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COPYRIGHT PROTECTION FOR AI-GENERATED WORKS IN INDIA: CHALLENGES OF AUTHORSHIP, OWNERSHIP AND THE NEED FOR LEGISLATIVE REFORM

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ABSTRACT

The rapid development of generative Artificial Intelligence (AI) has challenged traditional copyright principles based on human authorship and creativity. AI systems can now independently generate literary, artistic, musical and other creative works, raising complex questions regarding originality, authorship, ownership and copyright protection. This paper critically examines the adequacy of the Indian Copyright Act, 1957 in regulating AI-generated works, particularly in light of Sections 2(d), 13 and 17. It analyses whether AI-generated works satisfy the requirement of originality and examines whether authorship should vest in the AI user, developer or another stakeholder. The study adopts a doctrinal and comparative approach, examining Indian judicial principles alongside the legal positions of the United Kingdom, United States and European Union. It identifies significant legislative gaps concerning autonomous AI-generated works and AI training data. The paper proposes a human contribution test, disclosure requirements, licensing mechanisms for AI training and a limited sui generis framework to balance technological innovation with the protection of human creativity.

INTRODUCTION

The rapid evolution of Artificial Intelligence (AI) systems, particularly generative AI platforms like ChatGPT, Gemini, Midjourney, DALL·E and Stable Diffusion, has transformed the manner of creative works creation. Today's generative artificial intelligence is able to generate copyrightable content—literary works, artistic images, musical compositions, computer code, and so on—in seconds of a user prompt, and not just assist human creativity as conventional software does. These technological developments have greatly increased efficiency, accessibility and innovation across creative industries, but also exposed fundamental inadequacies within traditional copyright law, which has historically been predicated on the assumption that every original work originates from a human author.

The Indian Copyright Act, 1957 was enacted at a time when autonomous artificial intelligence systems were not within the purview of legislative imagination. It was thus intended to regulate human intellectual labour and not machine-generated creativity in its provisions on authorship, ownership and originality and copyright protection. Section 2(d)(vi) recognizes authorship of computer-generated works, stating that it is “the person who causes the work to be created.” However, the provision was enacted before the advent of modern generative AI and provides little assistance in identifying authorship when creative decisions are largely or wholly made by autonomous artificial intelligence systems. Similarly, the Act does not address important topics such as ownership of works generated by AI, copyright implications of AI training datasets, and the level of human creativity needed to support copyright protection.¹

These ambiguities in the law have become more prominent with the commercial application of content produced by AI in publishing, advertising, entertainment, software development, journalism, and digital art. Without a robust legal framework, there is uncertainty not only for creators, developers and AI service providers but also for copyright enforcement agencies and the judiciary. And this complexity has been further compounded by differing international approaches. Other jurisdictions such as the United Kingdom, have statutory provisions recognizing copyright in certain computer-generated works. The United States however, still requires human authorship as a condition precedent for copyright protection. But India has yet to take a clear legislative or judicial position that can engage with the realities of generative AI.²

In this perspective, the present study critically examines whether the existing framework under the Copyright Act, 1957 is capable of protecting AI-generated works without compromising the core values of copyright law. The paper deals with the legal issues of authorship, ownership, originality and copyright protection within the framework of autonomous artificial intelligence systems, with a doctrinal and comparative approach. This paper examines current legislative gaps by evaluating Indian statutory provisions against significant judicial developments and international practices, and suggests a balanced reform framework to foster technological innovation while safeguarding the rights and incentives of human creators. Such reforms are needed to ensure that India’s copyright regime is effective, fair and responsive in an age that is increasingly driven by AI.³

RESEARCH QUESTIONS

The present study seeks to focus on the following research questions:

1. Whether AI- generated works satisfy the requirement of originality under the copyright Act ,1957, particularly in the light of the “modicum of creativity” and “skill and judgment” standard evolved through Indian judicial precedents?

¹ Copyright Act, 1957, § 2(d)(vi), Copyright Act, 1957, § 13

² Eastern Book Co. v. D.B. Modak, (2008) 1 S.C.C. 1.

³ Thaler v. Perlmutter, 687 F. Supp. 3d 140 (D.D.C. 2023)

2. Who should be regarded as the legal author and owner of AI-generated works under the existing framework of the Copyright Act, 1957 – the AI developer the user (prompt engineer), or any other stakeholder?
3. Whether the existing provisions of the Copyright Act ,1957 are adequate to regulate AI-generated works, or whether legislative reforms are necessary to address emerging issues of authorship, ownership, and copyright protection?

RESEARCH OBJECTIVES

The study aims to:

- Examine the legal status of AI-generated works under the Copyright Act, 1957;
- Analyse the challenges relating to originality, authorship, and ownership in the context of generative AI;
- Evaluate the adequacy of the existing Indian copyright framework through a comparative analysis of selected foreign jurisdictions;
- Identify the legislative gaps in the current legal framework;
- And propose suitable reforms to ensure a balanced copyright regime that encourages technological innovation while safeguarding the rights of human creators.

RESEARCH GAP

Artificial Intelligence is one of the most disruptive technologies impacting on intellectual property law and is generating growing academic and policy debates across jurisdictions. The existing Indian scholarship has largely focused on the larger implications of Artificial Intelligence on intellectual property rights or has viewed AI as an assistive tool in the creative process. However, there has been little focus on the legal issues that arise from autonomous AI generated works especially when considering the interplay of Sections 2(d), 13 and 17 of the Copyright Act, 1957 in identifying authorship and ownership when human intervention is minimal. In addition, there remains a substantial legislative gap concerning the copyright ramifications of prompt-induced creativity, content produced by AI, and the utilization of copyrighted works for training AI models.

This study aims to fill these gaps by critically reviewing the current statutory framework, judicial principles, and comparative foreign approaches. It also suggests a systematic legislative reform approach specific to the Indian legal system that aims to balance technological progress with the fundamental goals of copyright law.

RESEARCH METHODOLOGY

The study adopts a doctrinal research methodology based on the analysis of primary and secondary legal sources. Primary sources include the Copyright Act, 1957, relevant judicial decisions of Indian and foreign courts, and statutory frameworks governing copyright in selected jurisdictions. Secondary sources comprise books, peer-

reviewed journal articles, government reports, policy papers, and publications of international organisations such as the World Intellectual Property Organization (WIPO). A comparative approach has also been employed to examine the legal frameworks of the United Kingdom and the United States in order to identify best practices and draw lessons for legislative reform in India.

EVOLUTION OF ARTIFICIAL INTELLIGENCE AND COPYRIGHT LAW

Copyright law has always been based on the idea that creative works are the result of human intellectual endeavor. Copyright protection is intended to reward originality, foster creativity, and protect writers' economic and moral interests. For decades, technology breakthroughs like computers, digital editing software, and graphic design tools aided human producers rather than removing the aspect of human creativity. As a result, copyright law has evolved based on the concept that technology serves as a tool for human authors to communicate their original ideas.⁴

The rise of Artificial Intelligence (AI), particularly generative AI, has profoundly changed this notion. Unlike traditional software, which executes predefined commands, generative AI systems use machine learning techniques and large-scale datasets to create new content in response to human input. ChatGPT, Midjourney, DALL·E, Stable Diffusion, and Gemini can generate high-quality and original creative outputs, including literature, paintings, music, and software code. This technological advancement has blurred the line between human-assisted invention and machine-generated innovation, posing unprecedented legal challenges to copyright protection.

A fundamental problem derives from the fact that generative AI systems develop content through probabilistic prediction based on patterns learnt from large datasets, rather than intentional intellectual effort. Although AI-generated outputs may appear unique and creative, the creative process is fundamentally different from human authorship, which has long been regarded as the foundation of copyright law. This distinction has caused judges and legislators around the world to reexamine whether existing copyright laws can effectively regulate works created with little or no human interaction.⁵

The issue becomes especially important under the Indian Copyright Act of 1957. While the Act recognizes "computer-generated works" under Section 2(d)(vi), the clause was enacted long before the rise of modern generative AI and was primarily intended to address works produced by traditional computer systems rather than autonomous machine learning models. As a result, the statutory framework provides minimal direction in identifying who should be recognized as the author when an AI system develops expressive content on its own

⁴ Copyright Act, No. 14 of 1957, § 2(d)(vi) (India).

⁵ World Intellectual Property Organization (WIPO), WIPO Conversation on Intellectual Property (IP) and Artificial Intelligence, https://www.wipo.int/about-ip/en/artificial_intelligence/.

using limited human input. Similarly, the Act does not clarify whether AI-generated works meet the originality criteria under Section 13 or how ownership should be distributed among AI developers, consumers, or organizations that use such systems.⁶

The increased commercial usage of AI-generated content has exacerbated the legal concerns. AI is now widely utilized in publishing, journalism, advertising, entertainment, software development, education, and digital marketing, making copyright protection more important. The lack of a clear legal framework not only causes uncertainty for creators and corporations, but it also has the potential to discourage innovation while eroding the rights of human authors. As a result, a thorough re-examination of the present copyright regime is required to ensure that Indian copyright law can continue to meet technological changes without jeopardizing its essential aims.⁷

THE CHALLENGE OF ORIGINALITY UNDER INDIAN COPYRIGHT LAW

Originality is the foundation of copyright protection under the Indian Copyright Act of 1957. Although Section 13 of the Act protects copyright for original literary, dramatic, musical, and artistic works, it does not define the term "original." As a result, judicial interpretation has played a significant role in determining originality. Indian courts have always held that copyright protects the expression of ideas rather than the ideas themselves, and that protection is only attainable when a work demonstrates significant intellectual effort on the part of its creator.⁸

The Supreme Court, in *Eastern Book Company v. D.B. Modak*⁹, rejected the traditional English "sweat of the brow" concept, which granted copyright only on the basis of labor and effort. Instead, the Court established the "modicum of creativity" test, which requires the use of expertise and judgment while creating a work. The Court determined that copyright exists only when the author exerts sufficient intellectual effort, inventiveness, and autonomous judgment to create an original expression. This decision brought Indian copyright legislation into line with worldwide developments and supported the idea that originality is inextricably related to human intellectual production.

The development of generative artificial intelligence has hampered the implementation of this legal criterion. AI systems may generate poems, essays, paintings, software code, and musical compositions that appear to be original to the average observer. However, the technique by which AI produces these outputs is fundamentally different from human innovation. Rather than participating in conscious intellectual thinking, AI models generate content through statistical prediction using patterns learnt from large datasets during training. As a result, the

⁶ U.S. Copyright Office, Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence, 88 Fed. Reg. 16,190 (Mar. 16, 2023).

⁷ Andres Guadamuz, Artificial Intelligence and Copyright, 27 WIPO Mag., Oct. 2018, at 14.

⁸ Copyright Act, No. 14 of 1957, § 13 (India).

⁹ *Eastern Book Co. v. D.B. Modak*, (2008) 1 S.C.C. 1, 42–44 (India)

originality reflected in AI-generated outputs raises an important legal question: should originality be evaluated merely on the basis of the final product, or should it also consider the nature of the creative process that produced it?¹⁰

This question becomes especially important when human engagement is minimal. A user can simply give a simple command, such as "create an impressionist painting of the Himalayas at sunrise," and the AI will select the composition, color palette, perspective, lighting, and artistic aspects. In such cases, it is impossible to conclude that the user demonstrated the competence, judgment, and inventiveness envisaged by Eastern Book Company. While rapid engineering may include varied degrees of creativity, many AI-generated outputs are driven primarily by the AI system's computational skills rather than significant human intellectual contribution.

Furthermore, recognizing copyright merely on the basis of output uniqueness, without regard for the source of creative, risks eroding copyright law's conceptual base. Copyright has long served as an incentive for human creation, rewarding intellectual labor and stimulating further innovation. Extending equal protection to works generated autonomously by AI may undermine this goal by extending exclusive rights to works that do not represent human creative expression. At the same time, completely denying protection may discourage investment in AI-driven innovation and cause uncertainty for organizations and creators who rely on generative AI technologies.

The current legal framework thus indicates a considerable doctrinal gap. Neither the Copyright Act of 1957, nor existing legal decisions, specify the level of human involvement required for an AI-assisted work to meet the originality requirement. The lack of a statutory threshold makes it impossible to distinguish between AI-assisted works, in which AI is used solely as a creative tool, and AI-generated works, in which the system develops expressive content on its own. As generative AI evolves, established legal norms alone may be insufficient to answer these problems.¹¹

As a result, there is an urgent need for legislative clarity that establishes a human contribution criterion for copyright protection. Such a framework should distinguish between works that rely solely on AI as an assisting technology and those created primarily by autonomous machine processes. This approach would maintain the human-centered concept of copyright law while offering better legal certainty for artists, developers, and users of generative AI.

THE PUZZLE OF AUTHORSHIP AND OWNERSHIP OF AI- GENERATED WORKS

¹⁰ Agreement on Trade-Related Aspects of Intellectual Property Rights arts. 9–10, Apr. 15, 1994, 1869 U.N.T.S. 29

¹¹ Jane C. Ginsburg & Luke Ali Budiardjo, *Authors and Machines*, 34 *Berkeley Tech. L.J.* 343 (2019).

The ideas of authorship and ownership are fundamental to copyright law because they define both the existence of copyright and who has exclusive rights to a protected work. Section 2(d) of the Copyright Act of 1957 defines the term "author" based on the nature of the work. In terms of computer-generated works, Section 2(d)(vi) defines the author as "the person who causes the work to be created." While this provision was novel when it was passed, its relevance to modern generative AI has grown more questionable because the legislators did not envision autonomous computers capable of freely generating creative expression.¹²

The term "the person who causes the work to be created" is not defined in the Act. In the context of traditional computer programs, the provision created little difficulties because computers simply executed instructions designed and controlled by human users. However, generative AI systems work differently. Following a cue, they analyze learning patterns autonomously, generate many creative options, and provide outputs that are not predefined by the developer or the user. As a result, determining who genuinely "causes" the development of the work has become a legal issue.¹³

One plausible interpretation assigns authorship to the user or the prompt engineer. The justification for this approach is that the user starts the creative process by selecting the prompt, deciding on the intended style or theme, and deciding whether to accept, reject, or change the AI-generated output. Where instructions are detailed, iterative, and accompanied by extensive editing, the user's intellectual input may meet the criteria for human creativity. However, if the instruction is brief or general, and the AI autonomously decides the expressive parts of the finished work, it is difficult to defend the user as the sole creator under traditional copyright law grounds.¹⁴

A second approach identifies the AI system's developer as the author or owner. Developers establish the architecture, choose training approaches, and develop the algorithms that allow the AI model to generate content. Nonetheless, developers typically have no direct control on the specific expressive output generated in response to an individual user's query. Assigning authorship only to developers would thus violate the notion that copyright protects the creator of a specific expression, not the inventor of the tool used to make it.

A third option is to identify the AI system itself as the author. Although this technique has received scholarly attention, it is nevertheless incompatible with the existing framework of copyright law. Copyright has always been based on legal individuality, accountability, and the ability to own and enforce rights. Artificial intelligence lacks legal personality, thus it cannot own property, transfer rights, begin legal procedures, or exercise moral rights. Courts in various jurisdictions, including the United States, have maintained that copyright protection is

¹² Copyright Act, No. 14 of 1957, §§ 2(d)(vi), 17 (India).

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

¹⁴ *Thaler v. Perlmutter*, 687 F. Supp. 3d 140 (D.D.C. 2023).

limited to works created by humans. Recognizing AI as a legal author would necessitate a significant change from the philosophical and legal basis of copyright law.¹⁵

The uncertainty regarding authorship naturally extends to ownership under Section 17 of the Copyright Act of 1957. Because ownership is typically derived from authorship, the inability to identify the legal author generates confusion in the allocation of economic rights, licensing arrangements and enforcement methods. This uncertainty is especially troublesome in commercial environments as firms are increasingly reliant on AI-generated content for advertising, software development, journalism, publishing, and digital marketing. Without regulatory clarity, there may be disagreements among AI developers, platform providers, employers, clients, and users about the ownership and commercial exploitation of AI-generated works.¹⁶

As a result, the current regulatory framework does not effectively distinguish between AI-assisted creativity and autonomous AI generation. A more balanced approach would accept that copyright should remain based on substantial human intellectual contribution while also acknowledging AI's rising role in the creative process. Rather than assigning automatic authorship to developers or users, Indian copyright law should establish a statutory criteria to assess the level of human creative control exercised over the final expression. Such a framework would increase legal clarity, maintain the human-centric philosophy of copyright law, and promote responsible innovation in the fast developing field of artificial intelligence.

COPYRIGHT INFRINGEMENT, AI TRAINING DATA AND EMERGING LEGAL CONCERNS

Using copyrighted works to train generative AI models presents a serious difficulty that goes beyond authorship and rights. Modern AI systems are trained using massive datasets that include novels, journal papers, paintings, photos, music, software code, and other copyrighted material. During the training phase, AI models examine the patterns, structures, and relationships in these datasets to produce new results. This has highlighted an important legal question: does unauthorised use of copyrighted material for AI training constitute copyright infringement?

The Copyright Act of 1957 does not clearly prohibit the use of copyrighted content to train artificial intelligence systems. As a result, developers frequently depend on implicit permissions, contractual licenses, public domain content, or legislative exclusions, but copyright holders claim that such large-scale data extraction without agreement violates their exclusive rights. The lack of statutory guidance has resulted in significant legal uncertainty, especially as AI-generated outputs may resemble or substantially imitate existing copyrighted works.

¹⁵ U.S. Copyright Office, *Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence*, 88 Fed. Reg. 16,190 (Mar. 16, 2023).

¹⁶ Jane C. Ginsburg & Luke Ali Budiardjo, **Authors and Machines**, 34 Berkeley Tech. L.J. 343 (2019).

Internationally, this topic has sparked substantial litigation and policy disputes. Authors, artists, musicians, and publishers have filed lawsuits against AI developers, alleging unauthorized usage of copyrighted material for model training. These issues illustrate that present copyright laws were not established with machine learning technologies in mind, necessitating legislative changes. India currently lacks any judicial precedent directly addressing whether AI training constitutes copyright infringement, leaving both copyright holders and AI developers without legal assurance.

The issue also concerns the preservation of moral and economic rights. If AI-generated work substantially replicates protected expression, authors may face financial losses, erosion of creative markets, and reputational harm. In contrast, excessive regulation may stifle technological innovation and research. A balanced legislative framework is consequently required to accommodate the competing interests of copyright holders, AI developers, technological corporations, and the general public.

As a result, India should explore enacting statutory rules limiting the use of copyrighted works for AI training, such as transparency requirements, licensing procedures, and protections against illegal replication. Such reforms would lower litigation, encourage responsible AI development, and boost trust in India's copyright policy.

COMPARATIVE ANALYSIS: LESSONS FROM FOREIGN JURISDICTIONS

Different jurisdictions have adopted contrasting approaches towards copyright protection for AI-generated works. The United Kingdom expressly recognises computer-generated works under Section 9(3) of the Copyright, Designs and Patents Act 1988 by deeming the author to be the person who undertakes the arrangements necessary for the creation of the work. Although this provision provides certainty regarding authorship, it was enacted long before the emergence of modern generative AI and does not adequately address contemporary questions relating to autonomous machine learning systems.

The United States has taken a tighter approach to human authorship. The United States Copyright Office has repeatedly maintained that copyright protection applies solely to works that embody human creative expression. This view was confirmed in *Thaler v. Perlmutter*, when the court ruled that a work created solely by Artificial Intelligence without human authorship was ineligible for copyright protection. Recent administrative guidance recognizes copyright only in features of a work that need a significant human creative contribution.¹⁷

The European Union continues to take a mostly human-centric approach, emphasizing originality as the outcome of the author's own intellectual creativity while also building legislative frameworks to increase transparency and accountability in AI systems.

¹⁷ *Thaler v. Perlmutter*, 687 F. Supp. 3d 140

Rather than conferring legal status on AI, the EU intends to regulate it through governance, disclosure rules, and risk-based oversight.

India currently occupies an uncertain position. While Section 2(d)(vi) acknowledges computer-generated works, the Copyright Act, 1957 neither defines the extent of human contribution required nor addresses ownership, AI training datasets, or autonomous AI-generated content. This legislative silence creates uncertainty for creators, businesses, and courts. Drawing upon comparative experiences, India should adopt a balanced framework that preserves human creativity while encouraging technological innovation.¹⁸

RECOMMENDATIONS FOR LEGISLATIVE REFORM

The current Copyright Act of 1957 requires targeted modifications to solve the legal difficulties faced by artificial intelligence. First, Parliament should alter Section 2(d) to clearly distinguish AI-assisted works from autonomous AI-generated works, as well as to define the minimal amount of human creative contribution required for copyright protection.

Second, a legislative Human Contribution Test should be implemented to establish if a natural person has demonstrated adequate intellectual inventiveness. Such a test would help judges distinguish between works in which AI only serves as a tool and those created primarily by autonomous machine processes.

Third, AI-generated works should be supported by statutory disclosure requirements that specify the extent to which artificial intelligence was used throughout the creative process. Such transparency would improve accountability and aid copyright enforcement.

Fourth, India should develop a statutory licensing system for the use of copyrighted works in AI training. This will allow AI developers to properly access copyrighted datasets while guaranteeing that copyright holders are fairly compensated for the commercial exploitation of their works.¹⁹

Finally, the Parliament may consider establishing a limited sui generis framework for totally autonomous AI-generated works. If granted, such protection should have a shorter term than traditional copyright and should not limit the rights of human authors. This method would promote innovation while maintaining the primary goal of copyright law, namely the protection of human creativity.²⁰

CONCLUSION

¹⁸ World Intellectual Property Organization (WIPO), *WIPO Conversation on Intellectual Property (IP) and Artificial Intelligence* (2020–2024)

¹⁹ U.S. Copyright Office, *Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence*, 88 Fed. Reg. 16,190 (Mar. 16, 2023).

²⁰ World Intellectual Property Organization, *WIPO Conversation on Intellectual Property (IP) and Artificial Intelligence* (2020–2024), https://www.wipo.int/about-ip/en/artificial_intelligence/.

Artificial intelligence has profoundly altered the nature of creation, challenging long-held assumptions underlying copyright law. The current sections of the Copyright Act of 1957, notably those pertaining to originality, authorship, and ownership, were enacted when autonomous AI systems were unthinkable. As a result, the current regulatory framework is inadequate for resolving disputes originating from AI-generated works or addressing the legal implications of AI training on copyrighted materials.

The study shows that, while AI can produce sophisticated creative outputs, copyright protection must remain anchored in substantial human intellectual input. At the same time, legislative silence is unsustainable in the face of rapid technical innovation. India should thus implement a balanced and forward-thinking system that explicitly defines authorship, imposes a human contribution level, supervises AI training datasets, and implements transparent methods for allocating rights and responsibilities. Such reforms would not only provide legal certainty to creators, developers, and businesses, but would also ensure that Indian copyright law continues to stimulate innovation while upholding the basic values that have historically underpinned copyright protection.

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