Journal of Contemporary Law and Society, *Volume 1, Issue 2, June 2024, pp. 71-77*

Technical Article
Online ISSN: 3139-1079
DOI: 10.18311/JCLS/2024/v1i2/48754

Online ISSN : XXXX-XXXX

Journal of Contemporary Law and Society

Contents available at: *www.informaticsjournals.co.in/index.php/jcls*

JCLS

The Interplay of AI and IPR: Innovation Challenges and Way Forward

Debabrata Roy

Faculty of Law, The ICFAI University Tripura Agartala-Simna Road, Kamalghat - 799210, West Tripura, India; roydebabrata350@gmail.com

Abstract

Artificial intelligence (AI) is rapidly advancing in our modern and technologically sophisticated culture. In a few years, these systems will start producing remarkable works without any human intervention, thanks to the integration of new technology. The advancement of AI technology is having a significant impact on the economy. Consequently, it is imperative for intellectual property regulations to anticipate and address the potential future developments that AI may introduce. If these technologies continue to advance at their current rate, it is likely that in the near future, AI and similar systems will be capable of inventing, creating art, and performing duties that are currently carried out by humans (as certain AI systems are already doing on a large scale). This prompts significant deliberations concerning "Intellectual Property Rights (IPR)" as it questions not only traditional interpretations of concepts like patents and copyrights, but also raises concerns regarding the authority over such inventions, among other matters. In a dynamic economy like India the role of AI is increasing day by day and with this AI has an increased role in different sectors. Unique and complex artworks are produced by computer programs like Google's Deep Dream, making it difficult to tell them apart from human creations. The issue is that seemingly straightforward inquiries like "Who is the creator of a machine-produced painting using AI?" are left unanswered by our legal system. Artificial intelligence issues are addressed by the law; but our legal system was not intended to address worries about rapidly advancing AI. This research paper aims to provide a comprehensive analysis of the application of Intellectual Property Rights (IPR) laws to Artificial Intelligence (AI) and the related issues.

Keywords: *Artificial Intelligence, Copyright, Intellectual Property Rights, Key Issues, Law, Patent, Way Forward*

1.0 Introduction

Modern Artificial Intelligence (AI) technologies are rapidly expanding as they combine increasingly advanced software. Contemporary AI systems have the potential to produce complex creative works, including poetry and artwork, alongside their capacity for fundamental computations. This raises the question of whether a separate status can be conferred under the regulations governing intellectual property rights, in addition to any other type of work created by a recognizable human that is protected by IP laws. This query reveals multiple complex concerns that the authors intend to emphasize in this study. The study begins by introducing the notion of Artificial Intelligence (AI). In addition, the study examines the matter of intellectual property rights, specifically focusing on the protection of copyright, patents, and trademarks in the context of artificial intelligence. The present paper conducts a thorough examination of copyright issues related to AI solutions, emphasizing the relationship between the patent system and AI framework.

Through the collaboration of human intelligence and computer technology, decision-making abilities have been successfully attained. Artificial intelligence, in its current form, refers to the capacity of a computer system to autonomously analyze a given environment and respond accordingly.

The term Artificial intelligence was first presented by computer scientist Mr. John McCarthy during a conference held in 1956. He claimed that the notion entailed a computer analyzing data and reacting to it like how an intelligent person would respond to the same information.

Due to our reliance on and fascination with computers, AI projects have been developed to facilitate the execution of tasks that demand human-like creativity. Plenty of doubt as to whether the results generated by a machine are a result of the machine's intelligence or the algorithm it adheres to. Sir Alan Turing introduced the concept of the "Turing test" as a method to address the issue. After engaging in a text-based interaction with either a computer or a human, participants were asked to indicate whether they believed they were conversing with a human or an artificial intelligence. Turing proposed that a machine may be deemed intelligent if its responses were indiscernible from those of genuine humans. This examination was efficacious for a limited duration, exclusively compatible with speech apparatuses, and mostly suitable for certain interrogative purposes. WIPO has categorized AI into three types: expert systems, cognitive systems, and natural language systems. Specialist systems are computer programs designed to address intricate challenges within certain domains of knowledge, such as analyzing geological conditions, recommending remedies, and detecting medical ailments. These technologies are also utilized for artistic pursuits such as the production of artwork and other comparable things. However, there have been instances where the Registrar refused to grant copyright protection for a computer-generated work, highlighting the ambiguous legal standing of computer-assisted works. This has attracted legal attention to the system. Many states have not yet found a solution to this problem. Perception systems facilitate a computer's ability to visually perceive and audibly perceive its surrounding environment. This is utilized by topologists, word context specialists, and other professionals. Lastly, a natural language program requires a dictionary database to understand the meanings of words. The system's notable feature is its ability to perform semantic analysis, considering a range of grammatical and textual contexts. Given the extensive implementation of these AI systems, numerous individuals endeavored to safeguard the results. Nevertheless, these candidates had exceedingly low expectations following the 1956 ruling that refused to provide copyright protection to a piece of literature.

However, because of its significance in the realm of intellectual property rights encompassing copyrights and patents, the conversation persisted and eventually escalated to the level of national courts.

2.0 AI and Different Kinds of IPR

AI and different kinds of intellectual property rights protection under different legal systems can broadly be discussed as under:

2.1 AI and Copyright

Copyright is a fundamental component of intellectual property rights. Copyright is a legal right given to the originator of an innovative creation, providing them with exclusive rights for its use and dissemination. The rationale for this decision was rooted in the author's reputation as a trailblazer, as well as the application of Locke's economic theory of possessive individualism (*Diane Leenheer Zimmerman, 2005*). To obtain a copyright grant, it is necessary to satisfy two fundamental requirements. Firstly, the work must exist in a physical or concrete form. Secondly, it must be unique or not copied from another source.

Copyright protection is typically applied to works of literature and art. Given that AI is now being used to create literary works, it is important to consider the implications of copyright concerning AI. This can be understood from the following cases:

i. The focal point of this case was around the question of whether an image can meet the criteria for copyright protection. The case was significant as it dealt with the contrast between artistic and technical work. The Court deliberated on the potential for bestowing copyright protection upon a product that is generated by a machine. The Court's reasoning, which posits that exclusively mechanical labor lacks innate creativity, restricted the scope of their safeguarding. Therefore, applying a meticulous methodology such as this to AI systems might present difficulties in assigning copyright for the works they generate (*Burrow-Giles Lithographic Company v. Sarony, 1884*).
ii. The current matter is a continuation of the main issue addressed in the previous case. The Court

established a definitive differentiation between the labour performed by a human being and everything that is created by artificial means. Justice Holmes, in his majority opinion, delineated the inherent uniqueness of human personality and established it as an indispensable prerequisite for the safeguarding of copyright. The Court clearly conveyed its stance by using the words 'something unbreakable, which is one man's alone'; emphasizing that there was no possibility for an entity that did not originate from human creativity *(Bleistein v. Donaldson Lithographing Co., 1903)*.

iii. The Courts in this judgment demonstrated a more lenient stance towards copyrights. The Court relaxed the standards for uniqueness and established that in order for a work to be deemed creative, it must not be taken from any other artistic work of similar kind. It was even argued that authors could claim inadvertent or accidental alterations as their own. As a result, this decision granted protection to persons who were seeking copyright protection for work generated by AI, even though it was created using precise programming and algorithms. These three judgments partially explain the ambiguity around the authorization of fortification for AI systems. However, the ongoing lack of a clear solution still affects potential individuals or organizations that have rights to anything *(Alfred Bell & Co. Ltd. v. Catalda Fine Arts, Inc. et al, 1951)*.

3.0 Analysis of International Standards Concerning Acceptability of AI in IPR

The ambiguity regarding the relevance and legal standing of AI is not a recent occurrence, as demonstrated by a 1974 report from CONTU (The National Commission on New Technological Uses of Copyright Works). The analysis indicated that it is theoretically promising but fundamentally impractical to build AI with the capacity to autonomously generate original works. During its assessment of the effects of rapid advancements in interactive computing on intellectual property, the Office of Technology Assessment (OTA) revisited the issue in 1986 *(92nd United States Congress, 1971)*. In contrast to CONTU, the OTA recommended that Artificial Intelligences (AIs) should be recognized as legitimate co-authors of copyrighted works *(UNT Digital Library, 2005)*. Three decades later, the discussion around AI is of utmost importance. There is a dispute on whether computers can match the creative capabilities of humans. Similarly, there are a few individuals who question the notion that computers may be justified as a means of expressing creativity. Artificial intelligence lacks the same level of creativity as humans, and, conversely, it rejects the idea that creativity is a credible explanation *(David Gelernter, 2010)*.

While some nations are granting copyrights to works created by AI, the issue of who has the copyright is complex and difficult to comprehend due to the existing legal requirement for a right holder to have legal personality. However, there is a specific ambiguity in this circumstance on the issue of copyright ownership when AI coordination is acquired, as it is unclear if it goes to the developer of the AI or the purchaser. Countries such as England and New Zealand provide copyright protection to program creators for works generated by artificial intelligence, through a legal mechanism that favors the creator. Legal support is provided by extending the concept of copyright to include computer-generated works, like AI creations, that do not have a human inventor. Nevertheless, the question mentioned earlier remains unanswered *(James Boyle, 2011)*. The current approach also presents a challenge in determining the legal responsibility of Artificial Intelligence (AI) entities for illegal acts. At the time of establishing AI, none anticipated the remarkable accomplishments it would reach. Furthermore, no one foresaw that these AIs would eventually develop into independent entities. Subsequently, a relevant inquiry will arise regarding the potential criminal responsibility of an artificial intelligence. If the current situation persists, the creator bears responsibility, regardless of whether they possess mens rea or actus reus. Consequently, there exist specific gaps in the existing status of artificial intelligences within intellectual property law *(P Hallevy, 2015)*.

4.0 AI and IPR Protection under Indian Legal System

India is steadily advancing in the AI business, as major companies like Apple and Salesforce are purchasing Indian AI-powered companies. Moreover, India has seen a notable increase in AI entrepreneurial activity,

accompanied by a significant influx of funding dedicated to research and development in this field. An AI company called Sentient received an investment of 143 million USD during its early years, which is a noteworthy achievement. Therefore, it is indisputable that the country's notable spike in AI use inevitably contributes to the development of AI technologies that affect IPR. Consequently, it is necessary to comprehend the IPR legal structure of India to ascertain the validity or invalidity of AI-driven inventions in terms of IPR inside the Indian legal framework. This can be discussed as under:

4.1 AI and Copyright Protection

Copyright is a legal protection that defends the original ideas of the human mind and intellect. Indian copyright law protects creative works that are the result of an author's expression rather than just a simple thought.

Section 14 provides a definition of Copyright, stating that it refers to the author's exclusive rights to perform or authorize any actions related to their work, including reproduction, publication, adaptation, and translation. Section 17 of the Act states that the author is the initial copyright holder. However, if the work is completed by an employee for payment, the employer becomes the owner of the work *(The Copyright Act, 1957)*.

Section 2(d) of the Copyright Act 1957 gives a detailed definition of the term "Author". In the case of Rupendra Kashyap *(Kashyap, Plaintiff v Jiwan Publishing House Private Limited and Others, 1993)*, it was decided that the author of an examination paper is the person who assembles the questions. This person must be an actual human being, not a fictional entity. The Central Board of Secondary Education, being a fictional organization, can only claim copyright in the examination papers if it can show that it has particularly engaged individuals to prepare the question papers and has a contract stating that the copyright will belong to the Central Board of Secondary Education *(Navigators Logistics Ltd. v Kashif Qureshi and Others, 2018)*.

Furthermore, judges have repeatedly ruled that no legal body may be assigned paternity of any work that is protected by copyright. The Practice and Procedure Manual (2018) of the Copyright Office specifically specifies that only the personal information of an actual person should be included as the author of the work in the copyright application *(Tech Plus Media Private Ltd. v Jyoti Janda, 2014)*.

4.2 AI and Patent Protection

The Indian patent law does not address the question of the unknown legal repercussions of artificial intelligence at this time. For a long time, there was debate in India on the effect of the Indian Patents Act of 1970 on the development of innovations in the electronics and computer industries. This debate centered on Section 3 of the Act, most specifically Section 3(k). Regardless of India's stance, it is crucial to approach this disruptive phase systematically and evaluate whether India's patent laws align with the government's objectives for the specified industry sectors. Encountering obstacles, as shown in the development of Computer-Related Inventions (CRIs), and responding reactively instead of proactively would be counterproductive. The Indian patent law does not address the question of the unknown legal repercussions of artificial intelligence at this time. For a long time, there was debate in India on the effect of the Indian Patents Act of 1970's present requirements on the development of novel technologies in the electronics and computer industries. This debate centered on Section 3 of the Act, most specifically Section 3(k). In response to each argument, the patent office has made significant and impactful revisions to its guidelines. The recent reforms have introduced several changes to the patent standards, including the requirement for CRIs to demonstrate a technical effect and the inclusion of unique hardware. Currently, patentees are uncertain about the upcoming updates to the criteria, which now demand technical effects in conjunction with hardware. The authorities appear to be responding to external pressures and opinions, rather than formulating a policy and developing rules for its implementation. Artificial intelligence should not be subjected to a similar outcome.

Therefore, three primary concerns arise when considering patents:

- The eligibility of AI as a patentable innovation;
- determining the real and initial inventor (inventor-ship); and
- establishing ownership and liability for the actions of AI technology.

4.3 Eligibility

The question of whether granting patent rights to Computer-Related Inventions (CRIs) can incentivize investment in software-related research and consequently foster innovation is a subject of ongoing and continuous discussion. The critics vehemently contend that the act

of awarding patents for software hampers the progress of innovation. Consequently, what would be the implications for AI? Proposing that patents should not be granted to AI-based ideas, which would essentially be categorized as Computer-Related Inventions (CRIs), is an overly simplified viewpoint, although these inventions have significantly greater potential than conventional software. It makes more sense to take a more measured approach, and the Indian Patent Office needs to get on with this as soon as possible. Building a strong foundation for patenting AI inventions requires having candid discussions. By using thorough examination criteria that are revised regularly, this arrangement should ensure that the Patent Office's methodology is foreseeable. The EPO has already conducted its inaugural conference on AI and patenting. If India aspires to be at the forefront of AI, it must modify its patent system to guarantee that the nation continues to be a favorable environment for inventors. The government must implement a systematic approach to address the impact of AI on patents, with a focus on benefiting the technological community. This is particularly important if India aims to be a producer of AI rather than just a user.

4.4 Inventor

There is no uncertainty regarding the identification of the inventor for AI-based inventions that require human involvement. However, as the shift occurs from weak AI to strong AI (and potentially towards super intelligence), a pertinent question emerges: can AI technology be regarded as an 'inventor' when it is the technology itself (rather than a human) that generates more patentable inventions?

Currently, the answer remains ambiguous. Only the very first and elementary inventor of an invention, or someone who has been granted the rights, may apply for a patent for that invention, as per Section 6 of the Patents Act. In addition, as defined in Section 2(1) (p), a 'patentee' refers to the individual or entity listed in the patent office record as the recipient or proprietor of the patent. Intuitively, this implies that an inventor and a person must refer to a human being. Section 2(1) (s) explicitly defines 'person' to encompass both the government and non-natural entities. Moreover, Section 2(1) does not refer to a human being when defining the term "true and first inventor," which excludes certain people (y). Thus, one could argue that to grant patent rights, the Patents Act does not expressly require a certain degree of human control or involvement during the invention process. As mentioned in Sections 2(1) (j) (ja), instead, it assesses inventiveness according to the notion of creation, a "new product or process" or a "technical advance contrasted with current knowledge".

It appears that human participation is preferred for an invention to be eligible for patent protection, even though this is not stated clearly in the criteria for eligibility. Whether an inventor needs to be a human being is the first task at hand. It is important to note that Sophia, a social humanoid robot, has been granted citizenship by Saudi Arabia. Therefore, the question arises as to whether Sophia may be classified as a natural person.

4.5 Onus or Liability

The problem of liability will arise in cases involving strong AI and super intelligence, particularly when the inventor is not a human being (assuming that the accepted definition of 'inventor' allows for this). Only the patent holder has the power to forbid illegal third parties from carrying out specific activities without their permission under Section 48 of the Patents Act. The most important question we need to ask is: Can AI give permission? If yes, what procedures need to be followed to obtain consent? The similar problem arises with ownership through assignment or acquisition. Can an AI grant approval for the transfer of ownership if the innovation is transferred to a commercial organization capable of enforcing the patent?

Subsequently, upon proving that the patent was infringed, the infringer will be required to provide monetary compensation to the patent owner that is sufficient to cover the damages caused by the infringement (typically in the form of lost profits or reasonable royalties). Additionally, in specific situations, the infringer may be legally prevented from continuing the infringing activity. How will the courts ensure compliance with this on a violating artificial intelligence? Who bears the legal liability for an AI's unlawful actions: the AI itself, its owner, or its user or operator? If the origin of the illicit action cannot be attributed to a particular human agent, who has legal responsibility? These and similar challenges are at present being addressed in discussions about the unknowns surrounding artificial intelligence. These conversations cover a wide range of topics, including civil tort liability and criminal liability, in addition to intellectual property.

Gabriel Hallevy, a legal scholar, has studied three perspectives of criminal responsibility that shed light on the present challenges.

The eventual ramifications of this situation are uncertain; using an image from a beloved childhood party game, the core idea is that we possess the tail, but lack the donkey to attach it to *(Copyright Office Issued Practice And Procedure Manual, 2018).*

5.0 Conclusion and Suggestions

The present status of Artificial Intelligences (AIs) inside Intellectual Property (IP) is fraught with issues. While acknowledging the output shaped by AI as a significant advancement towards the future, the actual execution of recognizing and protecting such work poses a substantial challenge. The authors propose the following measures to improve the same. Although Artificial Intelligences (AIs) exist globally, their recognition is limited to a few specific countries such as the United States, England, and New Zealand. One potential advancement in acknowledging the existence of artificial intelligences could involve all nations participating in multilateral trading forums collectively acknowledging their existence. A successful change to the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) might achieve this.

Modern artificial intelligences are capable of carrying out human-like tasks in a variety of domains. If machines could perform better than humans in the future and make decisions on their own, that would not be amusing. The Artificial Intelligence Data Protection Act is a specific law that must be created to keep an eye on this issue. The Act might contain clauses that deal with offenses committed against people by artificial intelligence on the criminal and civil fronts. The Act may create a regulatory framework to monitor, adjudicate, and look into the activities of Artificial Intelligences (AIs) and any possible violations they may have committed.

Currently, the actions performed by an AI are subject to copyright protection by its developer. Similarly, if any criminal responsibility is to be assigned, it would also be ascribed to the creator, even if they are unaware of the AI's actions.

It is imperative to address this gap by implementing a targeted measure to hold AI accountable, such as the option to destroy the AI or prevent the usage of the technology used to create it. Implementing this measure would constitute a significant advancement in safeguarding innocent creators who lack agency over the acts of the AI.

Lawmakers must take into account the question of whether to classify AI-enabled systems under this category, even though there is a clear distinction between the creator and the creation. Protection becomes a critical concern as these technologies are used more and more and the solutions they produce become more commonplace. It requires quick thinking to establish suitable rules to balance the risks of giving these highly intelligent systems complete autonomy to encourage human scientists to develop more of these systems *(Remfry & Son Limited, 2023).*

5.1 Suggestions

To address the problem of providing AI with intellectual property protection, the following suggestions or actions could be taken into consideration:

i. It is important to acknowledge that AI technology is now not completely autonomous.
ii. It is worth mentioning that differentiating between works created by machines and those created by humans will provide a challenge. Examining potential solutions for this problem and considering the idea of cooperative authorship could be helpful.
iii. A longer discussion on the meaning of originality in the context of AI-generated art is required. This discussion should address whether we should consider AI generated works as unique or classify them as unoriginal copyrighted works, similar to films, sound recordings, broadcasts, and typographical arrangements.
iv. The question to be pondered is whether extending legal status to AI should be equivalent to granting the same rights as a human author.
v. Additionally, careful consideration should be given to the theoretical basis upon which copyright protection should be conferred.
vi. The incorporation of data in AI processing necessitates consideration of copyright and moral rights.
vii. The language used to discuss the topic should be impartial with regard to the romantic or author-centric grounds for copyright, as well as the economic techniques adopted in certain jurisdictions.
viii. Inquiries should be conducted regarding the ability of private agreements to be established above or below

any policy determination regarding the ownership of copyright in works generated by artificial intelligence.

6.0 References

Abdelkader, H. E., Gad, A. G., Abohany, A. A., & Sorour, S. E. (2022). An efficient data mining technique for assessing satisfaction level with online learning for higher education students during the COVID-19. *IEEE Access*, *10*, 6286–6303. https://doi.org/10.1109/access.2022.3143035.

Alfred Bell & Co. Ltd. v. Catalda Fine Arts, Inc. et al, 191 F.2d 99 (2d Cir. 1951).

Bleistein v. Donaldson Lithographing Co., 188 U.S. 239 (1903).

Burrow-Giles Lithographic Company v. Sarony, 111 U.S. 53 (1884).

Diane Leenheer Zimmerman (2005). It's an Original!(?): In Pursuit of Copyright's Elusive Essence, Columbia Journal of Law & the Arts. 28, 187.

Drahos, P. (2016). A philosophy of intellectual property. https://doi.org/10.4324/9781315263786

Hallevy, G. (2015). AI v. IP - Criminal Liability for Intellectual Property IP Offenses of Artificial Intelligence AI Entities. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2691923.

Copyright Office Issued Practice and Procedure Manual, 2018.

David Gelernter, 2010.

James Boyle, 2011

Navigators Logistics Ltd. v Kashif Qureshi and Others, 2018.

Remfry & Son Limited, 2023.

Tech Plus Media Private Ltd. v Jyoti Janda, 2014.

UNT Digital Library, 2005.