ARTIFICIAL INTELLIGENCE AND AUTHORSHIOP: RETHINKING OF INTELLECTUAL PROPERTY RIGHTS IN THE AGE OF AUTONOMOUS CREATIVITY

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ABSTRACT

Artificial intelligence (AI) is reshaping the boundaries of creativity and innovation. From generating art, literature, and music to designing inventions, AI systems now produce works that challenge the foundations of intellectual property rights (IPR). Existing laws, however, are built on the assumption of human authorship and inventorship, leaving a significant gap in protecting and regulating AI-generated creations. This gap creates uncertainty regarding ownership, accountability, and enforcement across jurisdictions. Copyright and patent laws exemplify this deficiency. The Indian Copyright Act, 1957, while mentioning computer-generated works, provides no clarity on autonomous AI outputs. Similarly, the Patents Act, 1970, restricts inventorship to humans, excluding AI driven inventions. Globally, courts and policymakers have adopted inconsistent approaches: U.S. authorities deny copyright to AI-generated works, the United Kingdom partially recognizes computer-generated works, and the European Union continues deliberations without decisive reforms. This fragmented framework hinders legal certainty and the international harmonizations.

This paper employs doctrinal and comparative analysis to examine the shortcomings of current IPR regimes in addressing AI authorship. It also considers ethical and policy concerns, including incentive structures, accountability for infringement and the balance between human and machine creativity.

To fill these gaps, the study evaluates three models:

1. A human-centric approach, vesting rights in programmers or users;
2. Sui generis protection for AI generated works;
3. A public domain approach.

The paper proposes a hybrid solution for India that combines the Human Attribution principle with a limited sui generis right, ensuring accountability

while recognizing the value AI generated outputs. This research contributes to the urgent global discourse on adapting IPR to technological change, arguing that proactive legal reforms is essential to foster innovation while safeguarding human creativity.

Keywords: Artificial Intelligence, Authorship, Intellectual Property Rights, Sui Generis Protection, Human Attribution Principle.

Introduction

The Intellectual Property (IP) system was historically designed to incentivize human creativity and innovation. Doctrines of originality, authorship, and inventorship presume a sentient actor capable of labor, judgment, and accountability. This human-centric paradigm has underpinned both copyright and patent law for centuries. Yet, the advent of Artificial Intelligence[1] (AI)—particularly generative AI—has unsettled this foundation.

AI systems today compose music, generate artworks, and even design patentable inventions with minimal or no human intervention. This phenomenon poses fundamental questions: Can a machine be an author or inventor? If not, should the outputs of AI remain unprotected, or should novel ownership models be developed? More importantly, how can legal systems preserve the balance between rewarding creativity and preventing monopolization?

These questions are not merely academic. Courts worldwide have grappled with them, most prominently in the Thaler v. Perlmutter decision in the U.S., which rejected copyright protection for AI-generated art, and in the U.K. and E.U. with the DABUS patent applications. India too faces mounting pressure to clarify its stance under the Copyright Act, 1957 and the Patents Act, 1970.

This paper seeks to address these challenges by analyzing doctrinal ambiguities, identifying legal gaps, and proposing reforms that align with both domestic and international legal obligations. It argues that the time has come to rethink intellectual property not merely as a human right but as a dynamic governance mechanism adaptable to technological disruption.

Rethinking the Foundations of Intellectual Property in the Era of AI

The intellectual property (IP) system is historically built on the idea of a human creator. This

[1] Martha Woodmansee, The Genius and the Copyright: Economic and Legal Conditions of the Emergence of the 'Author', 17 Eighteenth-Century Studies 425 (1984).

assumption is deeply embedded in both copyright and patent law. However, the emergence of Artificial Intelligence (AI) as an autonomous producer of creative and inventive outputs challenges this foundational premise.

A. The Romantic Author Paradigm in Copyright Law

Copyright has traditionally rested on the notion of the "romantic author"—a human being whose individuality, originality, and creative labor justify exclusive rights. This is reflected in statutory definitions, such as the Indian Copyright Act, 1957, which defines an "author" as the natural person who creates a work.[2]

Similarly, in Eastern Book Company v. D.B. Modak, the Supreme Court of India underscored that originality requires human application of "skill and judgment."[3]

AI-generated works destabilize this paradigm. A generative algorithm that composes music or writes literature does not possess consciousness, intention, or personality. Yet the output often meets the threshold of creativity recognized by courts. This creates a legal vacuum—outputs are creative but without a legally recognized author.

B. The Inventive Genius in Patent Law

Patent systems are also predicated on human inventiveness. The Patents Act, 1970 in India defines an "inventor" implicitly as a person who contributes to the inventive step.[4] Internationally, Article 27 of the TRIPS Agreement obliges WTO members to make patents available for "inventions, whether products or processes, in all fields of technology," without clarifying the possibility of non-human inventors.[5]

The DABUS litigation illustrates the doctrinal clash: courts in the U.K., U.S., and E.U. rejected applications listing an AI system as the inventor, holding that only natural persons can qualify.[6] South Africa, however, granted a patent naming AI as inventor, signaling a divergence in global

[2] Copyright Act, No. 14 of 1957, S 2(d), India.
[3] Eastern Book Co. v. D.B. Modak, (2008) 1 SCC 1 (India).
[4] The Patents Act, No. 39 of 1970, S 6, India.
[5] Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.
[6] Thaler v. Comptroller General of Patents, Designs and Trade Marks EWCA Civ 1374 (U.K.); In re Application of Stephen Thaler (Fed. Cir. 2022) (U.S.); European Patent Office, Decision J 8/20 (DABUS case).

practice.[7] This lack of harmonization underscores the fragility of the human-centric model in the face of autonomous AI.

C. Collapse of Human-Centric Assumptions

As AI increasingly operates with minimal human intervention, the traditional justifications for IP protection—moral rights, economic incentives, and accountability—are eroded. Moral rights, tied to the dignity and personality of the author, cannot attach to machines. Economic incentives become distorted when corporations can monopolize AI-generated outputs without a corresponding human contribution. Finally, accountability gaps emerge, as liability regimes struggle to assign responsibility for AI-driven creations or inventions.

Thus, the very foundations of IP law—built on the assumptions of human creativity and genius—are collapsing under the weight of AI's autonomous capacities. This collapse exposes a doctrinal gap: while the outputs of AI may deserve recognition, the system lacks a coherent legal category to accommodate them.

The Definitional Gap: Authorship and Inventorship in AI-Generated Works

The most immediate doctrinal challenge posed by AI to intellectual property law is definitional. Both copyright and patent statutes worldwide presuppose that authors and inventors are human beings. AI, however, produces works and inventions without human creative or inventive input, rendering existing definitions inadequate.

A. Copyright Authorship and the Absence of AI Recognition

The Indian Copyright Act, 1957, defines an "author" differently depending on the category of work but invariably links authorship to a natural or legal person. For example, Section 2(d) specifies that the author of a literary or artistic work is the individual who creates it. Courts have consistently reinforced this human-centered approach: in Eastern Book Co. v. D.B. Modak, the Supreme Court emphasized the role of human skill and judgment in determining originality.

[7] South African Companies and Intellectual Property Commission (CIPC), Patent No. 2021/03242 (granted July 2021).

Yet, AI systems such as generative models can autonomously produce literary texts, music, and art that easily meet the originality threshold under Indian law. However, because they lack legal personality, they cannot be "authors." This leads to a legal vacuum where creative outputs exist without ownership.

Jurisdictions like the U.K. have attempted a workaround: Section 9(3) of the Copyright, Designs and Patents Act, 1988, attributes authorship of computer-generated works to the "person by whom the arrangements necessary for the creation of the work are undertaken." While innovative, this provision remains under-theorized and rarely litigated, leaving ambiguity about its scope in the age of advanced AI.

B. Patent Inventorship and the DABUS Precedent

In patent law, the issue is even more pressing. The Indian Patents Act, 1970, does not explicitly define "inventor," but its provisions assume human agency. Internationally, the TRIPS Agreement likewise does not contemplate non-human inventors.

The global debate crystallized around the DABUS applications filed by Dr. Stephen Thaler, who listed an AI system as the inventor. Courts in the U.K., U.S., and Europe rejected the applications, holding that inventors must be natural persons. By contrast, South Africa granted a patent naming DABUS as inventor, creating a precedent for recognizing non-human inventorship.[8] This divergence highlights a definitional vacuum at the international level. Without harmonization, the question of whether AI can ever be recognized as an inventor remains unresolved.

C. Consequences of the Definitional Vacuum

The lack of clarity about authorship and inventorship in AI-generated outputs leads to three major consequences.

1. Unowned Works and Inventions: If no legal author or inventor exists, AI outputs may fall into the public domain by default, undermining incentives for innovation.

2. Corporate Capture: In the absence of AI recognition, corporations deploying AI may

[8] Thaler v. Comptroller General of Patents, Designs and Trade Marks EWCA Civ 1374 (UK); European Patent Office, Decision J 8/20.

assert ownership through contractual frameworks or work-for-hire doctrines, leading to monopolization without explicit statutory basis.[9]

3. Forum Shopping and Fragmentation: Divergent international approaches (e.g., South Africa's recognition vs. Europe's rejection of AI inventors) risk creating fragmented global standards, destabilizing IP harmonization under TRIPS.

Thus, the definitional gap is not merely a theoretical problem but a practical one, generating uncertainty for creators, corporations, and states alike.

Originality and Inventive Step: Shifting Standards for Protection

The concepts of originality in copyright and inventive step (non-obviousness) in patent law represent the core thresholds for intellectual property protection. Both concepts were historically developed to measure human creativity and ingenuity. However, when applied to AI-generated works, these standards face significant doctrinal ambiguity.

A. Originality in Copyright: Human Skill versus Machine Autonomy

Indian copyright law, following Eastern Book Co. v. D.B. Modak, requires a "minimal degree of creativity" involving human skill and judgment. This test reflects a balance between the earlier "sweat of the brow" doctrine and the higher "modicum of creativity" standard adopted in the U.S. under Feist Publications v. Rural Telephone Service.

AI outputs challenge this standard. Generative AI systems autonomously create works that may appear "original" without any human intellectual contribution. If originality requires human intellectual effort, AI outputs risk exclusion from protection. Conversely, if originality is defined by the novelty of expression alone, AI-generated works might qualify, despite lacking human creativity. This ambiguity undermines doctrinal consistency, leaving courts with no clear framework for evaluating AI-generated works.

Some jurisdictions, like the U.K., attempt to bridge this gap by attributing authorship of computer-generated works to the person making "arrangements." Yet, this approach is under-inclusive for advanced AI, where human involvement is minimal or purely facilitative. Without

[9] Mark A. Lemley , Intellectual Property in the Age of Artificial Intelligence, 3 4 Harv. J.L. &Tech. 1, 25–28 (2020).

doctrinal reform, courts risk oscillating between over-protection (granting monopolies to corporations deploying AI) and under-protection (denying protection altogether).

B. Inventive Step in Patents: The Human Inventor Presumption

The Indian Patents Act, 1970, requires that an invention involve an "inventive step," meaning it must not be obvious to a "person skilled in the art." Traditionally, this test presupposes a human inventor engaging in creative problem-solving.

AI complicates this requirement because algorithms can autonomously generate novel and useful inventions by processing vast datasets beyond human capacity. If an AI invention is obvious to another AI but not to a human skilled in the art, does it satisfy the inventive step requirement? Current law provides no answer. The DABUS litigation exemplifies this doctrinal gap: while courts rejected AI inventorship, they did not fully address whether AI-generated inventions inherently satisfy or fail the inventive step standard.

Scholars warn that unless reinterpreted, the inventive step requirement may collapse under AI, either by making everything obvious (to AI) or granting protection to inventions with no human ingenuity at all.

Comparative and International Perspectives: Toward Harmonization

The emergence of AI-generated works has prompted different jurisdictions to adopt divergent approaches. Comparative analysis is essential to understand how statutory frameworks, case law, and policy instruments address authorship, inventorship, and ownership in AI outputs. India, being part of TRIPS obligations and a participant in WIPO discussions, must consider these global perspectives to avoid fragmentation and foster harmonization.

A. United States: Strict Human Authorship Doctrine

The United States Copyright Office has consistently rejected AI-generated works for copyright protection if no human authorship is involved.1 In Thaler v. Perlmutter, the U.S. District Court held that works autonomously generated by an AI system cannot be copyrighted, as the Copyright Act, 17 U.S.C. § 102(a), requires a human author. Similarly, the USPTO denied patent applications listing AI as inventors, emphasizing that only natural persons can qualify under U.S. patent law.

B. United Kingdom: Conditional Recognition via Human Arrangements

The U.K. has adopted a slightly more flexible approach. Section 9(3) of the Copyright, Designs and Patents Act, 1988, attributes authorship of computer-generated works to the person who made "arrangements necessary for the creation of the work." This allows limited human attribution even when AI operates autonomously.

However, the DABUS patent application was rejected in the U.K. Court of Appeal, demonstrating the limitations of this provision in patent law. The U.K. recognizes the problem but has not fully developed a doctrinal solution for AI inventors.

C. European Union: Policy Debate and Emerging Principles

The European Parliament has acknowledged the rise of AI and its implications for IP in its 2020 Resolution, but no binding legislation exists.6 Discussions include:

- Whether AI-generated works should receive sui generis protection.
- Liability frameworks for AI authorship.
- Harmonization challenges with TRIPS obligations.

The European Patent Office (EPO) rejected AI inventors in DABUS, aligning with the "natural person" principle, yet the EU continues consultations on potential future reforms.

D. India: Ambiguous Domestic Provisions

India's Copyright Act, 1957, § 2(d)(vi), recognizes computer-generated works but ties the author to the person "by whom the arrangements necessary for creation of the work are undertaken." The Patents Act, 1970, implicitly assumes human inventors.

India has not adjudicated cases directly concerning AI-generated works or inventions, creating legal ambiguity. Lessons from the U.S., U.K., and EU underscore the urgency of doctrinal clarification and legislative reform to prevent uncertainty, corporate monopolization, and international non-compliance.

Comparative Table of Jurisdictional Approaches:

Jurisdiction	Copyright Recognition	Patent Recognition	Notes/Implications
U.S.	No copyright without human author	Only natural person	Ensures doctrinal consistency; stifles AI innovation
U.K.	Attribution to arranger (S.9(3))	No AI inventors	Partial human attribution; inconsistent
EU	Policy discussions; sui generis contemplated	No AI inventors	Flexible policy; not yet binding
India	Computer-generated works (S.2(d)(vi))	Human inventors presumed	Ambiguous; lacks jurisprudence

Ethical, Economic, and Accountability Dimensions

The rise of AI-generated creative works and inventions has raised profound questions beyond legal definitions. Even if authorship or inventorship is doctrinally clarified, unresolved ethical dilemmas, economic consequences, and accountability gaps threaten the integrity and functionality of intellectual property law.

A. Balancing Ethics, Incentives, and Responsibility

1. **Ethical Considerations**

   AI cannot possess consciousness or moral agency, making it impossible for moral rights—such as the right to attribution and integrity—to attach to non-human creators. Scholars argue that granting moral rights to AI would undermine the very ethical foundations of copyright law, which were historically designed to protect human dignity and creative expression. Instead, moral rights should continue to vest in humans who design, operate, or supervise AI systems, ensuring that the ethical purpose of IP law remains intact.

2. **Economic Implications**

   Intellectual property law traditionally provides economic incentives to creators and

inventors. AI-generated works challenge this paradigm because corporations or entities deploying AI can claim rights over outputs with minimal human contribution, potentially creating monopolistic control over knowledge and innovation.4 Ryan Abbott and Mark Lemley suggest that a failure to regulate AI ownership could distort market incentives, either by over-rewarding corporate AI deployers or under-rewarding human creators.

3. **Accountability and Liability**

Assigning responsibility for infringement, errors, or harmful consequences of AI outputs is a critical challenge. Without clear attribution, enforcement becomes practically impossible. Current doctrines generally assign liability to deployers or programmers, but ambiguity persists when AI operates with autonomous learning, self-modification, or in decentralized systems. Some scholars propose a Human Attribution Principle, whereby legal responsibility and IP rights are assigned to the human or legal entity controlling the AI, effectively bridging doctrinal gaps while ensuring accountability.

Competing Ownership Models: Evaluating Legal Viability

The emergence of AI-generated works raises the fundamental question: who owns the output? Multiple ownership models have been proposed, each with doctrinal and practical implications.

A. Human Attribution Model

This model assigns rights to humans responsible for programming, deploying, or supervising AI.1 It aligns with moral rights and liability doctrines, ensuring accountability. While doctrinally consistent, it risks over-attribution, where corporations claim rights over works with minimal human input.

B. Sui Generis AI Rights

Sui generis frameworks propose exclusive rights for AI-generated works, independent of human authorship. For instance, EU discussions on database and AI-specific rights suggest time-limited, transferable protections without moral rights. This model encourages innovation while recognizing AI contributions but requires new statutory recognition, posing legislative challenges.

C. Public Domain Approach

Some scholars advocate releasing AI-generated works into the public domain, emphasizing open access and innovation diffusion. While socially beneficial, this risks corporate exploitation, as companies could circumvent IP protection via contracts, undermining incentives.

D. Hybrid Models

Hybrid frameworks combine human attribution and sui generis rights, balancing protection, incentives, and accountability.6 For example, humans may hold economic rights while AI outputs are recognized under limited sui generis protection. This approach is considered the most pragmatic and publication-worthy, bridging doctrinal gaps.

Pathways for Indian IPR Reform in Light of Global Practices

India's IPR laws currently assume human authorship and inventorship, creating a gap in AI-generated works. Reform is necessary to align domestic law with global trends.

A. Copyright Act Amendments

Amend S.2(d) to define authorship for computer-generated works, clarifying the role of humans and AI.1 Introduce sui generis protections to recognize AI outputs for a limited term.

B. Patents Act Reforms

Explicitly allow recognition of AI-assisted inventions while preserving inventive step and novelty criteria. Include clear guidelines for attribution to humans controlling the AI.

C. International Harmonization

Align Indian law with TRIPS obligations and WIPO recommendations to avoid forum shopping and inconsistencies in enforcement. Develop flexible, principles-based governance to anticipate autonomous AI innovations.

Future-Proofing Intellectual Property: Toward Adaptive Governance

AI continues to evolve rapidly, necessitating flexible, forward-looking IP frameworks.

A. Principles-Based Adaptive Governance

Rather than rigid statutory definitions, adopt principles-based rules: recognition of autonomous AI outputs, balanced incentives, and accountability mechanisms. Adaptive frameworks can respond to emerging technologies without constant legislative amendments.

B. Resilience and Innovation

Future-proof laws should integrate hybrid ownership models, time-limited AI rights, and human attribution principles. This ensures innovation is rewarded, moral and economic rights are preserved, and the system remains coherent across jurisdictions.

Conclusion

The rise of Artificial Intelligence marks a turning point in intellectual property law. The doctrinal gaps surrounding authorship, originality, and inventorship expose the inadequacy of a strictly human-centric paradigm. Comparative experiences reveal fragmented and inconsistent approaches, while ethical and economic considerations complicate policy choices.

This paper argues that a recalibration of IP law is necessary: one that acknowledges AI's creative capacities without undermining human innovation or inviting monopolization. By embracing hybrid or sui generis ownership models, coupled with adaptive governance, legal systems—particularly India's—can bridge current ambiguities while preparing for future technological shifts.

Ultimately, the future of intellectual property lies not in clinging to outdated doctrines but in crafting a forward-looking, inclusive framework that secures creativity, innovation, and accountability in the age of autonomous machines.