

Ownership of AI-Generated Works: Who Owns Content Created by AI? The User, Developer, or No One? Examining Gaps in Copyright Law

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Abstract

Text, image, music, and software code creation systems that can autonomously produce content have revealed a serious loophole in modern copyright law. The main issue this paper will discuss is how the authorship and ownership of AI-generated creative works can be established - which is still lacking, causing a great deal of legal ambiguity to developers, users, courts, and policymakers. The article is based on a doctrinal research approach to law, which involves a synthesis of comparative statutory law practice, case law, and an assessment of new policy tools in the United States, the United Kingdom, the European Union, and China. Three underlying tensions are found. To begin with, the doctrine of human authorship simply denies AI-generated works the protection of copyright, leaving their ownership voids. Second, conflicting interests between AI creators, end users, and advocates of the public domain are impossible to reconcile and require a solution at the legislative instead of the purely judicial level. Third, cross-jurisdictional lack of consistency - exemplified by the difference between U.S. and UK practices - creates piecemeal protections that cannot suit global scope of AI-produced material. The article suggests a tiered ownership structure that is adjusted to the level of human creative input, augmented by a sui generis tool of developer interests and a compulsory disclosure duty, and provides a principled way of achieving legal certainty.

Keywords: AI-Generated Works; Copyright Law; Authorship; Legal Ownership; Intellectual Property Right

1. Introduction

The intellectual property law and technological innovation have always been in a productive tension. With the printing press came the phonograph, with photography was the internet, each new technological wave has forced legislators to reevaluate the premises upon which the doctrine of copyright is premised. Artificial intelligence is the greatest challenge to date - one that does not only attack the processes of creative production but the very idea of the author. The Berne Convention, the cornerstone of the international copyright law, refers to the authors and to the literary and artistic works without ever considering the possibility that the author is a machine¹.

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¹ Berne Convention for the Protection of Literary and Artistic Works art. 2, opened for signature Sept. 9, 1886, 828 U.N.T.S. 221 (as revised at Paris July 24, 1971).

The United States Copyright Act of 1976 grants protection to original works of authorship fixed in any tangible medium of expression² - wording that assumes the existence of an author, as well as presupposes the creative guidance of a human being. But today, the GPT-4 of OpenAI, the Gemini of Google, Stable Diffusion of Stability AI, and dozens of other competing engines are regularly generating text, images, musical compositions. The issue of ownership of these outputs and by whom, is not just an academic matter, as it has real and practical implications on the industries, markets, and even livelihoods of people.

This question is much more than a matter of interest to technology firms. Their works are more and more used by human authors, artists, and composers, who are not consulted or compensated to train their AI systems that are competing with them. Articles generated by AI end up in the markets of journalists. Artists Visual artists are visualizing their unique styles being copied on scale by models that are trained on their personal portfolios. AI compositions will be presented to musicians as their compositions. To these creators, the issue of AI copyright is not an abstract one: it is an existential one, an economic and professional issue.

This paper will go as follows. Part II discusses the copyright law foundations, authorship, originality and fixation, and how they apply in the case of AI-generated content. Part III examines the conflicting ownerships among the three main stakeholders: AI developers, end users and the domain of the great general. Part IV will be taking a comparative jurisdictional overview, surveying the policy of the United States, United Kingdom, European Union, and China. Part V deals with the larger policy implication such as of economic incentives, accountability and protection of human creativity. Part VI suggests a comprehensive reform agenda. Part VII concludes.

2. Literature Review

The academic discussion of the issue of AI authorship has evolved quickly within the last ten years, but it is still unresolved in the descriptive and normative aspects. The contributions made early on were generally in the form of a question of curiosity, the natural by-product of a program well-sophisticated enough, and not a burning legal issue. One of the earliest systematic discussions of the question of whether a non-human author could be accommodated by the copyright law was the article by Annemarie Bridy, *Coding Creativity*, published in 2012, which found that the current doctrine was structurally unprepared to accommodate a non-human author without any legislative intervention³.

James Grimmelman has been an influential advocate of the view that computer-authored works, in any meaningful doctrinal sense, are conceptually unimaginable - that any product of a computational process is either the work of the programmer or the user, but not of the machine itself⁴.

The comparative study of the standards of originality concerning common law and civil law jurisdiction by Andres Guadamuz is one of the most in-depth approaches to the issue, and it is suggested that *sui generis* of computer generated works in the UK is the most logical existing legal answer with its limitations in the context of deep learning systems⁵. The recent article by Pamela Samuelson on the topic of generative AI and copyright has

² 17 U.S.C. § 102(a) (2018).

³ Annemarie Bridy, *Coding Creativity: Copyright and the Artificially Intelligent Author*, 2012 *Stan. Tech. L. Rev.* 5, 5-7 (2012).

⁴ James Grimmelman, *There's No Such Thing as a Computer-Authored Work — And It's a Good Thing, Too*, 39 *Colum. J.L. & Arts* 403, 404 (2016).

⁵ Andres Guadamuz, *Do Androids Dream of Electric Copyright? Comparative Analysis of Originality in Artificial Intelligence Generated Works*, 2017 *Intell. Prop. Q.* 169, 170-72 (2017).

intensified the analysis significantly, separating the copyright aspect of ingesting training data on one hand, and the ownership of outputs on the other, which, though similar in real-life contexts, are legally different issues that the previous research literature inadvertently confused⁶.

WIPO, national copyright offices as well as law reform commissions have contributed to the policy literature. In the WIPO Issues Paper on AI and Intellectual Property (2019), the boundaries of the policy responses were listed without supporting one or the other, since there is a profound disagreement between the member states. The most significant recent institutional intervention, which is yet to resolve the ownership question completely, is the U.S. copyright office study of AI⁷ and the EU AI Act of 2024.⁸

One of the major gaps in the current literature is related to the overlap of AI copyright and the issues of accountability and liability. The bulk of scholarship is about the incentive based explanation of why copyright protection works and it tells relatively little about the manner in which the allocation of ownership impacts the distribution of the legal responsibility of harmful AI-generated content. The paper attempts to fill this gap, placing the question of ownership in the context of a larger accountability.

3. Hypothesis

The current system of copyright law, designed wholly based on the human authorship and creativity, is structurally insufficient to address the issue of ownership of AI-generated works, and this structural inefficiency, unless addressed by legislative reform, will cause legal uncertainty that will disproportionately harm human creators, will increase the concentration of intellectual property rights in the hands of AI developers, and will erode the incentive-based purpose of copyright protection.

It is also theorized that a tiered ownership system, adjusted to a quantifiable extent of human creative input in the creation of AI-created works and supplemented with a sui generis protection tool to the interests of the developer, will better balance the competing rights of developers, users and the public than any individual-stakeholder ownership system so far put forward across prominent jurisdictions.

This includes two hypotheses that are interrelated, as is conventional in legal research articles:

- H1 (Problem Hypothesis) - states that the existing law is structurally inadequate and defines what the inadequacy of the law is.
- H2 (Solution Hypothesis) - states that the tiered framework suggested in the paper is better than the current ones, which provides the paper argument either something to test and falsify toward.

4. Objectives of the Study

There are four main objectives followed by this paper:

- Firstly, it seeks to conduct a systematic doctrinal inquiry into how current copyright law, in its application to AI-generated creative outputs, satisfies the requirements of authorship, originality and fixation, and where the current doctrine does not give sufficient guidance.
- Second, it attempts to compare the conflicting ownership interests of the three primary stakeholder groups, including AI developers, end users, and the public, to both current

⁶ Pamela Samuelson, *Generative AI Meets Copyright*, 381 Science 158, 158–60 (2023).

⁷ U.S. Copyright Office, *Copyright and Artificial Intelligence: Part 1 — Digital Replicas* (2023).

⁸ Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 Laying Down Harmonised Rules on Artificial Intelligence (EU AI Act), 2024 O.J. (L 1689) 1.

legal norms and normative principles of fairness, proportionality, and the incentive theory.

- Third, it provides a comparative study of how legislative and judicial systems of four key jurisdictions, namely the United States, the United Kingdom, the European Union, and China, responded to AI-generated works, both with an aim of identifying the best practices and pointing to the dangers of the fragmentation of regulations in a globalized digital space.
- Fourth, and most daring, it suggests a practical and tangible reform agenda that can be taken by legislatures and international institutions to deal with the ownership question in a way that is consistent with the original aims of copyright law, promoting creativity, author protection, and the enrichment of the public domain.

5. The Doctrinal Framework: Authorship, Originality,

AND FIXATION

The human authorship condition of copyright law is a sign of profound normative dedication to the concept that creative output is an expression of personal human personality and judgment. The U.S. Copyright Office has made it clear that it will not accept such works as having been created by nature, animals, or plants and has gone further through administrative practice to reject as such works that were created by a machine alone, even when the developer of the AI asserts otherwise by claiming to have created and operated the machine⁹. This has been explicitly affirmed in *Thaler v. Perlmutter* in which the court ruled that human authorship is a bedrock requirement of copyright.¹⁰

The originality test set forth by the Supreme Court in *Feist Publications, Inc. v. Rural Telephone Service Co.* assumes that the work has its genesis in the author and that it possesses a minimum level of creativity¹¹. This is a consciously modest test that nonetheless assumes that there is an identifiable human agent whose free will is embodied in the work. The problem with generative AI is that the decisions that result in a particular output (the selection of training data, the architecture of the model, the setting of the parameters) are distributed among many human players and computation in such a way that it cannot be determined which of the various creative decisions present in any particular output are the work of any one individual.

Ryan Abbott has suggested that the fixation requirement, which, despite being facially unproblematic to AI-generated works, nevertheless interacts with authorship in an important way, is also implicated by the fact that an AI-generated work that is saved also fixes the work, which is to say that the fixation requirement is traditionally understood to be a mark of authorship.¹²

6. Competing Claims to Ownership

The argument that the developer is the owner of the AI-generated works is based mainly on the analogy of work-to-hire and on the amount of investment in the AI system. Firms like OpenAI, Google DeepMind, and Stability AI have spent billions of dollars to come up with neural networks, training data, and tune model outputs. It is argued that when the AI is perceived as a tool or instrument of its author the developer i.e. the party who constructs and implements the tool should be considered the author of the outputs

⁹ U.S. Copyright Office, *Compendium of U.S. Copyright Office Practices* § 313.2 (3d ed. 2021) (providing that the Office will not register works produced by machines alone without human authorship).

¹⁰ *Thaler v. Perlmutter*, No. 22-1564, slip op. at 8–9 (D.D.C. Aug. 18, 2023) (holding that human authorship is a bedrock requirement of copyright and affirming refusal to register an image generated solely by an AI system).

¹¹ *Feist Publications, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991) (holding that copyright requires independent creation plus a modicum of creativity).

¹² Ryan Abbott, *The Reasonable Robot: Artificial Intelligence and the Law* 45–48 (Cambridge Univ. Press 2020).

of the tool. This is most clearly reflected by the Copyright, Designs and Patents Act 1988 of the United Kingdom, which places the copyright in computer generated works in the person in whom the arrangements by which the work is created are made.¹³

The argument of the user is based on the character of prompting process. With the development of more advanced generative AI systems, the output quality and detail of their output have increasingly become dependent upon the quality and detail of the input prompts. An effectively developed prompt, with its tone, structure, style, content, and storyline, is a matter of real intellectual labor and creative decision-making. Advocates of user authorship make a comparison to the creative direction of a film director, an architect or a choreographer - people who do not actually perform every aspect of the work but whose creative vision is nonetheless infused through the work. The challenge that has been identified by the courts and scholars is to determine a viable level of human creative input that would be enough to make the user an author.¹⁴

The public domain argument continues with the fact that the incentive-based justification of copyright protection cannot be applied to AI-generated works: as no single human author needs an economic incentive to create the work, the utilitarian reason of a monopoly right to work should not apply to human creators. By putting AI-created works into the common good upon creation, they would be widely available to the public and avoid monopolization of expression created by a machine.

7. Comparative Jurisdictional Analysis

United States has taken the most conservative stance of most of the major jurisdictions, which is deeply rooted in the human authorship doctrine. The decision of the Copyright Office not to register the work of AI generating by Thaler, as well as the decision made by the court of appeals to support this decision, has created a clear doctrinal foundation: the AI-generated works that fail to meet the sufficient human input cannot be copyrighted. The 2023 advice of the Office confirms that human-written parts of AI-assisted works, including a choice and organization of AI outputs that the user brings about on their own, are the only ones that can enjoy protection, with the AI-generated parts being unrestricted.¹⁵

The case of the United Kingdom is an intentional contrast that has a historical significance. The generative works of the CDP 1988 were introduced several decades prior to the modern era of generative AI and was formulated with the more simple computational instruments in mind. Whether modern large language models and diffusion models can be covered by it, and whether the test of whether the arrangements involved the production of a specific work can make sense of assigning authorship to the arrangement when the arrangement consists of hundreds of engineers, petabytes of training data, and months of computation, is hotly debated. Law Commission has accepted that there is need to reform but a legislative action has yet to be taken.¹⁶

The European Union has tackled the issue mostly via its AI regulatory agenda. The EU AI Act places the requirements of transparency and disclosure upon those who provide general-purpose AI models, forces the disclosure of training data used, and places the requirements of the compliance with the current copyright law. The Act does not explicitly

¹³ Copyright, Designs and Patents Act 1988, c. 48, § 9(3) (UK).

¹⁴ *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 57–58 (1884) (holding that authorship requires a human creator).

¹⁵ Thaler, No. 22-1564, slip op. at 9; see also U.S. Copyright Office, Copyright and Artificial Intelligence: Part 1 — Digital Replicas, at 10–12 (2023) (confirming only human-authored elements of AI-assisted works are eligible for protection).

¹⁶ Copyright, Designs and Patents Act 1988, c. 48, § 178 (UK); see also Law Commission of England and Wales, Automated Vehicles: Consultation Paper No. 3, at 112 (2022) (acknowledging need for reform of UK law on computer-generated works).

address the property issue of AI-generated works, yet it sets forth a climate of regulation where the copyright consequences of AI training and implementation are prone to continuous review. A potential structural template of a distinct regime of protection of AI-generated works is the *sui generis* right granted to the creators of databases by the EU Database Directive.¹⁷

China has become possibly the most lax major jurisdiction. A Beijing Internet Court in *Li Yunkai v. Liu Yuanchun* ruled that a copyrightable image could be the result of an AI-generated image where the human user wielded a creative influence over the output of the AI - a case that contrasted with the U.S. approach and placed the user creativity as a cognizable element of authorship on an AI-assisted work. Although the ruling is open to scholarly discussion, it is an indication that Chinese courts are willing to apply copyright to AI-generated works to a wider scope of situations than their U.S. counterparts.¹⁸

8. Broader Policy Implications

Economic consequences of the ownership issue are very high. A conventional reason to support copyright is that it creates an incentive to invest in the creation of creative work; in this perspective, the lack of copyright protection on AI-generated work may decrease the incentive to developers to develop and deploy generative AI systems to creative sectors. The strength of this argument is, though, much more in the case of human creativity, rather than AI. The commercial potential of generative AI systems is colossal, in areas that are not creative, such as scientific research, data analysis, software engineering, customer service; and will keep finding huge investment irrespective of the copyrightability of their creative products. The effect of copyright protection on the incentives to develop AI might thus be relatively insignificant at least on an aggregate basis.¹⁹

The implications of accountability are of greater urgency. The content created by AI may be defamatory, infringing, discriminatory, or any other harmful content. Making AI-generated content the property of the developer puts the risk and the reward in the same, identifiable, and deep-pocket, institutionally-capable, hands-on party - a structure that could be optimal on the systemic responsibility front. The allocation of ownership to users can democratize the benefits of AI creativity but can also provide loopholes in accountability, especially when the users are anonymous, pseudonymous, or in jurisdictions that are weak in enforcing laws.²⁰

The biggest policy issue is that there is the risk that the human creativity is going to be replaced by machine-generated content on scale. When AI systems are capable of generating commercially viable creative outputs at a marginal cost approaching zero, and when it is possible to own and commercialize them by highly powerful technology corporations, human authors, artists, composers and writers may find themselves economically uncompetitive. The problem of copyright law in the AI context is that its reform will have to pay serious attention to the risk of unwittingly undercutting the protective role of copyright law.

¹⁷ EU AI Act, arts. 4, 13, 50; Council Directive 96/9/EC of 11 March 1996 on the Legal Protection of Databases, 1996 O.J. (L 77) 20, arts. 7–11 (establishing the *sui generis* database right).

¹⁸ *Li Yunkai v. Liu Yuanchun*, Beijing Internet Court (Nov. 27, 2023) (finding AI-generated image copyrightable where human user exercised sufficient creative control through prompt design and parameter selection).

¹⁹ Matthew Sag, *The New Legal Landscape for Text Mining and Machine Learning*, 66 J. Copyright Soc'y U.S.A. 291, 295–98 (2019).

²⁰ Peter Mezei, *Copyright in the Age of Generative Artificial Intelligence*, 54 IIC — Int'l Rev. Intell. Prop. & Competition L. 1, 3–6 (2023).

9. Discussion and Analysis

The above analysis of the doctrine and policy leads to a number of definite conclusions. The human authorship doctrine as it is implemented today is not just principled but also requires: copyright protection should not automatically be granted to any and all AI-generated content, otherwise it will be the move to transfer an enormous amount of the cultural production into the individual ownership of several technology firms that would not provide any social value. However, blanket exclusion of all AI-assisted creativity under copyright is also not satisfactory, as it does not acknowledge the real creative efforts put forth by human users who engage in meaningful choice in controlling AI systems to particular expressive purposes.

The right analytical step would then be to concentrate on the level of human creative input not in the form of a threshold but in form of a continuum. On the one end, a creation that was wholly made by an independent AI system in reaction to a single-word command should not be subject to any copyright protection; it is not the expression of a recognizable human creative decision beyond the most basic of actions, which is to initiate a system. In the other end of the spectrum, a work where an author is a human being using an AI system as a complex tool - to create detailed prompts, pick among the various outputs, edit and mix AI-generated parts, and engage in long-term creative decision-making in the process - is appropriately considered a human-written work that merits full protection of copyright. In between these poles are a spectrum of cases that have to be investigated with delicate facts.

The interests of the developer are actual, although not the best served in the form of copyright. The main aim of copyright is to safeguard expressive creativity, and not to compensate investment in means and infrastructure. The right to safeguard the interest of developers should be a *sui generis* right which is comparable to the database right of the EU, but is specifically tuned to the nature and magnitude of the investment undertaken instead of to the innate creativity of the result. The term of such a right should be considerably shorter than that of copyright - ten to fifteen years appears to be fair - and it should be more heavily restricted by exceptions in the case of research, education and personal use.²¹

Any functional reform agenda cannot do without transparency requirements. Creative products markets can never be efficient when consumers, the licensee, and other creating creators are unable to distinguish between when content has been generated by AI and when it was generated by a human author. At least, disclosure requirements ought to include the information on whether a piece of work was created by an AI system, which AI system was involved, and how much human input was used in creating the piece of work. These requirements are in line with the general transparency framework provided by the EU AI Act and must be viewed as a bottom line, not as a top, to national regulatory standards.²²

10. Case Laws

10.1. AI-Specific Cases

Thaler v. Perlmutter, No. 22-1564 (D.D.C. Aug. 18, 2023).²³ Use in: Authorship, U.S. position Judgement: AI cannot be recognized as an author; human authorship is necessary

²¹ Council Directive 96/9/EC, *supra*, arts. 7–11.

²² EU AI Act, *supra*, arts. 4, 13, 50.

²³ *Thaler*, No. 22-1564, slip op. at 8.

Li Yunkai v. Liu Yuanchun, Beijing Internet Court (Nov. 27, 2023).²⁴ Use in: Comparative analysis (China) Judgement: Recognizes copyright if there is sufficient human input in AI-generated work

10.2. *Originality & Authorship Cases*

Feist Publications, Inc. v. Rural Telephone Service Co., 499 U.S. 340 (1991).²⁵ Use in: Originality doctrine Judgement: Requires “minimum creativity”

Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53 (1884).²⁶ Use in: Authorship concept Judgement: Author must be a human creator

10.3. *Non-Human Authorship Case*

Naruto v. Slater, 888 F.3d 418 (9th Cir. 2018).²⁷ Use in: Human authorship discussion Judgement: Non-humans (like animals) cannot hold copyright → analogy for AI

10.4. *AI Training / Fair Use Cases*

Authors Guild v. Google, Inc., 804 F.3d 202 (2d Cir. 2015).²⁸ Use in: AI training data discussion Judgement: Large-scale data use can qualify as fair use

Andy Warhol Foundation for the Visual Arts, Inc. v. Goldsmith, 598 U.S. 508 (2023).²⁹ Use in: Transformative use debate Judgement: Limits on what counts as “transformative”

10.5. *UK Cases*

University of London Press Ltd. v. University Tutorial Press Ltd., [1916] 2 Ch. 601 (UK).³⁰ Use in: Originality comparison Judgement: “Skill, labour and judgment” test

Nova Productions Ltd. v. Mazooma Games Ltd., [2007] EWCA Civ 219.³¹ Use in: Computer-generated works Judgement: Authorship depends on who controls creation

11. Proposed Reform Framework

Based on the above discussion, the current paper suggests a three-pronged reformulation of the copyright law on the use of AI-generated content.

- The first one is a stratified human authorship criterion. Works with AI assistance that have undergone a human-level of creative judgment and can be identified as such in the final product should enjoy copyright protections. The calibration of the threshold must be to the current originality standard: the human input must be in the form of autonomous creative decisions either in selection, arrangement, editing, or expressive direction that is beyond the simple act of commanding or using the AI system. There should be complete copyright protection of works that satisfy this requirement in the name of the human contributor. The works which should not become the common property.³²

²⁴ *Li Yunkai*, Beijing Internet Court (Nov. 27, 2023).

²⁵ *Feist*, 499 U.S. at 345.

²⁶ *Burrow-Giles*, 111 U.S. at 57–58.

²⁷ *Naruto*, 888 F.3d at 426.

²⁸ *Authors Guild v. Google, Inc.*, 804 F.3d 202, 225 (2d Cir. 2015) (holding large-scale digitization for search indexing constitutes transformative fair use).

²⁹ *Andy Warhol Found. for the Visual Arts, Inc. v. Goldsmith*, 598 U.S. 508, 530–33 (2023) (limiting what counts as transformative use for commercially licensed derivative works).

³⁰ *Univ. of London Press Ltd. v. Univ. Tutorial Press Ltd.*, [1916] 2 Ch. 601, 608 (UK) (articulating the skill, labour, and judgment standard for originality under English law).

³¹ *Nova Prods. Ltd. v. Mazooma Games Ltd.*, [2007] EWCA Civ 219, [2007] Bus. L.R. 1032 (UK) (holding authorship of computer-generated works vests in the human who devised the program’s rules and parameters).

³² *Feist*, 499 U.S. at 345.

- The second is a sui generis developer right. In the case of AI-created works where the amount of human creative input to the work does not meet the threshold to be considered as subject to copyright, a new, temporary sui generis right ought to be granted to the developer/ operator of the AI system that generates the work. This privilege must have a maximum of ten to fifteen years since the time of first publication; must be restricted to the extent that it does not bar the right-holder the right to use of the work commercially in the place of the work with which the right is associated; and must be compulsorily licensed to education, research, and journalistic purposes and against a fee determined by a specified public agency.³³
- The third one is compulsory disclosure of AI content. Those who publish, distribute or license a creative work that was entirely or substantially created by an AI system should be obliged to clearly indicate that fact along with the name of the AI system employed and the description of the character of any human creative input. The consequences of failure to disclose should be that the work is not eligible to any form of copyright protection or sui generis rights as a developer, and that the act should be subject to civil liability at the instance of the injured parties.³⁴

12. Conclusion

One of the most critical and tricky issues of contemporary copyright law is the question of ownership of work created by AI. As this paper has shown, this breaking pace of artificial intelligence development has not only brought new instruments of creativity into play, but has actually shaken the very principles under which the copyright law is developed- the doctrine of human authorship, originality and property. This is because the systems have emerged that can produce autonomous creative outputs and the law is faced with a reality that it was not designed to control.

Key Findings

This study is able to draw some important conclusions. To start with, the anthropocentrism doctrine prevails in copyright laws worldwide, practically barring any fully AI-generated works the protection and leaving them exposed to legal loopholes. Second, there is an unsolvable conflict between the competing demands of developers, users and the people. Whilst developers use the arguments that are based on investments, users focus on the creative control via prompting and the perspective of the public domain casts a doubt on the necessity of exclusive rights in machine-generated works. Third, a starkly divided world law is pointed out in the comparative analysis. The United States has a strict human authorship policy, the United Kingdom has an out dated statutory policy but does not deal with the idea of computer-generated works, the European Union has a more regulatory-oriented policy but does not focus on ownership clarity, and China has a more relaxed approach, acknowledging the contribution of the user.

In addition, this paper finds a huge gap in the institutionalization between ownership and accountability. Lack of ownership regulations directly affects who bears responsibility of harmful, infringing or misleading AI-generated content. This loophole not only brings about legal ambiguity, but also undermines the effectiveness of the current intellectual property regimes in dealing with new technological threats.

Implications

These findings have far-reaching implications that are multi-dimensional. On the legal front, what made the current copyright systems insufficient is that the law may continue to become more obsolete with the ever-evolving technology. Uncertainty on ownership,

³³ Council Directive 96/9/EC, supra, arts. 7–11; EU AI Act, supra, arts. 4, 13, 50.

³⁴ EU AI Act, supra, art. 50.

both economically, poses a risk of distortion of incentives, which can result in excessive concentration of intellectual property rights by big technology companies, at the same time that it compromises the state of individual creators. Simultaneously, the unlimited existence of AI-generated content can undermine the economic sustainability of human creations, undermining the very incentive system, which the copyright law is aimed at maintaining.

Policy wise, there is no clarity in terms of ownership and liability, which pose obstacles to the enforcement and heightens the chances of a varying judicial outcome. The failure to separate the works of humans and AI socially and culturally poses a significant challenge to the authenticity and trustworthiness of human creative expression and the sustainability of its value in the long term. Unattended, such challenges are prone to destabilizing not only legal structures, but also the creative industries and the whole culture production.

Recommendations

Considering these issues, the present paper proposes a holistic and balanced agenda of reforms. Its essence is that it is imperative to get past its dogmatic and binary thinking and embrace a more subtle vision of the creativity in the era of artificial intelligence.

- To start with, the legislatures need to propose a definite statutory definition of authorship in AI scenario and clearly differentiate between AI-generated and AI-assisted works. This is necessary clarification to do away with ambiguity in order to be able to bring uniformity in the interpretation of the law.
- Second, a stratified ownership system must be implemented with the copyright protection being directly connected to the level of human creativity. The works that require a significant amount of human input should be treated with all the protection, whereas autonomous AI works should be excluded and become the property of the general public or be regulated by some other means.
- Third, a sui generis protection regime should be established to protect AI developers to appreciate the level of economic investment in creating AI systems without warping the main purpose of copyright law. Such protection must be temporary, strictly focused and must be open to protection by the public interest.
- Fourth, it is important to implement compulsory requirements of transparency and disclosure. The use of AI, the system used, and the level of human input must be clear in all works that are developed and/or are assisted by AI. These will increase accountability, informed consumption and promote a fair competition.
- Fifth, the international harmonization of the legal standards is urgently needed. Since AI technologies are global, it is necessary to work together with international institutions to decrease fragmentation, achieve uniformity, and enforce cross-border.
- Sixth, laws need to specify measures to protect human creators, such as fair use of training information, protection against unauthorized copying of creative styles and policy protection of creative industries impacted by AI-induced disruption.
- Lastly, without prompt legislative change the courts need to take a more progressive and case-by-case approach, by considering the level of human intervention and ensuring that the legal rationale is kept up to date with technological changes.

Closing Perspective

To sum up, AI does not mean the abolition of copyright law, but it certainly requires a change in that. The difficulty is not to oppose technological movement, but to create a legal system that would ensure the balance between innovation and fairness, or automation and inventive abilities of humans. An imaginative, ideologically sound and flexible strategy is needed, based on the clarity of doctrines, compatibility of policies and their practical implementation.

The need to reform cannot be overemphasized. The law should keep pace with the creativity and production in line with the more and more dynamism of artificial intelligence. Not only the ownership of AI-generated works will be determined by the choices of today but will also stipulate the future relationship of human creators with intelligent machines. The primary goal of the contemporary copyright law is to make sure that such a relationship is equitable, sustainable, and innovation-friendly.

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