



The Indian Journal for Research in Law and Management

Open Access Law Journal – Copyright © 2026

Editor-in-Chief – Dr. Muktai Deb Chavan; Publisher – Alden Vas; ISSN: 2583-9896

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AI-GENERATED WORKS AND INTELLECTUAL PROPERTY LAW: CONSTITUTIONAL CHALLENGES AND EMERGING LEGAL FRAMEWORKS

~ *Sunidha Shaw*

ABSTRACT

The rapid advancement of artificial intelligence (AI) has significantly transformed the landscape of intellectual property (IP) law by enabling machines to autonomously generate literary, artistic, musical, and technological outputs. Unlike traditional technological tools that merely assist human creativity, modern generative AI systems are capable of independently producing works and inventions with minimal human intervention. This development challenges the traditional human-centric foundations of intellectual property law, particularly the concepts of authorship, originality, and inventorship. Existing legal frameworks in both India and the United States continue to recognize only human creators, thereby creating uncertainty regarding the legal status of AI-generated works.

This research paper critically examines the constitutional and legal implications of extending or denying intellectual property protection to AI-generated works through a comparative analysis of India and the United States. The study analyzes copyright and patent law frameworks, judicial precedents, and constitutional principles governing AI-driven intellectual property protection. In India, the analysis is situated within the framework of Articles 14, 19(1)(a), and 21 of the Constitution of India, while the United States approach is examined through the Intellectual Property Clause under Article I, Section 8, Clause 8 of the U.S. Constitution and First Amendment considerations.

Adopting a doctrinal and comparative methodology, the paper evaluates competing legal models, including the human attribution model, public domain model, AI legal personality model, and sui generis protection framework. The study argues that the existing human-centric intellectual property regime is inadequate to address the realities of AI-generated creativity and innovation. It concludes that a balanced and constitutionally compliant sui generis framework offers the most pragmatic solution for regulating AI-generated works while preserving innovation incentives, public interest, and fundamental rights.

INTRODUCTION

1. Introduction

The rapid advancement of artificial intelligence (AI) has significantly transformed the modern understanding of creativity, innovation, and intellectual production¹. Unlike traditional technologies that merely assist human effort, contemporary AI systems are capable of autonomously generating literary works, artistic images, music, software code, and even technological inventions with minimal human intervention. This technological evolution has created unprecedented challenges for intellectual property (IP) law, which has historically been based upon the assumption that creativity and innovation are exclusively human activities.

Traditionally, copyright law protects original works of authorship, while patent law grants exclusive rights to inventors for novel and useful inventions. These legal frameworks were developed on the premise that intellectual labour and creativity originate from human intellect and therefore deserve legal recognition and economic reward. However, the emergence of AI-generated works challenges the traditional concepts of authorship, originality, inventorship, and ownership because machine-generated outputs may be created independently without meaningful human contribution².

The growing use of AI across sectors such as healthcare, media, entertainment, education, software development, and scientific research has intensified legal uncertainty regarding the protection of AI-generated works³. Important questions arise regarding who should be recognized as the owner

¹ WIPO, *WIPO Technology Trends 2019: Artificial Intelligence* (World Intellectual Property Organization 2019)

² Daniel Gervais, 'The Machine as Author' (2020) 105 *Iowa Law Review* 2053.

³ OECD, *Artificial Intelligence in Society* (OECD Publishing 2019).

or creator of such outputs. Should ownership vest in the programmer, developer, user, or owner of the AI system?⁴ More importantly, should AI-generated works receive intellectual property protection under existing legal frameworks at all? The absence of clear legal recognition creates uncertainty for creators, developers, corporations, and policymakers.

At the same time, unrestricted intellectual property protection for AI-generated works may create serious economic and constitutional concerns⁵. Large technology corporations possessing advanced AI infrastructure and extensive datasets may accumulate excessive control over creative and technological outputs⁶, thereby restricting competition and public access to knowledge. Conversely, denying protection altogether may discourage innovation and investment in artificial intelligence technologies. Therefore, the regulation of AI-driven intellectual property requires balancing innovation incentives with public interest and constitutional safeguards.

The issue becomes particularly significant in jurisdictions such as India and the United States, where intellectual property law intersects with constitutional values and legal principles. In India, intellectual property rights must remain compatible with constitutional guarantees under Articles 14, 19(1)(a), and 21 of the Constitution of India⁷. In the United States, intellectual property protection is rooted in the Intellectual Property Clause of the U.S. Constitution⁸ and must remain consistent with First Amendment protections concerning freedom of expression.

This research paper critically examines the constitutional and legal implications of AI-driven intellectual property protection through a comparative analysis of India and the United States. It analyses the challenges posed by AI-generated works, evaluates the adequacy of existing intellectual property frameworks, and explores emerging legal models for regulating machine-generated creativity. The paper argues that traditional human-centric intellectual property frameworks are increasingly inadequate in addressing the realities of artificial intelligence⁹ and

⁴ Ryan Abbott, *The Reasonable Robot: Artificial Intelligence and the Law* (Cambridge University Press 2020).

⁵ Julie E Cohen, 'Copyright and the Perfect Curve' (2000) 53 *Vanderbilt Law Review* 1799.

⁶ Shubha Ghosh, *Intellectual Property: Private Rights, the Public Interest, and the Regulation of Creative Activity* (West Academic Publishing 2014)

⁷ Constitution of India arts 14, 19(1)(a) and 21.

⁸ US Constitution art I § 8 cl 8.

⁹ WIPO Conversation on Intellectual Property and Artificial Intelligence, *Revised Issue Paper on Intellectual Property Policy and Artificial Intelligence* (WIPO 2020).

that a balanced and technologically responsive legal framework is necessary to regulate AI-generated intellectual property in the modern digital era.

2. CONCEPTUAL FRAMEWORK OF ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY

2.1 Introduction

The rapid advancement of artificial intelligence (AI) has fundamentally transformed the traditional understanding of creativity, innovation, and intellectual production. Intellectual property (IP) law historically evolved on the assumption that creative and inventive activities are inherently human functions deserving legal protection and economic reward. Copyright law protects original works of authorship, while patent law grants exclusive rights to inventors for novel and useful inventions¹⁰. However, the emergence of AI systems capable of autonomously generating literary works, artistic creations, musical compositions, software code, and technological inventions has disrupted these traditional assumptions and exposed significant limitations within existing intellectual property frameworks.

Unlike conventional technologies that merely assist human effort, modern generative AI systems possess the capability to independently create content with minimal human intervention¹¹. Through machine learning and deep learning techniques, AI systems analyse extensive datasets, recognize patterns, and generate outputs resembling or even surpassing human-created works. This technological development raises complex legal questions concerning authorship, originality, inventorship, ownership, and liability. More importantly, it challenges the foundational assumption that creativity and innovation originate exclusively from human intellect and labour.

The conceptual challenges posed by AI extend beyond statutory interpretation and directly affect the philosophical and constitutional foundations of intellectual property law. Intellectual property rights operate at the intersection of private rights and public interest by granting limited monopolies to incentivize innovation while preserving access to knowledge and information. The rise of AI-generated works therefore creates a pressing need to reconsider whether existing human-

¹⁰ Lionel Bently and Brad Sherman, *Intellectual Property Law* (5th edn, Oxford University Press 2018).

¹¹ OECD, *Artificial Intelligence in Society* (OECD Publishing 2019).

centric intellectual property doctrines remain adequate in the age of autonomous machine-generated creativity.

This chapter establishes the conceptual framework necessary for understanding the relationship between artificial intelligence and intellectual property law. It analyses the legal understanding of AI, the traditional foundations of intellectual property law, the doctrinal challenges posed by AI-generated works, the philosophical theories underlying intellectual property protection, and the emerging legal models proposed for regulating AI-driven intellectual property.

2.2 Understanding Artificial Intelligence in the Legal Context

Artificial intelligence broadly refers to computational systems capable of performing tasks that ordinarily require human intelligence, including reasoning, learning, decision-making, pattern recognition, and problem-solving. Modern AI systems, particularly generative AI models, rely heavily upon machine learning algorithms trained on extensive datasets consisting of books, images, articles, software code, and digital information. Through these datasets, AI systems learn patterns and generate new outputs based on probabilistic prediction and synthesis.

From a legal perspective, AI differs fundamentally from earlier technological tools because it increasingly functions as an autonomous creator rather than a passive instrument. Traditional technologies such as cameras, computers, or editing software merely facilitated human creativity. In contrast, contemporary AI systems are capable of independently producing:

- literary works,
- artistic images,
- musical compositions,
- software programs,
- scientific discoveries, and
- technological inventions.

A defining characteristic of AI systems is their unpredictability. The outputs generated by machine learning systems may not be directly foreseeable or controllable even by developers and users. Consequently, determining legal responsibility and ownership becomes increasingly difficult. This

unpredictability challenges traditional legal assumptions linking creativity and innovation to conscious human intention and intellectual effort.

Another important issue concerns the use of copyrighted materials and personal data in training AI systems. Generative AI models depend heavily upon extensive datasets containing copyrighted works, publicly available information, and personal data. This creates legal concerns regarding copyright infringement, derivative works, data protection, and informational privacy. Therefore, AI systems simultaneously function as both consumers and creators of intellectual property, complicating legal regulation at both stages.

2.3 Traditional Foundations of Intellectual Property Law

Intellectual property law historically developed to protect human creativity, innovation, and intellectual labour. Copyright law grants protection to original literary, artistic, musical, and dramatic works, while patent law protects inventions satisfying the requirements of novelty, inventive step, and industrial applicability. Both systems were fundamentally based on the assumption that creativity and innovation are uniquely human activities deserving legal protection.

In copyright law, originality and authorship constitute the primary requirements for protection. Earlier copyright doctrines focused heavily on the “sweat of the brow” principle, under which labour and effort alone justified protection. However, modern jurisprudence shifted toward requiring intellectual creativity. In *Feist Publications v. Rural Telephone Service*¹², the U.S. Supreme Court held that originality requires independent creation and a minimal degree of creativity. Similarly, the Indian Supreme Court in *Eastern Book Company v. D.B. Modak*¹³ adopted the “modicum of creativity” standard and emphasized intellectual creativity rather than mere labour.

Authorship has also been consistently associated with human agency and intellectual conception. In *Burrow-Giles Lithographic Co. v. Sarony*, the U.S. Supreme Court held that copyright protection arises from the “original intellectual conception” of the author. This judgment firmly embedded human creativity within copyright jurisprudence.

¹² *Feist Publications Inc v Rural Telephone Service Co* 499 US 340 (1991).

¹³ *Eastern Book Company v DB Modak* (2008) 1 SCC 1.

Patent law similarly assumes that inventorship is a human activity involving intellectual conception and technological innovation. Patent systems traditionally recognize inventors as natural persons capable of independent thought, experimentation, and innovation. Consequently, intellectual property law evolved as a fundamentally human-centric system grounded in assumptions of human creativity and intellectual labour.

2.4 AI and the Crisis of Authorship, Originality, and Inventorship

The emergence of AI-generated works has created a significant doctrinal crisis within intellectual property law by challenging traditional concepts such as authorship, originality, inventorship, and ownership¹⁴. Advanced AI systems are increasingly capable of independently generating creative and inventive outputs without meaningful human intervention.

One of the most significant challenges concerns authorship in copyright law. Existing legal systems continue to associate authorship with human creativity and intellectual effort. However, AI-generated works may involve little or no direct human contribution. In *Naruto v. Slater*¹⁵, commonly known as the “Monkey Selfie Case,” the court denied copyright protection to a photograph taken by a monkey and reaffirmed that non-human entities cannot qualify as authors under copyright law. Although the dispute did not involve artificial intelligence, its reasoning has become highly influential in AI-related copyright debates.

Artificial intelligence also challenges the traditional concept of originality. AI-generated works frequently demonstrate novelty, variation, and independent generation, thereby satisfying many objective indicators of originality. Nevertheless, courts continue to associate originality with human intellectual creativity. This creates tension between evaluating originality based on the final output itself and insisting upon human involvement as an essential condition for protection.

Patent law faces similar challenges in relation to inventorship. Modern AI systems are capable of autonomously generating technological inventions and scientific solutions. Despite this capability, courts continue to require human inventorship. In *Thaler v. Vidal*¹⁶, the U.S. Court of Appeals held

¹⁴ Ryan Abbott, ‘I Think, Therefore I Invent: Creative Computers and the Future of Patent Law’ (2016) 57 Boston College Law Review 1079.

¹⁵ *Naruto v Slater* 888 F 3d 418 (9th Cir 2018).

¹⁶ *Thaler v Vidal* 43 F 4th 1207 (Fed Cir 2022).

that only natural persons can qualify as inventors under patent law. Consequently, AI-generated inventions currently remain excluded from patent protection under existing frameworks.

The inability of traditional intellectual property doctrines to adequately address AI-generated works highlights the growing tension between technological advancement and legal orthodoxy. Existing frameworks continue to rely upon human-centric assumptions despite the increasing autonomy of artificial intelligence systems.

2.5 Philosophical Foundations of Intellectual Property and Their Relevance to AI

The philosophical foundations of intellectual property law provide important insights into the justification and scope of intellectual property protection. Traditional theories include the labour theory, personality theory, utilitarian theory, and economic incentive theory. However, the emergence of AI-generated works exposes significant limitations within these theories because they are fundamentally premised upon human creativity and intellectual effort.

The labour theory, associated with John Locke, justifies ownership based on human labour and effort. Intellectual property law adopted this theory by treating creative works and inventions as products of intellectual labour¹⁷ deserving protection. However, AI systems do not labour in the human sense because their outputs emerge through algorithmic processes rather than conscious intellectual effort. Therefore, the labour theory struggles to adequately justify ownership over AI-generated works.

Similarly, the personality theory associated with Hegel views creative works as extensions of human personality, identity, and emotions¹⁸. This theory forms the basis for moral rights in copyright law. However, artificial intelligence lacks consciousness, subjective intention, and personality. Consequently, AI-generated works cannot embody personality in the traditional legal sense.

In contrast, utilitarian and economic incentive theories provide greater flexibility in addressing AI-generated works. Utilitarianism justifies intellectual property rights as mechanisms for promoting innovation, economic growth, and societal welfare. Under this approach, the primary concern is not the identity of the creator but whether granting protection promotes technological advancement

¹⁷ John Locke, *Two Treatises of Government* (1689).

¹⁸ Georg Wilhelm Friedrich Hegel, *Philosophy of Right* (1820).

and public benefit. Protecting AI-generated works may therefore encourage investment in AI technologies and stimulate innovation. However, excessive protection may also lead to monopolization, concentration of economic power, and restrictions on public access to knowledge.

The economic incentive theory similarly supports intellectual property protection as a means of encouraging investment and reducing market failure. The development and training of advanced AI systems require substantial financial investment, computational infrastructure, and data acquisition. Denying protection to AI-generated works may discourage private investment and innovation. Nevertheless, unrestricted protection may undermine competition and public access by concentrating rights within dominant technology corporations.

Thus, the rise of artificial intelligence demonstrates that traditional philosophical theories underlying intellectual property law are increasingly inadequate and necessitates more adaptive and balanced legal approaches.

2.6 Emerging Legal Models for AI-Generated Intellectual Property

The increasing autonomy of artificial intelligence has led to the emergence of several legal models for regulating AI-generated works. One commonly discussed approach is the human attribution model, under which ownership is attributed to a human associated with the AI system, such as the developer or user. This model preserves consistency with existing intellectual property frameworks but often results in artificial attribution because humans may not directly control the final output.

Another approach is the AI legal personality model, which proposes granting AI systems limited legal personality capable of holding intellectual property rights. However, this model faces serious conceptual and ethical challenges because AI lacks accountability, consciousness, and legal responsibility.

A contrasting approach is the public domain model, under which AI-generated works receive no intellectual property protection and automatically enter the public domain¹⁹. While this promotes public access and prevents monopolization, it may discourage investment in AI technologies.

¹⁹ Pamela Samuelson, 'Allocating Ownership Rights in Computer-Generated Works' (1986) 47 University of Pittsburgh Law Review 1185.

Increasingly, scholars support the creation of a sui generis framework specifically designed for AI-generated works. Such a framework may provide limited and specialized protection while balancing innovation incentives, public interest, competition, and constitutional safeguards. This model is widely regarded as the most balanced approach for regulating AI-generated intellectual property.

3. LEGAL FRAMEWORK OF AI-DRIVEN INTELLECTUAL PROPERTY IN INDIA

3.1 Introduction

India's intellectual property regime is primarily governed by the Copyright Act, 1957 and the Patents Act, 1970, along with judicial interpretations and constitutional principles. Unlike purely commercial or utilitarian approaches, the Indian legal framework operates within the broader constitutional structure established under the Constitution of India. Consequently, intellectual property rights in India are not viewed merely as economic rights but must also remain compatible with constitutional guarantees such as equality, freedom of speech and expression, privacy, and public interest. The rapid advancement of artificial intelligence (AI), particularly generative AI systems capable of autonomously creating literary, artistic, and technological outputs, has exposed significant limitations within this traditional legal framework.

Artificial intelligence has transformed the manner in which creativity and innovation occur. AI systems are now capable of generating artistic images, music, software code, articles, and technological inventions with minimal human intervention. This development raises several complex legal questions regarding authorship, originality, inventorship, ownership, and liability. Existing intellectual property laws in India were drafted on the assumption that creativity and innovation originate exclusively from human intellect and effort. Consequently, the rise of AI-generated works has created uncertainty regarding whether such works qualify for protection under Indian law and who should be recognized as the rightful owner or creator.

This chapter critically examines the Indian legal framework governing AI-driven intellectual property. It analyses the provisions of the Copyright Act, 1957 and the Patents Act, 1970, constitutional principles relevant to AI-generated works, and the major legal challenges confronting India in regulating artificial intelligence within the intellectual property regime.

3.2 Copyright Law and Artificial Intelligence in India

The Copyright Act, 1957 governs copyright protection in India. Section 13 of the Act grants protection to original literary, dramatic, musical, and artistic works, cinematograph films, and sound recordings. Originality remains a fundamental requirement for copyright protection, and Indian courts have consistently interpreted originality as requiring intellectual creativity and independent effort.

A particularly important provision in the context of AI-generated works is Section 2(d)(vi) of the Copyright Act, which provides that in the case of a computer-generated work, the “author” shall be the person who causes the work to be created. This provision appears comparatively flexible because it recognizes authorship in relation to computer-generated works. However, its application to modern autonomous AI systems remains uncertain.

The phrase “person who causes the work to be created” creates ambiguity regarding ownership and authorship of AI-generated outputs. Multiple interpretations are possible. The programmer who develops the AI system may be treated as the author because the system operates through algorithms created by the programmer. Alternatively, the user who provides prompts or instructions to the AI system may be regarded as the author. Ownership may also vest in the company or entity operating the AI system. However, each of these approaches presents conceptual difficulties because advanced AI systems often generate outputs autonomously and unpredictably without direct human creative involvement.

Indian copyright jurisprudence has traditionally emphasized human intellectual effort. In *Eastern Book Company v. D.B. Modak*, the Supreme Court held that originality requires a “modicum of creativity” and cannot be based merely upon labour or effort. This interpretation indicates that copyright law remains closely associated with human creativity. Consequently, although Section 2(d)(vi) offers some flexibility, it remains uncertain whether Indian courts would extend protection to fully autonomous AI-generated works lacking meaningful human contribution.

Another major issue concerns the use of copyrighted materials for training AI systems. Generative AI models depend heavily upon extensive datasets consisting of books, images, music, software, and digital content, much of which is protected under copyright law. Indian copyright law presently lacks clear provisions regulating text and data mining, AI training datasets, and machine learning practices. This creates uncertainty regarding whether the unauthorized use of copyrighted materials for AI training constitutes infringement.

At the same time, granting unrestricted copyright protection to AI-generated works may create economic and constitutional concerns. Large technology corporations possessing access to advanced AI infrastructure and extensive datasets may accumulate excessive control over creative content, thereby restricting competition and public access to knowledge. Therefore, Indian copyright law faces the challenge of balancing innovation incentives with public interest and constitutional values.

3.3 Patent Law and Artificial Intelligence in India

Patent protection in India is governed by the Patents Act, 1970. To qualify for patent protection, an invention must satisfy the requirements of novelty, inventive step, and industrial applicability. Artificial intelligence systems are increasingly capable of autonomously generating technological innovations and scientific solutions that satisfy these traditional patentability requirements.

However, the principal challenge within the Indian patent framework concerns inventorship. The Patents Act implicitly assumes that inventors are natural persons possessing legal personality and intellectual capacity. Patent applications require disclosure of the inventor's name and details, thereby reflecting the assumption of human inventorship. AI-generated inventions challenge this assumption because advanced AI systems may independently generate inventions without direct human conception.

This creates uncertainty regarding who should be recognized as the inventor. Potential claimants include programmers, developers, users, owners of AI systems, or corporations financing AI research. However, attributing inventorship to such individuals often appears artificial because they may neither foresee nor directly contribute to the inventive output produced by the AI system.

Another important issue arises under Section 3(k) of the Patents Act, which excludes “a mathematical or business method or a computer programme per se or algorithms” from patentability. Since AI technologies fundamentally rely upon algorithms and computational methods, this provision creates significant barriers for AI-related inventions in India. Although Indian patent authorities have attempted to permit patents involving technical effects or technical contributions beyond software alone, ambiguity continues to exist regarding the patentability of AI-driven inventions.

The inability to adequately recognize AI-generated inventions may discourage innovation and disclosure. Developers may increasingly rely upon trade secrets instead of patents, thereby limiting public access to technological knowledge. However, granting extensive patent rights over AI-generated inventions may also create monopolization concerns by concentrating technological control within dominant corporations. Thus, Indian patent law faces the difficult task of balancing technological advancement with public interest, competition, and fairness.

3.4 Constitutional Dimensions of AI-Driven Intellectual Property in India

The regulation of AI-driven intellectual property in India must also be examined through the constitutional framework established under Part III of the Constitution of India. Intellectual property rights are not absolute and must remain compatible with constitutional guarantees relating to equality, freedom of speech and expression, privacy, and public interest.

Article 14 of the Constitution guarantees equality before law and prohibits arbitrary state action. AI-generated intellectual property raises equality concerns because granting exclusive rights over AI-generated works may disproportionately benefit large corporations possessing advanced technological resources and datasets. Excessive concentration of intellectual property rights may increase economic inequality and create barriers for smaller creators and innovators. At the same time, denying protection to AI-generated works while protecting comparable human-generated works may also raise concerns regarding arbitrary classification. Therefore, any legal framework governing AI-generated works must satisfy the constitutional requirement of reasonableness and non-arbitrariness.

Article 19(1)(a), which guarantees freedom of speech and expression, is equally important in the context of AI-generated intellectual property. Copyright law inherently restricts the use and dissemination of protected works. Excessive protection of AI-generated content may therefore restrict public access to information, creativity, education, and research. AI systems depend heavily upon publicly available content and copyrighted materials for training purposes. Restrictive copyright regulation may hinder technological innovation and creative expression. In *Shreya Singhal v. Union of India*²⁰, the Supreme Court emphasized the importance of protecting free

²⁰ *Shreya Singhal v Union of India* (2015) 5 SCC 1.

expression within the digital environment. Consequently, intellectual property regulation must carefully balance innovation incentives with freedom of expression and access to knowledge.

The right to privacy under Article 21 also assumes increasing significance in relation to AI technologies. AI systems frequently rely upon extensive datasets containing personal information and behavioural data. The unauthorized use of such information raises serious concerns regarding informational privacy and data protection. In *Justice K.S. Puttaswamy v. Union of India*²¹, the Supreme Court recognized privacy as a fundamental right protected under Article 21. Therefore, AI-driven intellectual property frameworks must incorporate safeguards relating to consent, transparency, and data protection.

3.5 Challenges in the Indian Legal Framework

Despite the increasing importance of artificial intelligence, the Indian legal framework remains inadequately equipped to address the realities of AI-generated creativity and innovation. Existing intellectual property laws continue to operate on fundamentally human-centric assumptions regarding authorship and inventorship. The absence of clear statutory definitions concerning AI-generated works, AI-assisted works, and autonomous inventions creates significant legal uncertainty.

Indian courts have not yet comprehensively addressed issues relating to AI authorship, inventorship, ownership, or liability. Consequently, developers, users, corporations, and content creators lack certainty regarding the legal status of AI-generated works and inventions. Similarly, the absence of specific provisions governing AI training datasets, text and data mining, and machine learning practices creates uncertainty regarding copyright infringement and fair dealing.

Another significant concern relates to monopolization and concentration of economic power. Large technology corporations possessing access to advanced AI systems and extensive datasets may accumulate excessive intellectual property rights, thereby limiting competition and access to knowledge. Therefore, while Indian intellectual property law provides a foundational framework, substantial legislative and policy reforms are necessary to effectively regulate AI-driven intellectual property in a constitutionally balanced and technologically responsive manner.

²¹ *Justice KS Puttaswamy v Union of India* (2017) 10 SCC 1.

4. AI-DRIVEN INTELLECTUAL PROPERTY LAW IN THE UNITED STATES

4.1 Introduction

The United States occupies a leading position in the development of artificial intelligence technologies and intellectual property jurisprudence. As the home of major technology corporations and advanced AI research institutions, the United States has become one of the primary jurisdictions confronting the legal challenges posed by AI-generated works and inventions. The American intellectual property system is primarily utilitarian in nature and is constitutionally rooted in Article I, Section 8, Clause 8 of the U.S. Constitution, commonly known as the Intellectual Property Clause. This provision empowers Congress to grant exclusive rights to authors and inventors for limited periods in order “to promote the progress of science and useful arts.”

Unlike rights-based constitutional systems that strongly emphasize balancing intellectual property with fundamental rights, the American approach traditionally focuses upon promoting innovation, technological advancement, and economic growth. However, the rapid advancement of artificial intelligence, particularly generative AI systems capable of autonomously creating literary, artistic, and technological outputs, has exposed significant limitations within the existing U.S. intellectual property framework. Similar to India, the American legal system continues to operate on fundamentally human-centric assumptions regarding creativity and inventorship.

The United States has witnessed increasing legal disputes concerning AI-generated works, copyright registration, AI inventorship, and the use of copyrighted materials for training AI systems. Courts and administrative authorities have consistently reaffirmed the requirement of human authorship and inventorship, thereby excluding fully autonomous AI-generated works from direct intellectual property protection. At the same time, concerns regarding monopolization, access to information, innovation incentives, and freedom of expression have intensified debates regarding the future regulation of AI-driven intellectual property.

This chapter critically examines the legal framework governing AI-generated intellectual property in the United States. It analyses the constitutional basis of intellectual property protection, the treatment of AI-generated works under copyright and patent law, judicial developments, and constitutional concerns arising under the First Amendment.

4.2 Constitutional Basis of Intellectual Property in the United States

The constitutional foundation of intellectual property law in the United States is contained in the Intellectual Property Clause under Article I, Section 8, Clause 8 of the U.S. Constitution. This provision authorizes Congress to secure exclusive rights to authors and inventors for limited periods in order to promote scientific and technological progress.

The American intellectual property framework is fundamentally utilitarian in nature. Unlike natural rights theories that treat intellectual property as an inherent moral entitlement, the U.S. system views intellectual property rights primarily as policy instruments intended to encourage innovation and economic growth. Copyrights and patents are therefore justified not merely as rewards for creators but as mechanisms for promoting public welfare and technological advancement.

This utilitarian orientation significantly influences the regulation of AI-generated intellectual property. Legal debates concerning AI-generated works often focus upon whether granting protection would encourage technological progress and investment. However, the constitutional requirement that intellectual property rights must “promote progress” also imposes limitations upon excessive monopolization. Consequently, debates surrounding AI-generated works increasingly involve concerns regarding concentration of economic power, competition, and public access to knowledge.

4.3 Copyright Law and Artificial Intelligence in the United States

Copyright protection in the United States is governed by the Copyright Act, 1976, which grants protection to “original works of authorship fixed in any tangible medium of expression.” Although the Act does not explicitly define the term “author,” American courts and administrative authorities have consistently interpreted authorship as requiring human creativity and intellectual conception.

One of the foundational decisions concerning human authorship is *Burrow-Giles Lithographic Co. v. Sarony*²², where the U.S. Supreme Court held that copyright protection arises from the “original intellectual conception” of the human author. This judgment firmly embedded human agency within American copyright law.

²² *Burrow-Giles Lithographic Co v Sarony* 111 US 53 (1884).

The principle of human authorship was reaffirmed in *Naruto v. Slater*, popularly known as the “Monkey Selfie Case.” In this case, the Ninth Circuit denied copyright protection to a photograph taken by a monkey and held that non-human entities cannot claim authorship rights under U.S. copyright law. Although the dispute did not directly concern artificial intelligence, the reasoning has become highly influential in AI-related copyright disputes.

The U.S. Copyright Office has similarly adopted a strict human-authorship approach. It has repeatedly refused registration for works generated entirely by artificial intelligence without meaningful human creative contribution. According to the Copyright Office, copyright protection extends only to portions of works involving human creativity and intellectual judgment. Purely AI-generated outputs are therefore excluded from copyright protection.

This position creates significant legal uncertainty because modern generative AI systems are capable of autonomously producing sophisticated literary, artistic, and musical works with minimal human involvement. In many cases, users merely provide prompts or instructions while the AI independently generates the final output. Consequently, determining whether sufficient human creativity exists for copyright protection becomes increasingly difficult.

Another major issue concerns the use of copyrighted materials for training AI systems. Generative AI models rely heavily upon extensive datasets containing books, articles, music, software, and digital content protected under copyright law. AI companies frequently use such materials without authorization, leading to multiple copyright infringement claims. Technology companies often argue that AI training constitutes “fair use” because it is transformative and promotes technological innovation. However, copyright owners contend that unauthorized use of their works for machine learning violates their exclusive rights and undermines the economic value of their content.

Therefore, American copyright law currently faces significant challenges in balancing innovation incentives, fair use principles, and protection of creators’ rights in the age of artificial intelligence.

4.4 Patent Law and Artificial Intelligence in the United States

Patent law in the United States is governed by the Patent Act and administered by the United States Patent and Trademark Office (USPTO). Similar to copyright law, American patent law remains fundamentally human-centric and associates inventorship with natural persons.

The most significant judicial development concerning AI inventorship is *Thaler v. Vidal*. In this case, Stephen Thaler attempted to list an AI system known as DABUS as the inventor of patentable inventions. The USPTO rejected the application, and the U.S. Court of Appeals ultimately held that only natural persons can qualify as inventors under U.S. patent law. The court emphasized that statutory language repeatedly refers to inventors using terms applicable only to human beings.

The *Thaler* decision demonstrates the continued reliance of American patent law upon human-centric assumptions regarding innovation and technological creativity. However, advanced AI systems are increasingly capable of independently generating scientific discoveries and technological inventions without direct human conception. Consequently, excluding AI-generated inventions from patent protection may discourage disclosure and reduce incentives for innovation.

At the same time, granting unrestricted patent protection to AI-generated inventions raises serious economic concerns. Large technology corporations possessing advanced AI infrastructure and extensive datasets may accumulate excessive patent monopolies, thereby restricting competition and technological accessibility. Therefore, the United States continues to adopt a cautious approach toward AI inventorship while broader policy debates regarding reform remain ongoing.

4.5 First Amendment Concerns and Freedom of Expression

The regulation of AI-generated intellectual property in the United States also raises important constitutional concerns under the First Amendment, which protects freedom of speech and expression. Intellectual property law inherently restricts the use and dissemination of protected works, thereby creating tension between exclusive rights and expressive freedoms.

Generative AI systems depend heavily upon publicly available information and copyrighted materials for training purposes. Excessive intellectual property protection may therefore restrict access to information, research, education, and transformative creativity. American courts have historically attempted to balance copyright protection with First Amendment values through doctrines such as fair use and the idea-expression distinction.

The fair use doctrine plays a particularly important role in AI-related disputes because AI companies frequently argue that machine learning constitutes transformative use serving broader technological and public interests. However, growing commercialization of AI-generated content

has intensified concerns regarding monopolization, restrictions on creativity, and concentration of expressive power within large technology corporations.

Thus, the regulation of AI-generated intellectual property in the United States requires balancing innovation incentives with constitutional commitments to free expression and public access to knowledge.

5. EMERGING LEGAL MODELS FOR AI-GENERATED WORKS

5.1 Introduction

The rapid advancement of artificial intelligence has created unprecedented challenges for traditional intellectual property law. Existing copyright and patent frameworks were developed on the assumption that creativity and innovation are inherently human activities. However, modern AI systems are increasingly capable of autonomously generating literary works, artistic images, musical compositions, software codes, and technological inventions with minimal or no direct human intervention. This development has created significant uncertainty regarding authorship, inventorship, ownership, liability, and protection of AI-generated outputs.

Traditional intellectual property doctrines remain fundamentally human-centric and therefore struggle to adequately regulate machine-generated creativity. Courts across jurisdictions, including India and the United States, continue to insist upon human authorship and inventorship as prerequisites for intellectual property protection. At the same time, the increasing commercialization of generative AI systems has intensified concerns regarding innovation incentives, public access to knowledge, monopolization, and concentration of economic power.

In response to these challenges, several legal models have emerged seeking to regulate AI-generated works in different ways. These models attempt to balance technological innovation with public interest, constitutional values, economic efficiency, and legal accountability. The major approaches include the human attribution model, the AI legal personality model, the public domain model, and the sui generis protection model. Each of these approaches presents distinct advantages and limitations.

This chapter critically examines the emerging legal models proposed for regulating AI-generated intellectual property and evaluates their suitability in addressing the challenges posed by artificial intelligence.

5.2 Human Attribution Model

One of the most widely discussed approaches for regulating AI-generated works is the human attribution model. Under this approach, authorship or inventorship is attributed to a human associated with the AI system, such as the programmer, developer, user, owner, or operator of the AI platform. This model seeks to preserve continuity with existing intellectual property frameworks by avoiding recognition of AI systems as independent legal creators.

The principal advantage of the human attribution model lies in its compatibility with current legal doctrines. Existing copyright and patent laws are structured around human authorship and inventorship, and attributing ownership to a human allows AI-generated works to fit within traditional legal frameworks without extensive legislative reform. The model also ensures accountability because a human entity remains legally responsible for infringement, commercialization, and enforcement of rights.

Under this approach, programmers may be treated as authors because they design and train the AI system responsible for generating outputs. Alternatively, users who provide prompts and instructions to the AI system may be recognized as authors because their input influences the final work. Some scholars also argue that ownership should vest in corporations or entities controlling the AI system because they invest resources in developing and operating the technology.

However, the human attribution model suffers from several conceptual weaknesses. In many cases, AI systems generate outputs autonomously and unpredictably without meaningful human creative contribution. Developers and users may neither foresee nor directly control the final output generated by the AI system. Consequently, attributing authorship or inventorship to humans often appears artificial and inconsistent with the realities of autonomous machine-generated creativity. Furthermore, this model may unjustly enrich developers or corporations who contribute little to the actual creative process while excluding recognition of the independent role played by AI systems.

Despite these criticisms, the human attribution model remains the most practical approach under existing intellectual property frameworks and continues to influence legal systems across jurisdictions.

5.3 AI Legal Personality Model

Another significant approach is the AI legal personality model, which proposes granting artificial intelligence systems a limited form of legal personality capable of holding intellectual property rights. Proponents of this approach argue that recognizing AI as an independent creator more accurately reflects technological reality, particularly where AI systems autonomously generate works and inventions without direct human intervention.

Supporters of the AI legal personality model contend that traditional intellectual property frameworks should evolve alongside technological advancements. Since AI systems are increasingly capable of independently generating creative and inventive outputs, denying them recognition creates conceptual inconsistency and legal uncertainty. Granting legal personality to AI systems could potentially resolve issues relating to authorship and inventorship by treating AI as an independent legal entity similar to corporations.

The AI legal personality approach may also encourage innovation by allowing direct recognition of machine-generated creativity. It acknowledges the autonomous capabilities of AI systems rather than artificially attributing creativity to humans who may have played only a minimal role in generating the final output.

However, this model faces serious conceptual, ethical, and practical challenges. Legal personality traditionally presupposes consciousness, moral agency, accountability, and the capacity to bear rights and obligations. Artificial intelligence systems lack emotions, subjective intention, moral responsibility, and independent legal capacity. Consequently, granting legal personality to AI may undermine foundational principles of legal responsibility and accountability.

Another major concern involves enforcement and liability. If an AI system infringes intellectual property rights or generates unlawful content, determining liability becomes extremely difficult. AI systems cannot independently bear punishment, compensate victims, or fulfill legal obligations. Additionally, granting intellectual property rights to AI systems may create uncertainty regarding ownership, transferability, and economic exploitation of such rights.

Therefore, although the AI legal personality model offers a theoretically innovative approach, it remains highly controversial and currently lacks practical feasibility within existing legal systems.

5.4 Public Domain Model

A contrasting approach is the public domain model, under which AI-generated works receive no intellectual property protection and automatically enter the public domain. According to this model, machine-generated outputs should remain freely accessible because they lack human creativity and intellectual effort, which traditionally justify intellectual property protection.

The principal advantage of the public domain model lies in its promotion of public access to knowledge, creativity, and information. By denying exclusive rights over AI-generated works, this approach prevents monopolization and concentration of creative control within large technology corporations. It also encourages collaborative innovation, free dissemination of information, and unrestricted public use of AI-generated content.

The public domain model further avoids complex doctrinal questions relating to authorship, inventorship, and ownership because no entity receives exclusive rights over the generated output. This approach is particularly attractive from the perspective of public interest and constitutional values such as freedom of expression and access to knowledge.

However, the public domain approach also presents significant economic drawbacks. The development and training of advanced AI systems require substantial investment in computational infrastructure, research, data acquisition, and technical expertise. Denying intellectual property protection to AI-generated works may discourage private investment and innovation because developers and corporations may lack incentives to commercially exploit the outputs generated by their AI systems.

Another concern is that unrestricted public access to AI-generated works may reduce accountability and create enforcement difficulties relating to misuse, plagiarism, and unauthorized commercialization. Therefore, while the public domain model strongly protects public interest and accessibility, it may undermine innovation incentives and technological advancement.

5.5 Sui Generis Protection Model

Increasingly, scholars and policymakers support the creation of a sui generis framework specifically designed for AI-generated works. The sui generis model proposes a specialized legal regime distinct from traditional copyright and patent law in order to accommodate the unique characteristics of AI-generated creativity.

Unlike existing human-centric frameworks, the sui generis model recognizes that AI-generated works occupy a distinct category requiring separate legal treatment. Under this approach, AI-generated outputs may receive limited and carefully tailored protection without extending full copyright or patent rights.

A sui generis framework may include:

- limited duration of protection;
- restricted scope of exclusive rights;
- tailored ownership rules;
- transparency obligations;
- safeguards against monopolization; and
- public interest limitations.

The principal advantage of this model lies in its flexibility. It preserves the conceptual integrity of traditional intellectual property law while simultaneously accommodating technological realities. A sui generis regime can encourage innovation and investment in AI technologies while imposing limitations necessary to protect competition, public access, and constitutional rights.

This approach also allows lawmakers to distinguish between AI-assisted works and fully autonomous AI-generated outputs. Such distinctions are important because many creative works involve varying degrees of human and machine collaboration.

However, implementing a sui generis framework also presents challenges. Legislatures must determine:

- what qualifies as an AI-generated work;
- the threshold of human involvement required;

- ownership and commercialization rules;
- the duration and scope of protection.

Additionally, differing national approaches may create international inconsistencies and enforcement difficulties. Despite these concerns, the sui generis model is increasingly regarded as the most balanced and pragmatic solution for regulating AI-generated intellectual property.

6. FINDINGS, RECOMMENDATIONS AND CONCLUSION

6.1 Major Findings

The present study demonstrates that the rapid advancement of artificial intelligence has fundamentally challenged the traditional foundations of intellectual property law. Existing copyright and patent frameworks in both India and the United States were developed on the assumption that creativity, innovation, and inventorship are exclusively human activities. However, modern generative AI systems are increasingly capable of autonomously producing literary works, artistic creations, musical compositions, software code, and technological inventions with minimal human intervention. Consequently, traditional intellectual property doctrines concerning authorship, originality, inventorship, and ownership have become increasingly inadequate in addressing the realities of AI-generated creativity.

One of the major findings of this research is that both India and the United States continue to follow fundamentally human-centric intellectual property frameworks. Judicial developments such as *Burrow-Giles Lithographic Co. v. Sarony*, *Naruto v. Slater*, and *Thaler v. Vidal* reaffirm the principle that only human beings can qualify as authors or inventors under copyright and patent law. Similarly, Indian intellectual property law, despite the relatively flexible wording of Section 2(d)(vi) of the Copyright Act, 1957, continues to rely upon assumptions of human creativity and intellectual effort. As a result, fully autonomous AI-generated works remain outside the clear scope of legal protection.

The study further reveals that the increasing autonomy of AI systems creates significant uncertainty regarding ownership and liability. AI-generated works may involve multiple stakeholders, including programmers, developers, users, corporations, and owners of AI platforms. Existing legal frameworks fail to clearly determine who should hold rights over machine-generated

outputs. This uncertainty creates practical difficulties relating to commercialization, enforcement, licensing, and accountability.

Another important finding concerns the constitutional implications of AI-driven intellectual property protection. In India, intellectual property rights must remain compatible with constitutional guarantees under Articles 14, 19(1)(a), and 21 of the Constitution of India. Excessive protection of AI-generated works may lead to monopolization, concentration of economic power, restrictions upon access to knowledge, and limitations upon freedom of expression. Similarly, in the United States, regulation of AI-generated intellectual property must remain consistent with First Amendment protections and broader public interest considerations.

The study also identifies significant concerns regarding the use of copyrighted materials and personal data in training AI systems. Generative AI models rely heavily upon extensive datasets containing books, images, music, software, and personal information. Existing intellectual property frameworks do not adequately regulate text and data mining, machine learning practices, or the use of copyrighted content for AI training purposes. Consequently, disputes relating to copyright infringement, fair use, data protection, and informational privacy are likely to increase in the future.

The comparative analysis further reveals that although India and the United States differ in constitutional philosophy, both jurisdictions face similar doctrinal and regulatory challenges in addressing AI-generated creativity. While the Indian framework adopts a rights-oriented constitutional approach and the American framework follows a utilitarian innovation-oriented model, both systems continue to struggle with balancing technological innovation, public interest, constitutional safeguards, and economic incentives²³.

6.2 Recommendations

In light of the findings of this study, significant legal and policy reforms are necessary to effectively regulate AI-generated intellectual property in a balanced and constitutionally compliant manner.

First, there is a strong need for the creation of a *sui generis* legal framework specifically designed for AI-generated works and inventions. Existing copyright and patent laws were drafted in an era

²³ Jeremy Bentham, *A Manual of Political Economy* (1843).

where creativity and inventorship were understood exclusively as human activities. Attempting to fit AI-generated outputs within traditional doctrines creates conceptual inconsistencies and legal uncertainty. A specialized framework can provide tailored protection while preserving the integrity of existing intellectual property systems.

Second, legislatures should introduce clear statutory definitions distinguishing:

- AI-assisted works,
- AI-generated works, and
- autonomous AI inventions.

Such distinctions are essential for determining ownership, authorship, inventorship, and liability. Clear definitions would also reduce judicial uncertainty and provide greater legal clarity for developers, creators, businesses, and consumers.

Third, legal frameworks must incorporate transparency and accountability obligations for AI systems. Developers and corporations utilizing AI technologies should disclose:

- the extent of human involvement,
- the nature of training datasets, and
- the operational role of AI systems in generating outputs.

This would help address concerns relating to infringement, ownership, and accountability.

Fourth, stronger safeguards relating to data protection and informational privacy are necessary. AI systems frequently rely upon massive datasets containing personal information and copyrighted content. Therefore, AI regulation must remain compatible with constitutional protections relating to privacy and consent. Legislatures should establish comprehensive rules governing the collection, use, and processing of personal and copyrighted data for AI training purposes.

Fifth, competition law oversight is essential to prevent monopolization and concentration of economic power within dominant technology corporations. Excessive intellectual property protection for AI-generated works may enable large corporations possessing advanced AI infrastructure and datasets to accumulate disproportionate market control. Therefore, intellectual property regulation must be balanced with competition policy and public interest considerations.

Sixth, fair use and fair dealing exceptions should be expanded and clarified in relation to AI training, research, education, and transformative technological use. Restrictive intellectual property regimes may hinder innovation, scientific research, and public access to knowledge. Consequently, balanced limitations and exceptions are necessary to preserve constitutional freedoms and encourage technological progress.

Finally, international harmonization of AI-related intellectual property regulation is increasingly necessary because artificial intelligence technologies operate across national borders. International organizations such as the World Intellectual Property Organization (WIPO) should play an active role in developing globally consistent standards and guiding principles for regulating AI-generated intellectual property.

6.3 Conclusion

Artificial intelligence represents one of the most transformative technological developments of the twenty-first century and has fundamentally altered the nature of creativity, innovation, and intellectual production. Existing intellectual property frameworks in both India and the United States remain deeply rooted in human-centric assumptions regarding authorship, originality, and inventorship. However, the emergence of autonomous AI systems capable of independently generating literary works, artistic creations, and technological inventions has exposed significant doctrinal and constitutional limitations within traditional intellectual property law.

The study demonstrates that current legal systems are increasingly inadequate to regulate AI-generated creativity because they continue to associate intellectual property protection exclusively with human intellectual effort and agency. At the same time, unrestricted extension of intellectual property rights to AI-generated works may create serious concerns relating to monopolization, economic inequality, restrictions upon access to knowledge, and infringement of constitutional freedoms.

The challenge therefore lies in developing a balanced legal framework capable of encouraging innovation while simultaneously protecting constitutional values, public interest, competition, and access to information²⁴. Among the various regulatory approaches examined in this study, the sui generis protection model emerges as the most balanced and pragmatic solution because it

²⁴ Neil Netanel, *Copyright's Paradox* (Oxford University Press 2008).

recognizes the unique nature of AI-generated works without fundamentally distorting traditional copyright and patent doctrines.

Ultimately, the future of intellectual property law lies not in rigid adherence to outdated human-centric assumptions but in developing adaptive, technologically responsive, and constitutionally balanced legal frameworks capable of addressing the realities of artificial intelligence. As AI technologies continue to evolve, legal systems across the world must ensure that intellectual property regulation promotes innovation and economic progress while preserving fairness, accountability, creativity, and fundamental rights in the digital age.