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A SYSTEMATIC STUDY ON AI-GENERATED MUSIC AND ITS INFRINGEMENT ON COPYRIGHT

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ABSTRACT

The music industry has been greatly impacted by the quick development of artificial intelligence (AI), which has made it possible to produce music that closely resembles the voices and styles of well-known performers. This presents significant ethical and legal issues around copyright infringement, originality, and fair use, even if it also creates fascinating opportunities for creative inquiry. Authorship and ownership conflicts arise because the current Indian Copyright Act of 1957 lacks precise definitions and measures to handle the complexity of AI-generated music and the question of liability still looks unclear. Further the mimicry of AI of the original artists puts them through a huge emotional turmoil as well as revenue concerns. This essay examines these issues, emphasizes Indian and international viewpoints, and makes suggestions for legal changes that strike a balance between artistic freedom and innovation.

Keywords: Artificial Intelligence, Copyright, Fair Use and Musical Work

INTRODUCTION

The rapid development of artificial intelligence (AI) has transformed every form of media, with music being no exception. AI-generated music mimicking the voices of famous and popular singers is generated using a machine learning algorithm to compose, produce or remix music. These are mostly used for entertainment purposes that we often come across in reels of Instagram or shorts or full-length cover videos on YouTube. The AI-generated pieces are often indistinguishable from those of the original pieces composed. Though it's an exciting possibility for the music industry to thrive, it also poses significant copyright infringement complexities. The core principle of copyright revolves around the concept of 'originality'. Section 13(1) of the Indian Copyright Act 1957[863] states that:

Subject to the provisions of this section and the other provisions of this Act, copyright shall subsist throughout India in the following classes of works, that is,—(a) original literary, dramatic, musical and artistic works; (b) cinematographic films; and (c) sound recording.

However, the term 'original' is not defined anywhere under the Copyright Law, and that is put to question when original songs of famous singers are either mimicked or remixed with the voice of some other singer. For instance, oftentimes on social media platforms, we can see popular songs sung by famous singers being replaced by a cover version of the same song sung by some other singer. The major problem here is that most times such a voice replacement is generated by AI and without consent of the involved singers in the content. Moreover, this further raises the question about authorship and originality for compositions produced by nonhuman entities.

Traditional copyright laws have been designed to protect the rights of human creators to

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863 The Copyright Act, 1957, § 13(1), No. 14, Acts of Parliament, 1957 (India).

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protect and safeguard their interest over the works produced by them and offer control over the reproduction, distribution and adaptation of their works. The pressing issue here is when AI-generated music mimics existing works. It is more complex to decide whether such outputs are created as a mere coincidence for entertainment purposes or amount to copyright infringement. This requires more clarity on drawing the line between freedom of expression and copyright violation. For instance, a producer who goes by the name 'SIXFOOT5' has uploaded his vocals to an online server where anyone around the world can upload their vocals or simply the artist's vocals without any music. In a few minutes, the song of Sixfoot5 was generated by the online server, but instead of his voice, it's sung by Adele[864]. Further, the producer explains that all these can be done even without the knowledge and consent of such popular musicians, and anyone hearing it will think it's that famous singer or artist. Apart from this, the complexities arise in giving copyright protection to such AI-generated works that mimic original artists, which is illegal per se, and the lack of adequate regulations of technologies that help in such music creation.

LITERATURE REVIEW

A study conducted by Ahmad N and Saurabh C (2015) in their paper Originality requirement and copyright regime of music: a comparative overview of Indian perspective[865]. The paper discovers that unlike the US, which places its importance on the modicum of creativity doctrine to determine the originality to provide copyright protection, India places its stand on the "sweat of the brow" doctrine, which prioritizes work above innovation. This results in unclear copyright protection. The authors of the paper suggest a more clear definition for the term "originality" and stricter enforcement of copyright laws. However, the paper doesn't address copyright protection for the concepts of challenges from digital platforms that do remixing or AI-generated music in social media, music sampling, etc. Overall, the study suggests the need for legal reforms in India and to adhere to global practices in terms of modern music creations.

Another thesis conducted by Jabour G (2024) titled Drake or Fake? Perceptions, Concerns, and Business Implications of AI-Generated Vocals examines the impact of AI-generated vocals in the music industry[866]. The research was sparked by the release of the song "Heart on My Sleeve," which mimicked Drake and The Weeknd. The research was conducted as a quantitative study employing 270 subjects for survey purposes. The findings of the survey show that participants found no major difference in quality ratings of original and AI-generated music. Moreover, it is found difficult for participants to identify which one is AI-generated. The findings also show that this generates new revenue for smaller artists, however, in all the wrong ways and complications when it comes to copyright protection, brand dilution and legal implications. The thesis suggests a framework of laws that improve artists protection and encourage ethical partnerships between artists and AI companies that aid in such musical generation.

Another study conducted by Pujari V and Wilson B (2023) in their paper titled Copyright and Authorship in AI-Generated Music[867] explores legal challenges posed by AI-generated music (5), such as "Heart on My Sleeve," by Tiktok user Ghostwriter977 which mimicked Drake and The Weeknd. The paper explores legal uncertainties and evaluates current copyright laws. The

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[864] Deliso, M. (2023, October 4). AI songs that mimic popular artists are raising alarms in the music industry. ABC News. https://abcnews.go.com/US/ai-songs-mimic-popular-artists-raising-alarms-music/story?id=104569841

[865] Ahmad, N., & Chaturvedi, S. (2013). Originality requirement and copyright regime of music: a comparative overview of Indian perspective. *Information & Communications Technology Law, 22*(2), 132–145. https://doi.org/10.1080/13600834.2013.814238

[866] Jabour, G. (2024). *Drake or Fake? Perceptions, concerns, and business implications of AI-generated vocals* [Master's thesis, University of Texas]. Texas Digital Library. https://repositories.lib.utexas.edu/items/eb68be79-452c-4b21-a5ab-a88778ad0f75

[867] Pujari, V., & Wilson, B. (2023, December). Copyright and Authorship in AI-Generated Music. *Journal of Emerging Technologies and Innovative Research, 10*(12), f350-f354. https://www.jetir.org/view?paper=JETIR2312540

findings of the paper determine that there is an ambiguity in terms of ownership when AI is employed to mimic the voices or styles of existing artists. Further, technologies like deep learning and biometrics can help in the identification of such AI generated contents. The paper addresses that existing laws do not recognise AI as an author, and mimicking the vocals of original artists raises legal and ethical implications. The paper calls for proper regulatory frameworks for using AI in the music industry and urges the creators of such content to ensure transparency and give due credit.

Another piece of quantitative research by Munir M, Selina V., and Joseph A. (2020), titled Survey on Copyright Laws about Music Generated by Artificial Intelligence[868], provides an analysis of the current legal landscape regarding computer-generated music and copyrights, focusing particularly on the USA and the international landscape. The paper also identifies discrepancies between public expectations and the law. The survey's findings reveal a range of opinions: some people, particularly artists worried about their job security, deny that AI can possess copyrights. Only works created by humans are protected under current U.S. and European legislation; stuff created solely by artificial intelligence is not. In order to define the rights distribution between AI developers and consumers, the paper makes the case for the necessity of worldwide copyright rules. It covers topics such as equitable profit distribution, legal acknowledgement, and possible effects on the creative industries.

Another paper by Muskan K and Deepika P, The Intersection Of AI And Copyright In Music Industry[869], examines the emerging issues and effects of artificial intelligence (AI) on

intellectual property rights (IPR). It discusses how the human-centric conceptions of authorship and ownership in current copyright rules make it difficult to accommodate works produced by AI. The study draws attention to many important problems, such as the difficulty in identifying if AI is an author or creator, possible disputes over intellectual rights, and accountability for infringements. The necessity for updated laws to accommodate AI's special capabilities and strike a balance between innovation and the defense of intellectual property rights and human ingenuity is emphasized in the recommendations.

RESEARCH PROBLEM

The key problem is examining the copyright infringement in cases of original works of musicians/artists that are mimicked by AI without their knowledge or consent and being uploaded to social media platforms to potentially earn revenue.

RESEARCH OBJECTIVE

The main objective of the research paper is to address copyright infringement in cases where AI-generated music mimics original music and replaces the voice of original singers. This is a growing modern music creation concern as this violates the due credits that must be given to the original artists, and moreover, the wrongdoer earns revenue for such creation and distribution at the cost of copyright infringement. The paper aims at analyzing the ethical and legal implications behind such an act and proposes recommendations on the same.

RESEARCH QUESTION

4. What is meant by 'original' under the copyright laws?

5. Whether there must be copyright protection for AI-generated music mimicking original artists under the ambit of creativity and fair use?

[868] Munir, M., Selina, V., & Joseph, A. (2020, December). Survey on Copyright Laws about Music Generated by Artificial Intelligence. *ResearchGate*, 3003-3009. http://dx.doi.org/10.1109/SSCI47803.2020.9308449

[869] Muskan, K., & Deepika, P. (2024, April). THE INTERSECTION OF AI AND COPYRIGHT IN MUSIC INDUSTRY. *International Journal of Research and Analytical Reviews (IJRAR), 11*(2), 362-436. https://ijrar.org/papers/IJRARTH00201.pdf

6. Whether the AI technologies that aid in such creation are regulated by any law for the time being?

RESEARCH HYPOTHESIS

Copyright is violated when AI-generated content imitates musicians' or artists' original works without their permission. Unauthorized social media postings like this can financially hurt producers while unfairly benefiting others.

RESEARCH METHODOLOGY

The research employed is the doctrinal research method, which seeks to reconcile the legal provisions governing the protection of norms and other legal regulations pertaining to the implementation of legal regulations in the field. A doctrinal study is conducted through the examination of library materials, namely secondary data or legal research conducted within libraries. The research undertaken is primarily qualitative, focusing on the ethical and legal implications of AI generated music that mimics original singers and it's infringement on copyright. The study further evaluates legal texts and cases and thematic analysis to extract themes from literature about AI generated music, copyright infringement and it's ethical implications.

RESEARCH METHOD

The research method will comprise a literature review, which will include a review of academic papers, case studies, and legal analyses. This can identify gaps and strengths in India's current framework, as highlighted above. The paper will also analyze specific legal cases where AI generated music infringed copyrights of original authors.

Secondary data includes existing laws, legal case reports, literature from journals, and expert commentary on cyber law, deepfake technology, and its consequences. Further, a comparative analysis method is used to contrast the strengths and weaknesses of regulations in different countries.

CHAPTERS

1. MUSIC AND COPYRIGHT LAWS IN INDIA

1.1. What are copyright laws in India?

Copyright under intellectual property law provides protection to the original works of authors on which only they can have exclusive rights of ownership, reproduction, distribution and adaptation of their work. Section 13(1) of the Indian Copyright Act 1957 protects and grants copyrights to all original works.

Copyright works on two prerequisites:

3. Originality of work: to claim a copyright, the author's work must be original. Though original has not been defined anywhere in the Copyright Act of 1957, it can be determined through two tests[870]

   i. No copying requirement test: this means that the author's work shouldn't be copied work.

   ii. Degree of originality

   iii. Sweat of the brow doctrine: this doctrine was developed in the United Kingdom to determine whether a work requires copyright protection. Copyright protection under this doctrine is given based on the labor and time invested in the creating the work rather than creativity.

4. Fixation: A work is fixed when it is captured (by or under the authority of an author) in a medium that allows it to be observed, reproduced, or conveyed for an extended period of time. For example, when you write or record anything, it becomes fixed. It also allows for subsequent usage or access.

1.2. Penalties for copyright infringement

Under the Indian Copyright Act of 1957, penalties for infringement include criminal and civil consequences as detailed below:

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[870] Kumar, A. (2023, August 3). Overview of tests of copyright protection in India. iPleaders. https://blog.ipleaders.in/overview-of-tests-of-copyright-protection-in-india/

i. Section 63: Provides criminal penalties for infringement, including imprisonment from six months to three years and fines from ₹50,000 to ₹200,000. Repeat offenders can face more severe consequences. This is a non bailable offense as held in the case of M/s Knit Pro International v. NCT of Delhi[871]

ii. Section 63A: Addresses repeat offenses, enhancing penalties for second and subsequent convictions. This could lead to even longer imprisonment and higher fines.

iii. Section 64: Grants police authority to seize infringing copies without a warrant if they suspect copyright infringement, thus enabling immediate enforcement.

iv. Section 65: Specifies penalties for tampering with copyright management information (e.g., removing or altering information on the work to facilitate infringement), carrying fines or imprisonment.

v. Civil Remedies (Sections 55-62): These sections allow rights holders to seek injunctions, damages, and the delivery of infringing copies. Courts can also order the disposal of seized infringing goods.

In total, these provisions aim to discourage copyright violations while giving copyright owners avenues for legal recourse.

1.3. Copyright for musical works

Section 2(p) of the Indian Copyright Act 1957 defines musical work as the following:

"Musical work" means a work consisting of music and includes any graphical notation of such work but does not include any words or any action intended to be sung, spoken or performed with the music[872]. This definition gives musicians a wide spectrum of protection since it covers a variety of musical components, such as melodies, lyrics, and orchestration.

Rights conferred under this section

Section 14(a) of the Indian Copyright Act 1957[873] confers the following rights to protect and safeguard interest of musicians:

- Reproduction: The right to make copies of the work.

- Distribution: The right to sell or distribute copies of the work.

- Public Performance: The right to perform the work publicly.

- Communication to the Public: The right to broadcast or communicate the work through digital platforms.

These rights ensure that creators maintain control over how their works are used and monetized[874].

Duration of copyright protection for musical works

As per Section 22 of the Indian Copyright Act 1957[875], the copyright protection for musical works usually lasts for the author's lifetime plus 60 years after their passing. This time frame covers joint works up to 60 years following the passing of the final living author. Sound recordings are protected for an additional sixty years after they are published.

Difference between musical work and sound recording

It is important to know the difference between musical work and sound recording, as often it is confused with another, which leads to perplexities while filing for copyright protection. In the case of Indian Performing Rights Society v. Eastern India Motion Pictures Association[876]The Hon'ble Supreme Court clarified that copyright protection for a musical work does not only pertain to tune, singing, performance quality or voice; it also includes melody, harmony or any musical notes in written or graphical form.

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[871] https://indiankanoon.org/doc/180042115/
[872] The Copyright Act, 1957, § 2(p), No. 14, Acts of Parliament, 1957 (India).

[873] The Copyright Act, 1957, § 14(a), No. 14, Acts of Parliament, 1957 (India)
[874] Kumar, A. (2023, September 4). *Safeguarding the rights of musicians within the Indian music industry.* iPleaders. https://blog.ipleaders.in/safeguarding-the-rights-of-musicians-within-the-indian-music-industry/
[875] The Copyright Act, 1957, § 22, No. 14, Acts of Parliament, 1957 (India)
[876] Indian Performing Rights Society v. Eastern India Motion Pictures Association, 1977 AIR 1443 (India)

Whereas a sound recording refers to the recording of sounds that can be reproduced, irrespective of the medium or method used as defined under Section 2(xx) of the Indian Copyright Act 1957[877]. Therefore, the collection of sounds recorded on physical media, such as phonograph discs, tapes, cassettes, or digital forms, is covered by a sound recording copyright.

2. AI GENERATED MUSIC AND ITS IMPACT ON ORIGINAL ARTISTS AND CREATIVITY

In recent years, AI-generated music has gained popularity, posing serious ethical and legal concerns around copyright violations. AI can now produce music that closely resembles the style of well-known musicians because of the development of sophisticated algorithms like deep learning models (e.g., Google's Magenta, Jukedeck, and OpenAI's MuseNet). This discovery has raised questions about whether AI-generated works that mimic an artist's distinctive tone, composition, or even voice are in violation of copyright regulations. The legitimacy of such artistic exploitation is called into doubt when an original song is embellished, altered, and adapted into a new composition. A new piece of music is produced by employing methods such as audio mixing and the selective addition or removal of parts from the original song. For instance, AI was used to produce the band's final "new" song, "Now And Then," which was based on an unpublished demo recording by the late John Lennon[878]

However, as discussed earlier, copyright protection is given only to original works of the musicians. When an AI generates music, it undermines the originality as well as creativity of a human. In such a case, the major disputes that arises are:

i. Whether such an AI generated modified or altered musical piece must be given protection?

ii. Whether the copyright protection must be given to the AI or the Human behind such a creation?

iii. Whether the AI generated music mimicking the original piece amounts to copyright infringement or technological creativity?

How does AI generate music?

Models trained on enormous datasets of pre-existing music are commonly used in AI-generated music. These models examine a range of musical characteristics, including the melody, harmony, style and rhythm of each distinct musician. Advanced AI systems use these features to produce new compositions by mimicking patterns in the training data, such as the General Adversarial Network.

Human input and copyright eligibility

To answer our question, if AI generated music must be given any protection at all? Is answered below.

The amount of human participation in the production process has a significant impact on whether AI-generated music is legal. Because traditional copyright law is intended to protect works generated by humans, the development of AI technology raises complicated legal issues pertaining to copyright ownership and protection. Many legal precedents show that AI-generated music may be protected by copyright if a substantial amount of human input was used in its production. This implies that users may be able to assert copyright over the compositions that are produced when they engage with AI technologies by offering hints, choosing alternatives, or making imaginative modifications. The level of this input is crucial. Authorship may not be established by just utilizing an AI technology without a significant creative effort.

The U.S. Copyright Office has established that works generated by AI without human

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[877] The Copyright Act, 1957, § 2(xx), No. 14, Acts of Parliament, 1957 (India)
[878] Hight, J. (2024, April 25). *Generative AI and the future of music: How technology is reshaping the industry*. NPR. https://www.npr.org/2024/04/25/1246928162/generative-ai-music-law-technology

intervention may not qualify for copyright protection[879]. This stance emphasizes the necessity of human authorship, which is crucial for securing exclusive rights to reproduce and distribute original works. In essence, for an AI-generated piece to be eligible for copyright, it must reflect a "mental conception" that can be traced back to a human creator rather than being solely the product of machine algorithms.

Section 52(1) of the Indian Copyright Act 1957[880] provides exceptions to infringement of copyright—fair dealing. However, this does not include AI generated music of original artists works. For instance, in the case of Super Cassette Industries Limited v. Bathla Cassette Industries Pvt. Limited[881], the court held that the vocal performance of a singer must not be altered as it is an integral part of the song. Therefore, in India this is yet to be a settled discussion.

Global approaches

The United States of America

The U.S. Copyright Office has established that works generated entirely by AI without human authorship cannot be copyrighted. This means that if an AI system creates music autonomously, it lacks the necessary human input to qualify for copyright protection. In contrast, if a human artist significantly contributes to the creation process by providing prompts or making creative adjustments then the resulting work may be eligible for copyright protection.

The United Kingdom

Section 178 of The Copyright, Designs, and Patents Act of 1988 (CDPA) permits for "computer-generated works," which means that if an AI-generated item is made without a human author, it can theoretically be protected as a computer-generated work. However, this raises problems regarding who would own the copyright, whether it should go to the AI's developer or the user who spurred its development[882].

The issue of mimicry in AI-generated music

AI systems presently lack legal personality, complicating the issue of accountability when violations occur. If an AI makes music that infringes on existing copyrights, identifying who is responsible—whether it be the authors of the AI tool or the users who triggered its creation—is problematic. When a machine can mimic a human's distinctive voice, the technology also calls into question authenticity and the worth of human creativity. It has long been believed that an artist's voice reflects their personality and emotional depth, as well as their unique creative qualities and life experiences. The traditional idea of authenticity in art is called into question when AI is able to replicate such a crucial component of an artist's skill with convincing accuracy. The emotional connection that audiences have with music may be impacted if they are aware that a particular composition was produced by a machine. Furthermore, the perceived value of human creativity may be affected if AI-generated music and voices become to sound exactly like human-produced material. It might become more challenging for artists to stand out in a market where AI can replicate multiple tracks on various artists' vocals within seconds[883]

Certain artists' styles can be imitated by AI models. Despite its outstanding technological capabilities, this capacity has sparked concerns about possible copyright infringement, particularly in two key areas:

i. Copying the Style of Composition

Certain chord progressions, melodic phrases, and rhythmic patterns that are characteristic of

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[879] Glover, E. (2024, Sept 18). *AI and copyright law: What we know*. Built In. https://builtin.com/artificial-intelligence/ai-copyright
[880] The Copyright Act, 1957, § 52(1), No. 14, Acts of Parliament, 1957 (India)
[881] Super Cassette Industries Limited vs Bathla Cassette Industries Pvt.,107 (2003) DLT 91(India)

[882] *AI-Generated Music and Copyright*. (2023, April 27). Clifford Chance. Retrieved November 11, 2024, from https://www.cliffordchance.com/insights/resources/blogs/talking-tech/en/articles/2023/04/ai-generated-music-and-copyright.html
[883] Guide, S. (2023, July 14). *Navigating the Legal Implications of AI-Generated Music & Copyright*. Unchained Music. Retrieved November 11, 2024, from https://www.unchainedmusic.io/blog-posts/navigating-the-legal-implications-of-ai-generated-music-copyright

a given artist may be used by an AI to create music in that artist's style. For example:

a. Deepfake Music: Algorithms that have been taught to use voice samples to produce vocals that sound like a certain artist.

b. Style Transfer: AI models that are able to incorporate a well-known artist's style aspects into brand-new works.

ii. Unauthorized Training Data Utilization

An AI requires a lot of data (music recordings) for training in order to properly mimic an artist. There are moral and legal issues with using copyrighted music as training data, such as:

a. Fair Use: Some contend that training AI models with copyrighted content is covered by "fair use," a legal theory that permits restricted, unrestricted use of copyrighted works. Fair use, however, is a complicated and situation-specific examination. As discussed above, Section 52(1)(j) of the Copyright Act 1957[884] relates to specific uses and alterations of works, including music and sound recordings.

b. Data scraping: Without the permission of copyright holders, businesses have frequently taken music data from internet archives or streaming services.

In the case of Gramophone Co. v. Super Cassettes[885] The Delhi High Court held that it is important to obtain the consent of the original owner even while following Section 52(1)(j). Further, in Gramophone Co. of India Ltd v. Mars Recording Pvt. Ltd. & Anr[886], the Apex Court held a difference against the above case. In the case, the apex court ruled that satisfying the criteria under Section 52(1)(j) does not attract copyright infringement. However, these cases do not discuss AI recording or generation of music.

3. CHALLENGES TO AI-GENERATED MUSIC

3.1. Legal implications

In India, the use of artificial intelligence (AI) in music production presents difficult copyright-related legal concerns. The complexity of AI-generated works is not sufficiently addressed by the current legal framework, particularly the Copyright Act of 1957, which creates serious problems with authorship, ownership, and infringement.[887]

AI is not specifically acknowledged as a creator or author under the Indian Copyright Act. Although it recognises computer-generated works, there is uncertainty because AI-generated material is not well defined. The Act's Section 2(d)(vi)[888] declares that the person who causes a work to be made is the author; however, in the context of AI systems, this clause is ambiguous. This discrepancy makes it more difficult to register and safeguard AI-generated music.[889]

Originality is a key component of copyright protection. According to Indian law, a work must be unique in order to be protected by copyright. But since AI frequently creates music by synthesising and analysing pre existing material, it begs the question of whether such outputs qualify as creative works. Establishing precise standards for originality in the context of AI-generated work is the difficult part.

Another major concern is the possibility of copyright infringement. This problem is shown by recent court cases in which major record labels such as Warner Brothers Music, Sony Music and UMG have accused AI firms such as Suno and Udio of exploiting sound recordings protected by copyright without authorisation in order to train their models, filing cases against

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[884] The Copyright Act, 1957, § 52(1)(j), No. 14, Acts of Parliament, 1957 (India)

[885] Gramophone Co. v. Super Cassettes, 1995 IIAD(DELHI)905 (India)

[886] Gramophone Co. Of India Ltd vs Mars Recording Pvt.Ltd. & Anr, AIR 2001 SUPREME COURT 2885

[887] Nayantara S, Sheetal M, Nihal S. (2024, March 5). Intersection of Intellectual Property Rights and AI-Generated Works – Part I. Bar And Bench - Indian Legal News. https://www.barandbench.com/law-firms/view-point/intersection-intellectual-property-rights-ai-generated-works-part-i

[888] The Copyright Act, 1957, § 2(d)(vi), No. 14, Acts of Parliament, 1957 (India)

[889] United & United. (2024, January 29). How AI is Revolutionizing the Music Industry's Approach to Copyright Law. United & United - IPR Law Firm. https://www.unitedandunited.com/how-ai-is-revolutionizing-the-music-industrys-approach-to-copyright-law/

them in Massachusetts and New York, respectively. These businesses contend that their outputs build new compositions based on learnt patterns rather than reproducing certain recordings. The phenomenon of "overfitting," in which an AI model replicates elements of its training data too closely, complicates the question of whether the created content closely matches already-existing copyrighted works, which is the basis for determining infringement.[890]

A well-known Indian production business ran into copyright issues with AI-generated musical compositions in the case of "MusicAI Creations vs. MelodyMakers Productions." The business used artificial intelligence (AI) algorithms to compose original music for its films, a trend that is becoming more and more popular in the entertainment sector. But there were concerns about who owned these works. Did the production firm, the programmers, or the AI algorithms have copyright? The court's ruling in this case stated that programmers who created the AI algorithms should be the primary owners of the copyright of works produced by AI.

Further, the International Confederation of Music Publishers (ICMP), which represents a sizeable share of the worldwide music publishing business, is leading the effort behind RightsAndAI.com[891]. To help rights holders defend their rights against unauthorised use of their creations, especially via artificial intelligence (AI) technology, the effort has established an online resource called RightsAndAI.com. The site acts as a common resource for informing AI businesses about copyright laws and promoting adherence. Additionally, it sends a clear warning to AI companies who are involved in what is seen as

"unlicensed exploitation" of works and music protected by copyright.

3.2. Economic implications

Artificial intelligence (AI) in the music business has major commercial ramifications in addition to posing moral and legal dilemmas. Artists, producers, IT firms, and the larger music industry are among the parties impacted by these ramifications. Policymakers and business executives must comprehend these economic factors in order to successfully negotiate the rapidly changing terrain of AI-generated content.

Traditional music business income patterns are under threat from AI-generated music. Revenue sources have always been mostly dependent on human ingenuity, with musicians making money from live performances, record sales, and streaming platform royalties. These conventional income streams run the danger of dwindling as AI technologies become more widely used in the music production process. For example, the market may become oversaturated if AI can create high-quality music at a reduced cost, which would drive down prices and diminish the income of human musicians.

On the other hand, AI-generated music also offers chances for new sources of income and commercial strategies. Businesses that create AI tools for music production might make money off of their innovations by offering subscription services or licensing deals. AI and human musicians working together can also result in creative musical compositions that draw in more listeners and bring in more money. In addition to offering a competitive advantage in the market, this synergy may foster innovation.

Traditional musicians might be threatened by AI-generated music as it would oversaturate the market with material that might not need the same amount of time or effort. With the increasing availability of AI technologies, anyone may now produce music with a

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[890] Pramod C. (2024, July 30). Big Three Record Labels Sue over Alleged AI Music Infringement. https://www.chiplawgroup.com/big-three-record-labels-sue-over-alleged-ai-music-infringement/#:~:text=A%20group%20of%20music%20companies,music%20owned%20by%20the%20labels.

[891] Dalugdug, M., (2024, April 8). Major music companies fight back against unlicensed AI in new ICMP-led initiative. *Music Business Worldwide.* https://www.musicbusinessworldwide.com/music-publishers-rightsandai-portal-ai/

professional sound without requiring a lot of money or skill. The market may become oversaturated as a result of this democratization, making it more difficult for original artists to differentiate themselves and make a livelihood. Traditional revenue structures could be impacted by the possibility for AI-generated music to overtake the market. AI compositions may avoid the royalties and licensing costs normally paid to human writers if they are not identified as such. Artists may see a drop in revenue as a result of AI-generated artwork competing with human-made pieces without the financial obligations.

Further, certain positions in the music business may lose their jobs as a result of the use of AI in production. As AI systems develop the ability to carry out these activities independently or with little assistance from humans, jobs like composers, arrangers, and even sound engineers may be in jeopardy. In order to prepare people for potential new positions in an AI-driven world, this transition calls for a reevaluation of workforce skills and training programs.

India's competitiveness globally will be impacted by its capacity to modify its copyright regulations to allow AI-generated music. Investment in technology and creative industries is anticipated to increase in nations that set up explicit legal frameworks for defending AI-related intellectual property rights. On the contrary, India runs the danger of lagging behind other countries that effectively negotiate the nexus between copyright and technology if it does not update its legal system. Investment in innovative projects within the Indian music business may be encouraged by a strong legal framework that acknowledges and safeguards AI-generated works. By making ownership rights clear, investors could be more willing to finance AI-related ventures, creating an atmosphere that encourages innovation and advances technology.

3.3. Emotional implications

Many artists are concerned about emotional connection and authenticity when they hear AI duplicate their voices. AI that mimics an artist's voice or style might lessen the emotional resonance that comes from a human composer of music, which is frequently seen as a very personal form of expression. Unauthorized AI compositions that copy their vocals have been derided by artists such as Bad Bunny, who have emphasized that these works lack the authenticity and intent of music created by humans.[892]

3.4. Fair use and creativity

A legal principle known as "fair use" permits certain uses of copyrighted content without the owners' consent, usually for purposes such as teaching, research, criticism, commentary, news reporting, and scholarly purposes. Fair use becomes especially controversial when it comes to AI-generated music because of the way AI systems learn and produce. Whether the new work is transformative—that is, whether it gives the original work a new expression or meaning—is a crucial consideration in assessing fair use. AI-generated music frequently uses pre-existing compositions for training, which begs the question of whether the final product is sufficiently transformational to be eligible for fair use.[893]

AI-generated music may hurt the market for copyrighted songs if it closely mimics those originals, making fair use arguments more difficult to prove.

Fair use permits the limited, unrestricted use of copyrighted content for study, commentary, and criticism. But when AI models are trained using music that is protected by copyright without permission, it begs the question of whether this is fair use. The subtleties of machine learning techniques, which entail consuming vast amounts of preexisting

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[892] Chow, A. R. (2023, December 4). AI's Influence on Music Is Raising Some Difficult Questions. *TIME*. https://time.com/6340294/ai-transform-music-2023/

[893] Vaishnavi W. (2023, December 19). Artificial Intelligence Generated Music : Copyright Dilemma. IIPRD |. https://www.iiprd.com/ai-generated-music-unravelling-the-copyright-conundrum/

information to produce new works, could not be sufficiently covered by the fair use frameworks in place today. It is still unclear and heavily context-dependent whether AI-generated outputs are sufficiently transformative to qualify as fair usage.

Without explicit rules, using AI tools to use copyrighted content for training might violate artists' rights and result in the work's possible value. AI-generated products that mimic copyrighted works might reduce the financial gains for original artists and upset the fair use equilibrium, which is meant to promote the public interest without undermining the value of intellectual property.

4. RECOMMENDATIONS

After the thorough analysis of the existing literature and legislation, including review on the problem and gap of the research, the following recommendations are arrived at:

Make legal definitions clearer: Copyright regulations must be modified so as to explicitly recognise AI as a non-human creator. To give further clarity, this must also involve acknowledging the user or creator of the AI tool as the legitimate author.

Ensure uniformity criteria for originality: Standards that balance the use of training data with fresh must be established, revolutionary material when defining originality in the context of AI outputs.

Put data use regulations into practice: Precise guidelines must be established for using protected content to train AI algorithms. To reduce the danger of infringement, this involves demanding licenses or permissions.

Create sui generis rights: To ensure fair use and innovation, establishing a special set of intellectual property rights for works must be considered, produced by AI that provides protection but is distinct from conventional copyrights.

Encourage transparency in AI development: To facilitate the tracking of data sources and prevent unintentional infringement, AI developers must be encouraged to implement transparent procedures.

5. CONCLUSION

AI-generated music poses a wide range of difficult problems for existing copyright systems, particularly with relation to originality, ownership, and authorship. With its emphasis on people, the Indian Copyright Act of 1957 finds it difficult to accommodate these new kinds of innovation. Copyright infringement issues necessitate immediate legislative revisions, as demonstrated by cases involving the unlawful use of protected content. The necessity of precise legal definitions, originality requirements, and rules governing the use of AI training data is emphasized in this study. A balanced framework that upholds the integrity of the creative industries, safeguards the rights of human creators, and advances technical advancement would result from putting these improvements into practice.