

Artificial Intelligence and Its Impact on Copyright: A Legal Perspective

Ricardo Daniel Furfaro

Universidad de Ciencias Empresariales y Sociales, Argentina

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Abstract

The aim of this research paper is to provide an overview of the current impact of Artificial Intelligence (AI) on copyright, focusing exclusively on AI-generated works that may be eligible for copyright protection. A central dilemma arises concerning the certainty of copyright-specifically, who owns the copyright in works produced through the use of AI systems. Copyright is a legal concept describing the rights granted to creators of literary and artistic works, including reproduction, copying, performance, and public display.

The growing role of technology in creative processes has significantly expanded and, in some instances, replaced aspects of human involvement. New creative works generated through software programs built on algorithms and databases can no longer be easily distinguished from those produced by human creators. This situation has created substantial uncertainty in both business and legal spheres.

The scope of this article includes (a) an analysis of how key international legal systems address AI-generated creations and their implications for copyright; (b) the identification of possible solutions that governments may adopt to promote legislative uniformity; and (c) an evaluation of how such uniformity could strengthen legal certainty and support ethics and the public interest.

This study follows an explorative, descriptive, qualitative methodology to examine how different countries have approached AI-related legislation, including regulations and enacted laws. The research emphasizes the principles of legal certainty, ethics, and the protection of the public interest.

Findings indicate that countries across different regions are at varying stages in their approach to AI. In the United States, AI-generated works created without human input are not copyrightable. In contrast, Chinese courts have ruled that human intellectual involvement coupled with originality may justify copyright protection for AI-generated works. The United Kingdom (UK) has adopted a more flexible approach, granting copyright to the individual who makes the necessary arrangements for the creation of a work. Overall, North American and European countries have taken the lead. There is a pronounced focus on ethics and the protection of public interest, as reflected in the *Global State of Responsible AI Report* (2024).

Keywords: Artificial Intelligence, Copyright, Regulations, Legal Certainty, Public Interest

Introduction

It is now widely accepted that AI strongly influences the way businesses and individuals operate, producing significant and complex effects on copyright. The key aspiration of businesses is to remain innovative and competitive. According to Aghion et al. (2019), companies are achieving greater profitability and improved performance by integrating AI into their work processes. Even within the security sector, advances in machine learning and AI have marked a turning point in the automation of warfare (Allen & Chan, 2017). Therefore, it is crucial to examine the impact of AI on copyright. AI tools play a decisive role in determining who the rightful owner or holder of copyright is. Haugeland (2019) argues that human thinking and machine computation are “radically the same.” Dr. Shlomit Yanisky-Ravid (2018) of Yale Law School supports the theory that AI systems possess certain cognitive abilities that enable them to independently create inventions and other creative works which, if produced by humans, would qualify for copyright protection under existing legal standards.

Determining how copyright ownership, protection, and enforcement apply to works produced with AI remains one of the most challenging issues for ensuring legal certainty while safeguarding ethics and the public interest. Most countries—including those in the developed world—continue to debate how to confront the challenges posed by AI, and the legal context in developing nations is even less defined. Once a legislative direction is established, countries must craft solid, clear, and consistent laws that uphold legal certainty, emphasize ethics, and protect the public interest.

It is fair to say that the use of AI has profoundly transformed traditional paradigms. Several key challenges must be considered when drawing conclusions for this research:

- a) Ambiguity in legislation. Current laws often fail to address AI-generated works explicitly, making it difficult to reach definitive conclusions. There is no uniform position regarding who should be credited with the copyright in an AI-generated work, though human involvement and originality are generally considered essential.
- b) Global disparities. Jurisdictions continue to adopt divergent approaches to AI and copyright, complicating efforts to amend existing laws. Outcomes depend largely on each jurisdiction's interpretation of originality and the role of human contribution in AI-generated creations
- c) Rapid evolution of AI. The pace of AI development exerts additional pressure on lawmakers, resulting in difficulties adapting legislation and delays in regulatory updates.

The key objectives of this paper are to (a) understand and assess AI's impact on copyright, (b) explore the efforts of various countries-both developed and emerging-to establish legislation on the ownership and protection of AI-generated works, and (c) evaluate whether and how such works may be incorporated into existing copyright frameworks.

Accordingly, this study examines the following issues: (a) Who owns the copyright in outputs produced by AI? (b) Should such copyright be assigned to the programmers or developers of the AI, to the users who direct it, to the AI itself, or to another party? (c) How do the concepts of human involvement and originality apply to AI-generated works? and (d) What legal-certainty, ethical, and public-interest considerations arise when granting copyright to AI-generated content?

Chekuri (2024) defines AI as the field of science and engineering concerned with developing intelligent machines and computer programs. AI focuses on transferring anthropomorphic intelligence and reasoning to machines that can assist humans in various ways (Sivasubramanian, 2021).

According to Joe (2021), a computer exhibits AI when it performs tasks that would normally require human activity. AI may also change the ways in which new ideas and technologies emerge, helping to solve complex problems.

AI has undoubtedly contributed to economic growth (Aghion et al., 2019) and has driven innovation in products and services (Cockburn et al., 2019). For example, in manufacturing and production industries, AI-enabled robotics enhances processes and introduces new challenges for the global economy.

Field (2006) defines copyright as the set of intellectual creations of human beings. Spence (2007) describes copyright as an intangible asset

attributed to an individual creator or identifiable group of creators presumptively entitled to that right.

Hristov (2017) observes that, with the intensified use of AI, an increasing number of works are produced without direct human authorship. Algorithms and learning machines-core components of AI-have become modern sources of creativity.

In certain instances, intellectual-property authorities have denied copyright protection to non-human creative works, releasing them into the public domain for unrestricted access. Other regulatory bodies argue that granting copyright to programmers or developers is crucial for the continued progress of the AI industry. Conversely, some scholars maintain that human involvement in directing or training AI systems satisfies the “human authorship” requirement, while others contend that purely AI-generated works should not be protected. Regulators must provide legal certainty, ensuring that ethical principles and the public interest are safeguarded while minimizing business and legal risks.

It is essential to shape the future of copyright law in the AI era by closing gaps in current legal frameworks, encouraging innovation, protecting creators’ rights, and promoting legal certainty, ethics, and the public interest.

Methodology

The research approach is based on an exploratory, descriptive, and qualitative methodology aimed at determining how different countries have approached the intersection of AI and copyright. This study focuses primarily on doctrinal and comparative legal analysis, supported by limited empirical data collection to illustrate specific legal trends and practices

- A. Doctrinal Analysis: This part of the research begins by analysing existing copyright laws in relation to AI-generated content. It includes an extensive review of current international copyright regulations, domestic legal frameworks, and relevant case law to identify how the concept of authorship and originality is interpreted across jurisdictions.
- B. Comparative Analysis: The study compares how different jurisdictions address the intersection of AI and copyright. Key jurisdictions considered include the United States, China, the European Union, the United Kingdom (UK), India, and emerging markets such as Argentina. The comparative perspective seeks to identify both convergences and divergences in national approaches and to evaluate the extent to which each legal system accommodates AI-generated works within its copyright framework.
- C. Case Law: This section analyses selected judicial decisions involving AI-generated works to understand how courts in different jurisdictions are currently addressing these issues. Special attention is given to the

interpretation of human authorship, originality, and ownership in cases where AI systems play a substantive creative role.

Results

Among its many applications, it is important to emphasize AI's growing capacity to create artistic, literary, and other types of intellectual works. Such creations may establish limits to human creativity. AI uses technology to automate tasks that would normally require human intelligence (Surden, 2019).

To determine who owns the copyright in a work generated by AI, countries will need to clearly define their legal approach to AI-generated works and, if necessary, review existing legislation or enact new laws.

The fundamental question this research seeks to answer is: Who holds the copyright over an AI-generated creation? Possible answers include: a) the AI programmer; b) the AI developer, c) the individual who uses the tool to generate the work (the user), or d) the resulting work being considered part of the public domain (without specific authorship)

Copyright refers to creations of the mind-such as inventions, literary, and artistic works-according to the World Intellectual Property Organization (WIPO). However, advances in AI technology now enable the creation of content that rivals human creativity across various disciplines. This development raises complex discussions within copyright law, particularly regarding the legal status of AI-generated works. Traditional copyright systems have been built around human creativity, creating uncertainty about how to treat AI-generated content from a strictly legal standpoint.

Generative AI can produce copyrightable material that appears to originate from a human author. The extent to which AI-generated works meet this requirement remains the subject of ongoing debate. WIPO has emphasized the need for international consensus and is actively consulting with member states to establish uniform criteria. The current situation of generative AI and copyright in key jurisdictions is as follows:

United States (US)

The 1787 US Constitution and, subsequently, the Copyright Act of 1976 established the framework for copyright. Works protected by copyright must comply with two requirements: (a) the author must be a human being, and (b) the work must be original. What does originality mean in terms of copyright? It refers to a work created by a human being that is not copied and demonstrates at least minimal creativity. Nonetheless, US courts have ruled that works generated by AI without human creativity are not copyrightable. Similarly, the US Copyright Office (USCO) has denied copyright protection to works without human intervention in various cases. Prompts given to

generative AI software resulting in complex outputs are not sufficient for copyright protection under current US legislation. In 2023, the USCO denied registration for “*Théâtre D’opéra Spatial*”, an image generated using the AI tool Midjourney. USCO determined that AI-generated elements dominated the work and that human contribution had been minimal, making it ineligible for copyright protection. Earlier, it had rejected a copyright claim for a work created independently by AI without meaningful human input (“*A Recent Entrance to Paradise*”), a decision later confirmed by a US District Court in *Thaler v. Perlmutter* (2023). In addition, US case law provides a minimal standard of originality required for copyright protection (Samuelson, 2017).

China

China has shown a somewhat more flexible approach toward protecting AI-generated content. On November 27, 2023, the Beijing Internet Court (BIC) ruled in an infringement lawsuit (*Li vs. Liu*) that an AI-generated image can be copyrighted and that the human who prompted the AI has the right of authorship under Chinese copyright law. The AI-created image in dispute was considered a “work” under the Chinese Copyright Law.

According to Wang & Zhang (2024), the court considered four elements to determine whether the image qualified as a work under Chinese law: (1) originality; (2) relation to literature, science, or art; (3) a form of expression; and (4) “intellectual achievement.” The court focused particularly on the “originality” and “intellectual achievement” factors.

The concept of “intellectual achievement” refers to the human intellectual activity involved in the work. Through Stable Diffusion, the plaintiff selected more than a hundred prompts, ordered them, and defined specific parameters. He adjusted and modified those prompts and parameters until producing a final image aligned with his own ideas. These steps demonstrated sufficient evidence that the image resulted from the plaintiff’s intellectual effort. The court stated that “intellectual creation” means the work must reflect a human intellectual contribution. The court analyzed the process of image creation, in which the plaintiff made several input choices—such as selecting a particular AI service provider, designing the character and background (e.g., face shape, hair color, direction of gaze, lighting, background), determining the order of inputs, and adjusting various technical parameters to personalize the image. The court considered this selection and input process as the plaintiff’s intellectual contribution.

Furthermore, “originality” was reflected in the plaintiff’s personalized choices and judgment throughout the creative process, including the choice and combination of prompts and the definition of the final output. Consequently, the court awarded authorship to the plaintiff. It also ruled that the AI model could not be an author, as Article 11 of the Chinese Copyright

Law expressly limits authorship to human beings or legal entities. Therefore, in China, there is a tendency to consider AI-generated results copyrightable if a human is sufficiently involved in generating the result through input prompts, selection, and adjustment of parameters. The AI output must reflect the individual's personal contribution, ideas, and preferences.

Argentina

In Latin America, Argentina's Copyright Law No. 11.723 does not contemplate creations generated by AI. Conversely, the law recognizes only works produced by human beings. Article 17 of the Argentine Constitution protects property in all its dimensions, including copyright.

European Union (EU)

Directive (EU) 2019/790, commonly known as the Directive on Copyright in the Digital Single Market (DSM Directive), does not contain specific provisions for AI-generated works. It maintains the requirement of human creativity for copyright protection. A work must be original, reflecting the author's own creativity. The concept of originality, as interpreted by the Court of Justice of the European Union (CJEU), requires that a work involve individual human contributions. AI-generated works therefore, pose a strong challenge to the principle of human authorship, as they can be created independently by machines.

The DSM Directive does not define "authorship" concerning AI-generated content nor introduce specific rules for AI-generated works. According to Iaia (2025), the European legislator is brief in defining whether a work is original if it reflects the author's own intellectual creation. The key issue is whether an AI-generated work can meet the originality requirement without human intervention. The CJEU has ruled in *Infopaq International A/S v. Danske Dagblades Forening* (C-5/08) and *Eva-Maria Painer v. Standard VerlagsGmbH* (C-145/10) that copyrighted works must "contain elements which are the expression of the author's intellectual creation," and that such creation "is the author's own if it reflects the author's personality." These criteria cannot be met by mechanical or automated processes such as those generated by AI. Therefore, completely independent AI-generated works do not meet the originality requirement. Notwithstanding the lack of explicit provisions, the DSM Directive includes guidance on AI-assisted works, which may qualify for protection if there is a degree of human intervention. For instance, if a human uses AI to create content while exercising control over the process, the resulting work could be eligible for copyright protection, depending on the extent of human contribution to its originality.

United Kingdom (UK)

Traditionally, copyright in literary, dramatic, musical, or artistic (LDMA) works in the UK belongs to the human creator. However, the UK is one of the few countries with specific legal rules for works generated by AI systems. The Copyright, Designs and Patents Act (CDPA) expressly contemplates copyright protection for computer-generated works that lack a human creator. Implementation has been problematic because the legislation does not clearly address the fundamental originality requirement. LDMA works must still comply with the originality test, referring to the independent skill and labor used in creation. Under the CDPA, originality requires “human personality,” “free and creative choices,” and an “author’s personal touch,” not merely technical or mechanical production.

Section 9(3) of the CDPA provides that “in the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.” Thus, authorship is attributed to the human who made the necessary arrangements. However, there is no specific provision establishing originality where human input is limited.

Guadamuz (2017) argues that Section 9(3) was designed as an exception to the originality requirement for such works. Conversely, Bentley (2014) suggests a different originality test-AI-generated works should be deemed original if they have novelty and are not copied, resulting from the independent acts of the AI system. Copinger & Skone (1958) argue that “the relevant skill and labor is that of the person by whom the arrangements necessary for the creation of the work were undertaken.”

In the *Express Newspapers* case, a direct link was found between the programmer’s work and his instructions to the computer, as he played a key role in designing the logic and rules by which outputs were generated and exercised significant control over the final product. Similarly, in *Nova v. Mazooma Games*, the court ruled that “insofar as the composite frames were computer-generated works, the arrangements necessary for their creation were undertaken by the programmer, as he devised the appearance, rules, and logic by which each frame was generated, and wrote the relevant program.” Accordingly, he was considered the author by virtue of Section 9(3).

Both the 1977 Whitford Report and the 1981 Green Paper on Reform of Copyright Protection in the United Kingdom examined who should be regarded as the author of a computer-generated work: the programmer, the originator of the data, or the person operating the computer. However, the subsequent White Paper concluded that no specific provision should be made, as authorship must be determined case by case.

In cases where authorship is defined as “the person by whom the arrangements necessary for the creation of the work are undertaken,” it is key

to identify the individual who initiated and organized the generation of the work-the person without whom the work would not exist.

India

One of the most relevant issues in Indian copyright law is the absence of recognition of AI as an author (Mishra, 2025). According to Sanyal (2024), the main question is whether ownership can be extended to a non-human entity-software, algorithms, etc.-that contributed to a creative result. Current Indian intellectual property law does not recognize software or algorithms as authors of intellectual property eligible for statutory protection. The Copyright Act of 1957 and the Copyright (Amendment) Act, 2012 (collectively, ICA) recognize the human who causes a computer-generated work to be created as the author. The non-human counterpart (software or AI system) cannot be assigned authorship under Section 2(d)(vi) of the ICA.

The Parliamentary Standing Committee's Report No. 161 referred to AI as "a discipline of computer science aimed at developing systems and mechanisms that perform tasks requiring human intelligence, including thinking, perceiving, learning, problem-solving, and decision-making" (Sanyal et al, 2024). While the ICA does not explicitly address AI-generated content, Section 2(d)(vi) specifies that for computer-generated works, the person causing the work to be created is considered the author and holds copyright.

In 2021, the Indian Copyright Office handled a case involving an AI system named *RAGHAV* seeking copyright registration for an artwork titled "*Suryast*." Initially, registration was denied for lack of a human author, but protection was later granted when a human was listed as co-author alongside *RAGHAV*.

In *Eastern Book Company v. D. B. Modak* (2008), the Supreme Court emphasized the concept of originality, ruling that copyright requires a degree of creativity and that merely selecting and arranging existing material, such as legal judgments, did not meet the originality threshold. This precedent is relevant to AI-generated works, as AI often creates content by arranging or processing existing data. Without human creative input, such works may fail to meet originality standards in India.

It is essential to note that AI can independently generate innovative and unique outputs by analyzing vast datasets and patterns in existing works. However, when AI systems are regarded as creators of works generated from input data, the originality of such works is often questioned. Another crucial issue is the manner in which data are obtained. Datasets used to train AI systems-generally derivative works-must be obtained lawfully and with the creators' consent.

Securing copyright for derivative works requires a clear and substantial departure from the original source. While AI tools rely on derivative data, the resulting output is not a direct copy but the product of the model's learning capabilities. Therefore, AI-generated outputs should be recognized as distinctive derivative works that reflect the AI's insights rather than mere rearrangements of pre-existing material.

Under current Indian law, applicants for derivative works must reference the original works in their applications, which could serve as a precedent for requiring similar references for training data used by AI systems.

One of the fundamental principles of Indian copyright law is originality. Section 13 of the ICA provides that copyright subsists in original works, interpreted to mean that the work must originate from the author and involve a minimal level of creativity. This interpretation, supported by case law, complicates attribution of authorship to AI-generated works, as machines lack conscious intent and creativity.

Indian courts have not yet ruled on this issue, but it is likely they will follow principles prioritizing human authorship. Alternatively, India could develop a new licensing system for AI-generated works, allowing human creators to retain certain rights while acknowledging the unique nature of machine-generated creativity. Generative AI tools are trained on large datasets-often publicly available and sometimes copyrighted. However, Indian law offers no protection or licensing mechanisms for authors whose works are used without permission. This issue arose in *ANI v. OpenAI* (2024), before the Delhi High Court, where ANI accused OpenAI of using its exclusive news content to train ChatGPT without authorization, in violation of Sections 17 and 53 of the ICA. OpenAI must demonstrate compliance with "fair dealing" obligations for its use of ANI's content.

India currently has no specific laws on fair dealing or transformative use related to AI training. Copyright owners cannot opt out of having their works used for AI training, as allowed under the EU's AI Act (2025). Consequently, Indian creators lack protection against the misuse of their intellectual property.

Discussion

According to the findings presented in Section 3 (Results), there is currently no global uniformity in how copyright for AI-generated works is addressed. Extensive debate has emerged, and only a few countries have so far introduced provisions in their domestic legislation to regulate AI-generated works. This situation may evolve as AI technology continues to expand and mature. The US and EU maintain human authorship as a prerequisite for copyright protection. USCO has consistently rejected copyright claims for AI-generated works, citing the absence of human intervention. Similarly, the

EU's Copyright Directive (2019) upholds the requirement of human creativity, leaving no space for machine authorship.

In contrast, the UK has adopted a more flexible approach, granting copyright to the individual who “makes the arrangements necessary” for the creation of a work by a machine. CDPA includes provisions for *computer-generated works*, defined as works created by a computer in circumstances where no human author is identified. This approach recognizes the contributions of individuals who use AI to generate creative works, even if they do not directly produce the content themselves. The underlying rationale is that copyright law aims to promote creativity and originality-qualities that AI lacks, as it operates through programmed algorithms without human intention or consciousness. India, meanwhile, is under increasing pressure to introduce legal reforms to address the challenges posed by AI-generated works. Its current copyright framework does not adequately cover these complexities. Global trends in developed nations offer valuable insights that India could adopt to regulate AI-generated works.

The Berne Convention for the Protection of Literary and Artistic Works, to which India is a signatory, emphasizes the protection of works authored by humans. The alignment between EU legal principles and India's obligations under the Berne Convention may lead India to adopt a similar position and to resist granting copyright protection to AI-generated works lacking human intervention. Conversely, India could follow the example of the UK by attributing copyright to the person or entity responsible for making the arrangements necessary for the creation of the AI-generated work-such as developers or programmers behind the AI system. This approach would recognize the essential role of human input in the AI creation process without extending copyright to the AI itself.

Future legislative options may involve either attributing copyright to programmers, developers, and users of AI systems or designing a new legal framework for recognizing machine-generated creations. The pace and extent of progress in this area will depend on how governments across different regions perceive the risks and opportunities brought by AI.

As reflected in Stanford University's 2024 data on global AI trends, efforts continue worldwide to strengthen legal certainty while safeguarding ethics and the public interest.

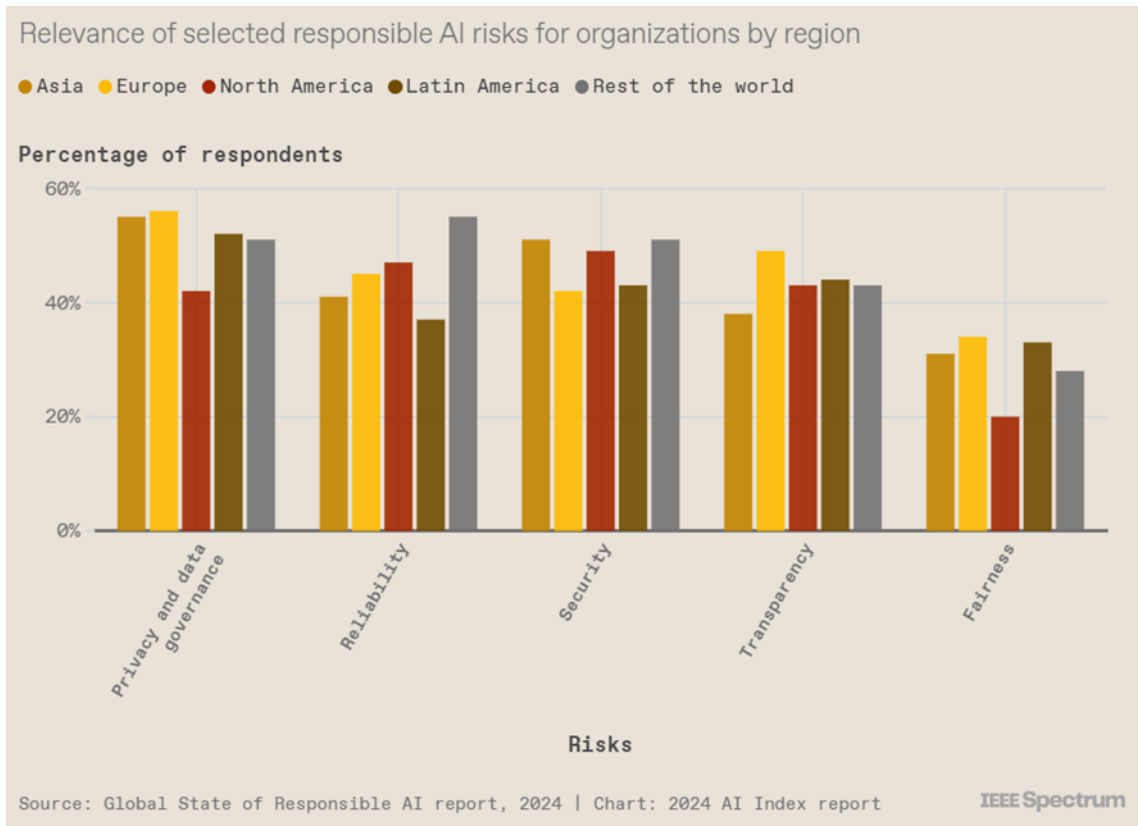


Figure 1

WIPO could develop a regulatory framework to address the copyright status of AI-generated works. Potential solutions include: (1) maintaining the human authorship requirement while recognizing AI as a tool, and (2) granting copyright protection to AI-generated works under specifically agreed conditions. WIPO foresees long-term impacts of AI on copyright. As AI continues to evolve, copyright laws may need to become more flexible to accommodate new creative processes. The increasing adoption of AI in artistic, literary, and musical fields could drive substantial legal reforms in copyright law. There is already a tendency to create a new category generally known as “AI copyright.” However, a broader consensus would be required for this to materialize.

There are both implications and benefits in having adequate and uniform regulations covering copyrightable AI-generated creations, among which the following should be mentioned:

- a) Legal certainty: Clear, transparent, and concise regulations could prevent copyright ownership conflicts among AI programmers, developers, and users.

- b) Legal certainty (bis): Establish specific and clear rules and criteria in domestic legislation for AI-generated creations, including a specific registry under AI authorities where such creations should be registered.
- c) Legal certainty (ter): Summon experts in technology, law, ethics, and AI to design criteria for approving AI-generated works, reducing risks, and emphasizing ethics, human rights, governance, and the sustainable development goals defined by the United Nations.
- d) Incentive for innovation: More investment in AI technologies under uniform regulations would encourage the development of new innovative products.
- e) Increase in competitiveness: Enterprises developing new AI technologies would generate new creations, increasing their product portfolios.
- f) Ethics and public interest: Uniform criteria for AI-generated works would contribute to creating a stronger ethical and public-interest context.
- g) Increase in trade: Uniform standards for AI-generated works would promote an increase in global trade among nations.
- h) Public domain: AI-generated works that do not qualify as copyrightable could enter the public domain, benefiting public interest through free access and use.
- i) Uniformity: WIPO's role is vital in reaching basic uniform rules for countries to set standards on how to apply copyrightability criteria to AI-generated creations.
- j) Common strategies and priorities for global policies: A considerable number of countries began in 2024 to analyze AI policies with the purpose of assessing the ethics of national priorities, which may sooner or later impact the copyrightability of AI-generated creations.
- k) AI plans to measure ethics: AI policies are increasingly being studied by researchers to assess the ethical aspects of national priorities and policies.
- l) Innovation competitiveness vs. ethics/integrity: Although countries compete for AI innovation, priorities are also focused on ethics and integrity, and a balance should be achieved.
- m) Public interest: National priorities in AI are closely related to public-interest standards, reflecting societal and national values in infrastructure plans.
- n) AI plans: Countries position themselves within the complex AI landscape of key issues, priorities, and values.
- o) Culture and education: All member states of the United Nations Educational, Scientific and Cultural Organization (UNESCO) adopted, on November 25, 2021, a historic agreement that defined

common values and principles required to ensure the healthy development of AI. Such an approach will contribute to improving education and cultural values.

- p) Sustainability: AI also supports the decision-making processes of governments and the private sector, helping to combat global problems such as climate change and threats to world order, according to UNESCO.
- q) Challenges: UNESCO has identified a number of challenges to be addressed, such as ethnic bias, significant threats to privacy and dignity, dangers of mass surveillance, and the increased use of unreliable AI technologies in law enforcement. UNESCO claims that the world needs rules for AI to benefit humanity, and its 193 member states are required to report regularly on progress and practices for building the necessary legal infrastructure to ensure the ethical development of AI technology.
- r) Protection of data: UNESCO provides guidance to ensure that digital transformations contribute to achieving sustainable development goals, addressing issues of transparency, accountability, and privacy, with action-oriented policy chapters on data governance, personal data protection, education, culture, labor, healthcare, and the economy. Fighting against increasing inequalities, climate change, and environmental crises is also critical.
- s) Bans: Prohibitions on the use of AI systems for social scoring and mass surveillance will help emphasize the need for non-disruptive social contexts.

Conclusion

The copyright status of AI-generated content remains a major legal matter open to continuous debate in international law and global markets. There is no doubt that AI is making certain human functions obsolete (Rademacher, 2020). While national approaches vary, there is still no uniform international consensus on whether AI-generated works can be copyright-protected and, if so, who should be legally recognized as the owner. WIPO and other international organizations are expected to establish agreed rules so that countries' legal frameworks can successfully address existing and emerging AI challenges from the standpoint of legal certainty, ethics, and public interest.

According to Mays (1952), those who challenge machines' copyright must return to 1950, when Turing posed a key question: "Can machines think?" This reflects a long-term tension between technological innovation and copyright protection that remains unresolved. It is essential to find

reasonably balanced responses that promote AI development without diminishing human intervention in AI-generated creations.

The question of AI as an author should also be considered from philosophical and ethical perspectives. AI does not possess the attributes associated with a human being. Machines are programmed to learn patterns and generate outputs based on pre-existing data, but they do not have independent thought or will. Therefore, AI should be considered a tool rather than a creator, making it difficult to justify granting copyright ownership to a machine.

Moreover, granting copyright protection to AI-generated works could also create both practical and legal conflicts. For example, if an AI system holds copyright, who would be entitled to enforce it? It is evident that machines do not have legal personality, and granting them ownership rights would require a profound reassessment and revision of basic legal principles and standards. Copyright protection could instead be granted to a human programmer, developer, or the entity holding ownership rights over the AI system. Therefore, the human role in AI-generated works is a key issue in copyright law. AI systems, while capable of producing creative outputs, do so using algorithms and pre-programmed data sets, lacking human intention, creativity, and originality. In such a context, human involvement-whether as a programmer, developer, or user-becomes essential when defining copyright ownership.

Authorship has traditionally been defined as human creativity, requiring an element of individual intellectual capability. However, AI-generated works challenge this framework, as the human role may vary from minimal input to detailed programming and data selection. Dr. Arul George Scaria (2018) considers that, in such cases, the human responsible for setting the parameters or programming the AI system could be considered the “author” under the law, given their role in managing the machine’s output.

Based on these considerations, several policy criteria could help provide legal certainty to face this evolving landscape:

1. Amend regulations and legislation where necessary to explicitly address AI-generated works. This could involve defining “computer-generated works” and granting copyright to the individual or entity responsible for the AI’s development. Such a provision would ensure transparency and guarantee that those who contribute to the creative process, even indirectly, are recognized and protected.
2. Acknowledge the essential role of human intervention. Recognizing AI as a tool operated and programmed by humans allows for a pragmatic approach in which copyright is granted to those who make significant contributions to the creation.

3. Design a specific licensing framework for AI-generated works to promote innovation. This framework should account for the unique nature of AI-created content while ensuring that creators, developers, and users have clear guidelines on rights and responsibilities. It would allow creators to retain certain rights while accommodating the distinctive characteristics of machine-generated content. This could include establishing a registration system for AI-generated works and defining terms of use that reflect the contributions of both AI and human operators. Such a framework could foster innovation and ensure fair compensation for all parties involved.
4. Set up a specific regulatory institution capable of assessing technological advancements to ensure fair treatment for both innovation and copyright protection. AI developers could quickly obtain permissions from copyright holders through what is generally known as a self-regulatory organization-such as those countries like India are currently lacking. This initiative would ensure reasonable compensation for creators, streamline the licensing process, and resolve disputes effectively. Individual creators could also achieve this ideal context by recording their complete creative process, including drafts and communications with AI tools. They could maintain better control over how their generated works are used through tailored licenses and ensure their rights are protected. To guarantee compliance with copyright rules, AI companies' training datasets should be regularly audited. Businesses must establish that all training resources used are legally licensed through appropriate user agreements.

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