifying-copyright-in-the-age-of-artificial-intelligence-legal-perspectives-unveiled/>> accessed 1 July 2024.

⁷⁷ No. 16-15469 (9th Cir. 2018).

⁷⁸ *Mr Lee v Ms Liu* [27 November 2023]

regulation of AI. The question which however remains, is whether AI-generated works are entitled to copyright protection. In one of its reports, the European Commission notes that AIs are merely tools that assist in the production of large datasets or that can be used in diverse industries for the creation of various products. However, the report maintains that works entirely generated by AI lack inherent intellectual effort and thus, do not meet the test of originality required for copyright protection.⁷⁹ The concept of “the author’s own intellectual creation” implies, in the first place, that the subject matter must be “the author’s own”, i.e. not copied. In the second place, and more importantly, it must constitute an “intellectual creation” by the author.⁸⁰ This further connotes that the author must have the ability to make free choices among various possibilities for such work to be regarded as the result of an intellectual exercise.⁸¹

For instance, in the *Painer case*,⁸² the dispute arose out of events surrounding the abduction in 1998 of Natascha Kampusch, a.k.a. Natascha K., then aged 10, and her escape in 2006. The dispute centred on the use by certain newspapers (right) of portrait photographs of Natascha K. taken by a freelance portrait photographer, Ms. Painer, prior to the child’s disappearance.

When Natascha escaped from her captor in 2006, and before she had yet made her first public appearance as an 18 year-old, the newspapers lacked an up-to-date photograph to show their readers. Rather than await the inevitable press conference, they republished the old portrait photos of Natascha as a child and also generated from these photos a simulated “photo-fit” of what she might look like in 2006. Ms Painer objected to both the republication of her pictures and the publication of the photo-fit images which were, she argued, adaptations of her work.

The European Court of Justice held at paragraph 89-92 of the judgment thus:

89 ...that is the case if the author was able to express his creative abilities in the production of the work by making free and creative choices (see, *a contrario*, **Joined Cases C403/08 and C429/08 Football Association Premier League and Others** [2011] ECR I0000, paragraph 98).

79 European Commission, Directorate-General for Communications Networks, Content and Technology, Hartmann, C., Allan, J., Hugenholtz, P. et al., *Trends and developments in artificial intelligence – Challenges to the intellectual property rights framework – Final report*, Publications Office of the European Union, 2020 <<https://data.europa.eu/doi/10.2759/683128>> accessed 1 July 2024; *Levola Hengelo BV v Smilde Foods BV*, C-310/17.

80 Ibid.

81 Ibid.

82 (Case C-145/10).

92 By making those various choices, the author of a portrait photograph can stamp the work created with his 'personal touch'.

The Court noted that the work must be the product of an intellectual effort for it to qualify for copyright protection.

A similar position was held by the Court in *the Cofemel – Sociedade de Vestuário SA v. G-Star Raw CV*,⁸³ the Court stressed that the concept of 'work' that is the subject of all those provisions constitutes, as is clear from the Court's settled case-law, an autonomous concept of EU law which must be interpreted and applied uniformly, requiring two cumulative conditions to be satisfied. First, that concept entails that there exists an original subject matter, in the sense of being the author's own intellectual creation. Second, classification as a work is reserved to the elements that are the expression of such creation.⁸⁴

Further, the CJEU held in *Judgement of 16 July 2009, Infopaq International A/S v Danske Dagblades Forening, C5/08, EU:C:2009:465* that copyright will only subsist if there is originality flowing from the "author's own intellectual creation".

As to what is meant by originality, the Court underscored in *Lithoss Nv v. Vimar S.P.A. and Vecolux Bv*,⁸⁵ that a work is copyrightable if it is original, meaning that it embodies an author's own intellectual creation, expressing their personality. This occurs when the author expresses their creative work by making free and creative choices. On the contrary, a work is not original when the shape is only dictated by technical constraints. The author has the burden to prove the original character of the work. This therefore means that if the author of the work is AI, it may not meet this test laid down by the Courts and thus, is not entitled to copyright protection.

The EU parliament has, however, come out with legislation to regulate the use of Artificial Intelligence. Article 1 of the Regulation states that the purpose of the Regulation is to improve the functioning of the internal market and promote the uptake of human-centric and trustworthy artificial intelligence (AI), while ensuring a high level of protection of health, safety, fundamental rights enshrined in the Charter of Fundamental Rights, including democracy, the rule of law and environmental protection, against the harmful effects of artificial intelligence systems (AI systems) in the Union, and to support innovation.

⁸³ ECLI:EU:C:2019:721.

⁸⁴ Ibid.

⁸⁵ Antwerp Court of Appeal, 2021/AR/1900, 13th September, 2023.

The EU Artificial Intelligence Act is the world's first concrete initiative for regulating Artificial Intelligence. It aims to turn Europe into a global hub for trustworthy AI by laying down harmonized rules governing the development, marketing, and use of AI in the EU. The AI Act aims to ensure that AI systems in the EU are safe and respect fundamental rights and values. Moreover, its objectives are to foster investment and innovation in AI, enhance governance and enforcement, and encourage a single EU market for AI.

The AI Act has set out clear definitions for the different actors involved in AI: providers, deployers, importers, distributors, and product manufacturers. This means all parties involved in the development, usage, import, distribution, or manufacturing of AI systems will be held accountable.⁸⁶ Moreover, the AI Act also applies to providers and deployers of AI systems located outside of the EU, e.g., in Switzerland, if the output produced by the system is intended to be used in the EU.⁸⁷ Based on the model repository, the AI systems can be classified by risk. The EU AI Act distinguishes different risk categories:⁸⁸

1. Unacceptable risk
2. High Risk
3. Limited Risk
4. Limited Risk.

The Act does not, however, provide whether works generated by AIs should be protected by copyright. It merely provides that providers or deployers of AI systems must comply with the requirements of copyright directives provided by the Union. This still leaves open the question as to whether AI should be given copyright protection for content generated by it.⁸⁹

4.2 The United States of America.

The United States of America, just like the EU takes the position that for a work to qualify for copyright protection, it must be the product of an

⁸⁶ Artificial Intelligence Act, Article 2.

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*, Article 6.

⁸⁹ *Ibid.*, Article 53.

intellectual effort which is original in nature. The US Copyright Office and the Courts have consistently maintained that the Copyright Act protects, and the Office registers, “original works of authorship fixed in any tangible medium of expression.” Courts have interpreted the statutory phrase “works of authorship” to require human creation of the work.⁹⁰ For this reason, courts have uniformly rejected attempts to protect the creations of non-humans through copyright. For example, the Ninth Circuit held that a book containing words “‘authored’ by non-human spiritual beings” can only gain copyright protection if there is “human selection and arrangement of the revelations.”⁹¹

For instance, in *Thaler v. Perlmutter*,⁹² the Court observed thus:

By its plain text, the 1976 Act . . . requires a copyrightable work to have an originator with the capacity for intellectual, creative, or artistic labor. Must that originator be a human being to claim copyright protection? The answer is “yes. Because copyright protection is only available for the creations of human authors, “the Office will refuse to register a [copyright] claim if it determines that a human being did not create the work.

In the case of *Théâtre D’opéra Spatial*⁹³ an attempt was made to register before the United States Copyright Office (‘USCO’) a two-dimensional artwork without disclosing the fact that it had been generated using artificial intelligence(‘AI’). The fame of the image however made it known. The Copyright Review Board of USCO stated that the AI-generated content must be disclaimed in the registration application. They concluded that the image, which constituted a substantial portion of the final artwork, was not the product of human authorship. While acknowledging the potential creativity involved in prompting the AI system, they determined that prompts did not equate to human creative control over the resulting image. This decision underscores the Copyright Office’s stance that human authorship is a fundamental requirement for copyright protection and works containing AI-generated content must follow specific guidelines for registration.

In March 2023, the Office provided registration guidance to the public for works created by a generative-AI system. The guidance explained that, in considering an application for registration, the Office will ask: [W] hether the ‘work’ is basically one of human authorship, with the computer [or other device] merely being an assisting instrument, or whether the

90 *Thaler v. Perlmutter*, No. 22-cv-1564, 2023 WL 5333236, at *4 (D.D.C. Aug. 18, 2023) (stating that “human authorship is a bedrock requirement of copyright” in affirming the Office’s refusal to register a work “autonomously” created by AI).

91 *Urantia Found. v. Kristen Maaherra*, 114 F.3d 955, 957–59 (9th Cir. 1997)

92 No. 22-cv-1564, 2023 WL 5333236.

93 US Copyright Office, [5 September 2023].

traditional elements of authorship in the work (literary, artistic, or musical expression or elements of selection, arrangement, etc.) were actually conceived and executed not by man but by a machine.⁹⁴ The report noted that this analysis is “necessarily . . . case-by-case” because it will “depend on the circumstances, particularly how the AI tool operates and how it was used to create the final work.”⁹⁵ To enable the Office to conduct such an analysis, registration applications must disclose AI-generated content that is “more than de minimis. Applicants may disclose and exclude such material by placing a brief description of the AI-generated content in the “Limitation of the Claim” section on the registration application. The description may be as brief and generic as “[description of content] generated by artificial intelligence.” If all of a work’s “traditional elements of authorship” are generated by AI, the work lacks human authorship, and the Office will not register it.⁹⁶ If, however, a work containing AI generated material also contains sufficient human authorship to support a claim to copyright, then the Office will register the human’s contributions.⁹⁷

In the circumstances, it is clear that the US copyright office is not prepared to grant copyright to works or content generated purely by AI. However, if there is sufficient evidence that the substantial part of the contribution to the content was by human effort, then the office may be prepared to confer copyright on the human author.

4.3 United Kingdom

In 1988, the United Kingdom became the pioneer in explicitly providing copyright protection for “computer-generated” works.⁹⁸ According to Section 178 of the Copyright, Designs and Patents Act, 1988 (the 1988 Act), a work is considered computer-generated if it is produced by a computer in such a manner that there is no human author involved. This definition effectively encompasses works generated entirely by artificial intelligence.

The 1988 Act acknowledges the copyright in these computer-generated works and assigns the rights to an author, defined as the person who undertakes the necessary arrangements for the creation of the work.⁹⁹ However, the Act and subsequent UK court rulings do not provide

94 Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence, 88 Fed. Reg. 16,190, 16,192 (Mar. 16, 2023) (quoting U.S. COPYRIGHT OFFICE, SIXTY-EIGHTH ANNUAL REPORT OF THE REGISTER OF COPYRIGHTS FOR THE FISCAL YEAR ENDING JUNE 30, 1965, 5 (1966))

95 Ibid.

96 Ibid.

97 Ibid.

98 Ryan Abbot, “The Artificial Inventor Project” (December 2019) WIPO Magazine <https://www.wipo.int/wipo_magazine/en/2019/06/article_0002.html> accessed 1 July 2024.

99 Copyright, Designs and Patents Act, 1988, s 9(3).

clear guidance on identifying the individual responsible for making these arrangements or specifying which actions qualify as necessary arrangements.¹⁰⁰

The only UK case that has applied Section 9(3) of the CDPA is *Nova Productions Ltd v Mazooma Games Ltd*.¹⁰¹ In this case, the court had to determine whether individual frames displayed on a screen during the play of a computer game were “computer-generated” works and whether the programmer was the author. The court concluded that the programmer was the author because he designed the game’s appearance, the rules, the logic for generating each frame, and wrote the relevant computer program. Thus, he was deemed the person who made the necessary arrangements for the creation of the work.

The court also considered the role of the user, noting that while the appearance of graphics and frames depended on how the game was played, the user was not the author of these artistic works. The user’s input was not artistic, and they contributed no artistic skill or labor, nor did they undertake any necessary arrangements for the creation of the frame images. The user merely played the game.¹⁰²

While the 1988 Act extends copyright protection to computer-generated works, it imposes several exclusions and limitations. These include the absence of the right to be identified as the author or director and the right to object to derogatory treatment of the work. Additionally, the duration of copyright for computer-generated works is reduced to fifty (50) years, compared to the seventy (70) years granted for other works.

Based on this, the CDPA appears to provide copyright protection for AI-generated works, assigning it to the person who made the necessary arrangements for the creation of the work. This could be either the programmer or potentially the user if they contributed artistic skill and labor. However, this interpretation is seen as problematic, especially for AI-generated works, because it is unclear who truly makes the “necessary arrangements” – the programmer or the user.¹⁰³ Moreover, a low threshold for what constitutes making “the necessary arrangements” could lead to a virtual monopoly on AI-generated works. Additionally, the requirement for originality remains ambiguous.¹⁰⁴ It has, however, been contended that despite the foregoing concerns, there are advantages to the UK’s approach, and it is better than the current position under Australian and EU laws,

100 Ibid, s 79(2).

101 *Nova Productions Ltd v Mazooma Games Ltd* [2007] EWCA Civ 219.

102 Ibid.

103 De Roza, Jolyn --- “The Impact of Artificial Intelligence on The Culture Industries and Copyright Law” [2020] UNSWLawJStuS 26; (2020) UNSWLJ Student Series No 20-26.

104 Ibid.

which likely consider AI-generated works as not worthy of protection.¹⁰⁵

4.4 Australia

The Copyright Act 1968 (the “CA”) stipulates that “the author of a literary, dramatic, musical or artistic work is the owner of any copyright subsisting in the work.”¹⁰⁶ While the CA does not explicitly define “author,” Section 35(5) clarifies that only a human can be considered an author. Section 208(1) further specifies that the author of a photograph is the person who owned the material on which the photograph was taken at the time it was taken. These provisions suggest that only humans can be authors and owners of works under the CA.

Recent Australian case law has taken a stricter stance on originality and authorship. In *Desktop Marketing Systems v Telstra Corp*,¹⁰⁷ the court deemed that the “industrious collection” involved in creating telephone directories was sufficient for originality, even with substantial computer use. However, this was overturned in *IceTV Pty Limited v Nine Network Australia Pty Limited*,¹⁰⁸ where the court ruled that minimal skill and labour in creating a TV schedule did not meet the originality requirement. The court emphasized the need for “independent intellectual effort” from a human author and noted that antecedent work leading to the final product does not qualify as authorship.

Consequently, the current Australian approach requires a higher threshold of originality and human direction in creating the work. This implies that AI-generated works, lacking human authorship and intellectual creation, do not qualify for copyright protection under the CA.

Further, in *Telstra Corporation Limited v Phone Directories Co Pty Ltd*,¹⁰⁹ the court ruled that automated processes used to create telephone directories did not qualify for copyright as there were no human authors involved. Human efforts in data collection and entry were deemed irrelevant to authorship. Similarly, in *Acohs Pty Ltd v Ucorp Pty Ltd*,¹¹⁰ the court denied copyright for HTML source code generated by a computer program, as it was not authored by a natural person. The programmers of the system were not considered authors of the output.

Legal commentators have observed that AI-generated works are unlikely

¹⁰⁵ Ibid.

¹⁰⁶ Copyright Act, s 37.

¹⁰⁷ *Desktop Marketing Systems v Telstra Corp* [2002] FCAFC 112.

¹⁰⁸ *IceTV Pty Limited v Nine Network Australia Pty Limited* [2009] 239 CLR 458.

¹⁰⁹ *Telstra Corp Ltd v Phone Directories Co Pty Ltd* [2010] FCAFC 149; [2010] 273 ALR 725.

¹¹⁰ *Acohs Pty Ltd v Ucorp Pty Ltd* [2010] FCA 577.

to be deemed authored under current law, as the role of the user is merely to initiate the automated process, not to direct the material form of the work.¹¹¹

4.5 China

The Chinese Copyright Law is silent on issues involving AI. Although it defines the concept of work in Article 3 as “intellectual achievements that are original and can be expressed in a certain form in the fields of literature, art and science”, this article and other copyright-related regulations do not clearly define whether an object generated by AI constitutes work. This question is therefore left for the courts to consider. The attitude of Chinese courts to this issue has undergone major changes. At the beginning, the Chinese courts followed the international approach by giving a negative answer, evidence of which can be found in the trial guidelines issued by the Beijing High Court (A) and the judgement of the Beijing Internet Court in the *Feilin* case (B).¹¹² However, the Nanshan District Court in Shenzhen gave a positive answer in the subsequent *Tencent case*.¹¹³ In this case, the plaintiff was Tencent, a prominent Chinese internet company that developed the writing robot “Dreamwriter” in 2015. Since its launch, Dreamwriter has produced approximately 300,000 articles annually. On August 20, 2018, Tencent published a financial report generated by Dreamwriter on its website. On the same day, Yingxun company copied and published the entire article on its own website, leading to a copyright dispute between Tencent and Yingxun.

The Nanshan District Court, when determining whether the output in question constitutes a work, considered “whether it reflects the creator’s individual choice, judgment, and skills, among other factors.” This perspective aligns with that of courts in other countries. The court, however, ruled that the automatic generation of the article by Dreamwriter should not be seen as the entire creation process because the software does not operate entirely independently. It identified four necessary steps in generating the article: data service, triggering and writing, intelligent verification, and intelligent distribution.

Furthermore, the court found that Tencent made specific arrangements and choices regarding data input, article themes, writing styles, and other elements. This indicated that the article’s creation involved personalized

111 De Roza (n 101).

112 Zhe Dai, ‘The copyright protection of AI-generated works under Chinese law’ (2023) <<https://www.tribunajuridica.eu/archiva/An13v2/5%20Dai%20Zhe%20and%20JIN%20Bangui.pdf>> accessed 1 July 2024.

113 *Nanshan District Court in Shenzhen, Tencent Computer Company v. Yingxun Technology Company*, Judgement No. 14010, 2019.

choices and arrangements from a human creator. Consequently, the court concluded that the process used by Dreamwriter met the conditions for protecting literary works under copyright law, and the article, as the final output, constituted a literary work.¹¹⁴

Regarding ownership, the Nanshan District Court determined that the article was created by multiple teams organized by Tencent, reflecting Tencent's needs and intentions. Therefore, the court ruled that the article was the work of a legal person created by Tencent, and the copyright belonged to Tencent.¹¹⁵

Also, in November 2023, the Internet Court of Beijing granted copyright to an AI-generated image.¹¹⁶ While other countries, like the United States of America, seem to be going the other way, China has interestingly opened the door of protection for the output of text-to-image models. The Court deemed the image eligible for copyright due to its originality stemming from the numerous positive and negative prompts inserted and the adjustments and amendments made by the human user to select the final image that matched his expectations. Mr Lee (the plaintiff) posted an AI-generated image titled 'The Spring Breeze Brings Tenderness' on Xiaohongshu, a Chinese social media platform similar to Instagram. The image bore the plaintiff's assigned ID on Xiaohongshu. Ms Liu (the defendant) later used the image, without authorisation, on another platform and omitted the plaintiff's ID. The plaintiff filed a lawsuit at the Beijing Internet Court for infringement of copyright, in particular the right of communication to the public on information networks.

The Court ruled in favour of the plaintiff finding the work eligible for copyright for the following reasons. According to the Court, the AI-generated image constituted an original work, falling within the realm of intellectual achievements in art expressed in a tangible form. The image reflected the plaintiff's individual creativity and aesthetic choices made during the creation process. Accordingly, despite the involvement of AI technology, the court recognised the plaintiff's creative intellectual input, including designing, selecting prompts and setting parameters during the image's creation.¹¹⁷ Moreover, the author amended and adjusted the output image several times, until he reached a final image that matched his expectations. The court affirmed the plaintiff's entitlement to copyright ownership, emphasising that AI models lack legal personality and humans remain the creators of works generated using this technology.¹¹⁸

114 Ibid.

115 Ibid.

116 Jing 0491 Min Chu No 11279, *Mr Lee v Ms Liu* [27 November 2023]

117 Ibid.

118 Ibid.

4.5 Ghana

In Ghana, neither the courts nor the Copyright Office have yet addressed whether AI-generated works, whether fully created by AI or assisted by AI, can be copyrighted. The Copyright Act, 2005 (Act 690), does not explicitly address this issue. However, the overall interpretation of the Copyright Act suggests that such AI-generated works may face challenges in obtaining copyright protection.

Similar to U.S. and Austrian law, the Copyright Act bases copyright protection on human authorship. Section 1(1) of the Copyright Act states that “an author, co-author or joint author of any of the following works is entitled to the copyright and protection afforded to that work under this Act...” This implies two things: first, the work must be created by an author, and second, the author is primarily entitled to the copyright. Further, the Act defines an author as the person who creates a work.¹¹⁹ Person, as has already been noted, is defined to mean a natural or artificial legal person. AI does not fall into any of these categories as an AI is not recognised as a person.

Additionally, a work of joint authorship is defined as a work created by two or more authors in collaboration, where individual contributions are indistinguishable from each other. The use of terms like “person” and “individual” in these definitions indicates that human authorship is necessary for copyright protection.¹²⁰ Therefore, wholly AI-generated works cannot be copyrighted in Ghana.

As for AI-assisted works, the conclusion is less clear. The Copyright Act does not address the use of tools in creating an original work, only in making reproductions of an original work. This implies that AI-assisted works may not be protected by copyright without specific amendments to the Copyright Act or broader interpretation by Ghanaian courts.

Ghana has a long way to go in terms of recognition of works created by AI as the law in its current state does not contemplate AI generated works. It is submitted that even a wider interpretation of the Act, cannot possibly cover works generated by AI.

¹¹⁹ Copyright Act, s 76.

¹²⁰ *Ibid.*

4.6 Striking A Balance Between Simulation of AI Innovation and Protection Of Interest Of Creators And Owners Of AI Subject Matters/ Copyrightable Work.

From the discussion so far, it is clear that proponents of recognizing AI as an author argue that AI systems are capable of creating original and valuable works that deserve protection under copyright law. They contend that the creativity and innovation demonstrated by AI systems should be recognized and rewarded, even if the AI itself is not a human.

Thus, AI systems can generate content that is original and indistinguishable from human-created works, demonstrating a form of creativity that merits recognition. Also, advanced AI systems operate autonomously, making decisions and creating content without direct human intervention, which suggests a level of authorship.

On the other hand, opponents of AI authorship argue that AI systems lack the human attributes that underpin traditional notions of authorship, such as creativity, intention, and effort. They contend that recognizing AI as an author undermines the value of human creativity and could have negative implications for the protection of intellectual property.

Thus, AI systems do not possess the human attributes that are central to traditional notions of authorship, such as creativity, intention, and effort. Also, recognizing AI as an author could have negative implications for the protection of intellectual property and the value of human creativity.

The overwhelming majority of jurisdictions, except for China have shown unpreparedness to confer AI systems with copyright protection for works generated by them. This is primarily due to the fact that, the laws require that a work, to be entitled to copyright protection must be an original work generated through intellectual effort. The problem with AI systems generated work is that they are preprogrammed and thus, lacks the element of human intellect. They lack consciousness and emotions which make them unsuitable for meeting the originality requirement which is cardinal for copyright law. The laws in their present state, unless reconsidered may not afford any protection for works generated by AI systems.

4.7 Possible Solutions and Compromises

There are several possible solutions and compromises that could address the challenges posed by AI-generated content while balancing the interests of creators, innovators, and the public. These include:

One possible solution is to attribute authorship to the human programmers

and developers who created and trained the AI systems. This approach recognizes the human creativity and effort involved in developing AI while addressing the limitations of AI itself.¹²¹

Another possible solution is to create new legal categories for AI-generated content, recognizing the unique nature of AI creativity while providing appropriate protections and incentives for human creators. This would require a redefinition of the concept of originality. Thus, it is submitted that reconsidering the traditional criterion of originality to recognize that AI-generated content, while derivative, can possess a distinct form of novelty. It will also be necessary to establish a fixed copyright duration, given the absence of a human author's lifespan as a benchmark. Considering that AI lacks emotions and conscience, there will also be the need to adapt the various rights conferred on authors and owners of work to meet the peculiar needs of AI. Therefore, by ensuring that copyright laws remain relevant and adaptable, policymakers can provide a clear legal framework that fosters creativity and protects the rights of all stakeholders involved.

Also, the concept of fair use and transformative works requires careful consideration in the realm of AI-generated content. It is essential to balance the rights of copyright holders with the transformative capabilities of AI systems. Policymakers should develop guidelines and principles to clarify the boundaries of fair use for AI-generated content, considering factors like the purpose and nature of the use, the character of the copyrighted work, the amount used, and the potential impact on the market. Clear guidelines can foster innovation, creativity, and the advancement of AI technologies while protecting the rights of copyright holders.¹²²

In the case where corporations rely on AI systems to create work, the concept of 'employee' would also need a redefinition such that, where the work was created at the instance of the corporation, then the copyright will be given to the corporation and not the AI. This is consistent with the present law, where employees generate content in the course of their employment, such work belongs to the employer in the absence of any agreement to the contrary.

It is also recommended that there should be a promotion of international collaboration. Given AI's global impact, international collaborations should be encouraged to harmonize copyright standards and address AI-generated content.¹²³ As AI transcends national borders, collaborative efforts among countries can foster consistency and facilitate cross-border protection of intellectual property rights. Policymakers should engage in

121 Syed, (n 43).

122 Abdikhakimov (n 1).

123 Ibid.

international discussions and harmonization efforts to develop unified standards and guidelines for copyright law in the context of AI-generated content. Such cooperation can enhance legal certainty, promote global innovation, and prevent jurisdictional inconsistencies that may hinder the development and dissemination of AI-generated content, as demonstrated through the comparative analysis above.¹²⁴

Another possible solution is to place AI-generated content in the public domain or make it freely available to all, recognizing that it is produced without human creativity and effort while promoting innovation and access to knowledge.

Further, education and awareness initiatives are crucial to equip individuals and organizations with the knowledge and understanding needed to navigate the complexities of AI-generated content. Educational programs should be developed to train professionals in the legal, ethical, and technical aspects of AI-generated content. Additionally, public awareness campaigns can help demystify AI technology, dispel misconceptions, and foster trust in AI-generated content. By promoting education and awareness, stakeholders can make informed decisions, contribute to policy discussions, and engage responsibly with AI-generated content.¹²⁵

5. CONCLUSION AND FUTURE DIRECTIONS

The rapid advancements in AI present significant challenges and opportunities for the field of intellectual property law. As AI systems become increasingly capable of generating original and valuable content, it is essential to reevaluate and adapt copyright laws to address the complexities introduced by AI.

The debate over AI authorship and ownership highlights the need for a balanced approach that recognizes the value of human creativity while addressing the unique capabilities of AI. Possible solutions and compromises include attributing authorship to human programmers, creating new legal categories for AI-generated content, and promoting public domain and open access.

Ultimately, addressing these challenges will require ongoing dialogue and collaboration between legal experts, technologists, policymakers, and stakeholders to ensure that the intellectual property framework remains relevant and effective in the face of rapid technological advancement. The future of AI and intellectual property law will depend on our ability to

¹²⁴ Ibid.

¹²⁵ Ibid.

navigate these complexities and create a legal framework that promotes innovation, protects the interests of creators, and benefits society as a whole.