REDEFINING CREATIVITY: THE EFFECTS OF ARTIFICIAL INTELLIGENCE ON HUMAN MUSICAL INNOVATION

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Abstract: This article redefines creativity by examining the implications of artificial intelligence on music production, particularly in terms of ownership and copyright legitimacy. The rise of AI has revolutionized music creation, enabling individuals to compose music without traditional skills or prior knowledge, thereby challenging fundamental legal principles such as authorship and ownership. Ethical concerns regarding the reliability of AI-generated music further complicate this evolving landscape. The paper also explores how technology-driven cultural sensitivity has transformed consumer behavior, drawing on Roland Robertson's theory of glocalization. The study's findings highlight that current copyright laws are insufficient to regulate AI-driven music production, leaving critical legal questions unresolved. While economic relationships in the music sector remain defined, the research advocates for new legal frameworks to safeguard human rights and creative freedoms in the age of AI-enhanced music.

Keywords: Technology, Music, Artificial Intelligence, Creativity, Algorithmic, Copyrights, Human.

1. Introduction

AI is reshaping industries that previously depended on human

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skills and expertise. With today's advanced technology and accelerated progress, Weng et al. argue that the rapid advancements in artificial intelligence have significantly impacted various social domains, revolutionizing the way we work and interact (1-10). American computer scientist and Microsoft technical fellow Eric Joel Horvitz presents a report analyzing AI's influence across multiple sectors, based on a study panel at Stanford. The report examines key areas such as transportation (self-driving cars), healthcare (disease detection and treatment) and employment (emerging job alternatives). Horvitz discusses AI's swift evolution and considers its future global consequences, highlighting ethical concerns and the need for accountable artificial intelligence (1-52). While acknowledging potential risks, the report also explores opportunities AI presents. Notably, it addresses the transformation of the music sector, where AI-driven systems are increasingly taking over roles traditionally performed by musicians, composers and producers.

Furthermore, Jason Furman from the Harvard Kennedy School and Robert Seamans from the NYU Stern School of Business argue that AI poses a threat to traditional professions, as AI-driven automation is increasingly capable of replacing human labour, leading to job displacement (161–186). They extend this concern to the music sector, noting that AI is now capable of composing melodies, generating complex chord progressions and utilizing bots for remixing and analyzing intricate compositions. As a result, AI has emerged as a transformative force in music production. This shift has introduced uncertainty in defining creativity and originality. Music, being deeply personal, is often tied to an artist's cultural aesthetics and emotions. However, as artificial intelligence becomes more integrated into music production, critical questions arise regarding the future of musical invention and the role of AI-generated compositions.

2. AI's Impact on Music Composition and Experimentation

Artificial Intelligence has significantly influenced music creation, particularly during and after the Covid pandemic. AI-powered

tools enable musicians, regardless of formal training, to explore new sounds, genres and composition techniques. Algorithmic programs such as Amper Music facilitate the creation of highly elaborate compositions, democratizing access to musical innovation (Dash & Agres, 3-8). These advancements usher in an era of unprecedented musical invention, allowing artists to push creative boundaries. AI enhances time-to-market efficiency, aids the creative process and fosters collaboration across in geographical boundaries. As Tatar et al. (2023) note, the idea of machine-assisted music composition has been a subject of interest since the 1950s and 60s, but early experiments yielded unsatisfactory results (293-297). However, modern AI systems, powered by deep learning, are far more sophisticated than their revolutionizing predecessors, production music and consumption.

The interplay between globalization and localization has transformed how music is consumed and disseminated. Wai Chung Ho (HKBU) highlights how digital music consumption in Hong Kong has reshaped cultural identity and social structures. Technological advancements have not only influenced musical styles but also altered how individuals engage with musicselecting, curating and generating playlists that define their personal tastes (Ho, 143-157). While previous studies on globalization often emphasized its role in eroding local cultures, Ho challenges the notion of cultural imperialism. Instead, he argues that globalization and localization are interrelated processes that coexist. This perspective aligns with Arjun Appadurai's concepts of *mediascape* and *ideoscape*, which describe how global media and ideologies merge with local traditions. The notion of glocalization further explains how global trends adapt to local values and tastes, reinforcing the active role of domestic players in shaping cultural expressions (295-310).

Historical examples, such as the evolution of Rebetika – often referred to as the "Greek blues" – illustrate how marginalized musical styles undergo syncretic transformations. Originally associated with Greece's underprivileged communities, Rebetika underwent a fusion of diverse musical traditions in the 1930s, evolving into a distinctive genre (Roderick et al., 401-402). This process mirrors the ways in which AI-generated music assimilates various styles, potentially redefining cultural authenticity in contemporary musical landscapes.

3. Creativity, Authorship and the AI Dilemma

A fundamental concern surrounding AI-generated music is the question of creativity. Traditionally, music has been regarded as a deeply human expression, shaped by personal experiences, intuition and emotional depth. Creativity has long been considered an innate human trait, transcending patterns to produce novel and meaningful compositions (Ullah et al., 180-204). With AI's increasing role in composition, this paradigm is shifting. AI systems can imitate and even approximate human musical styles, leading to debates over whether AI-generated compositions are genuinely creative or merely algorithmic reproductions. While AI can replicate structures and patterns, it lacks the lived experiences that imbue human music with emotional resonance. Consequently, critics argue that AI compositions, though technically sophisticated, may lack the depth and authenticity found in human-made music.

Al's ability to generate vast amounts of music at unprecedented speeds raises concerns about the commodification of music. If AI dominates production, there is a risk that music may become a purely commercial product, devoid of emotional and cultural significance. The mass production of AI-generated music could overshadow human composers, reducing their role in the creative process. Nonetheless, AI's integration into music does not necessarily signal the obsolescence of human creativity. Instead, it can serve as a collaborative tool that enhances, rather than replaces, artistic expression. By leveraging AI's capabilities, musicians can experiment with new creative possibilities while retaining the core elements of human expression that define meaningful music.

4. Ownership and Copyright Dilemmas

As AI-generated music becomes more prevalent, legal and ethical questions surrounding ownership and copyright emerge (Ullah et al., 180-204). Who owns a composition created by AI – the user who inputs the parameters, the company that develops the algorithm, or the AI itself? These issues challenge conventional copyright frameworks, which are traditionally designed for human-authored works (Dermawan, 44-68). Deng et al. (1-10) highlight the complexities of attributing authorship in an era where AI can autonomously generate compositions. Without clear regulations, major tech companies with access to advanced AI tools could monopolize the music industry, marginalizing independent musicians who lack the resources to compete. Such developments could further commercialize the industry, favouring mass-produced, algorithmically optimized content over innovative, artist-driven creations.

Again, copyright laws distinguish between an author and their work, with ownership based on the originality of the created product. Scheffler et al. (2022) emphasize that originality is the foundation of copyright policy, defining what content warrants legal protection and what does not (37-49). In the Indian context, Falguni Khaparde (2024) notes that lullabies that soothe infants and anthems that energize spirits have become integral to daily life. Copyright in music refers to the ownership of either the composition or the recorded performance, granting the holder exclusive rights to reproduce, license, and earn royalties from the work. Essentially, copyright law safeguards artistic freedom as expressed through music (IPLF).

However, artificial intelligence challenges traditional notions of music creation, authorship, and ownership. Platforms such as OpenAI's Jukedeck and Google's Magenta demonstrate AI's capability to generate unique, high-quality music comparable to human compositions. This raises pressing questions: Who owns AI-generated works—the AI's developer, the user, or no one at all? Should AI-generated music be protected under copyright law? Scheffler et al. introduce a crucial dimension by discussing the 'dichotomy between ideas and expression in copyright law' (37-49). As AI transitions from being a mere tool to an active creative partner, its role in artistic production becomes more complex. For instance, the song "Break Free" by award-winning American artist and strategist Taryn Southern (2018) was composed with AI tools, exemplifying a collaboration where AI not only supports but also contributes to the music-making process (YouTube). A news report highlighted that Southern's video for "Break Free" garnered over two million views, underscoring AI's growing influence in the music industry (Fox 5, 2018).

Wellett Potter, a lecturer in law at the University of New England, points out that copyright frameworks struggle to keep pace with AI-generated music (The Conversation). Applications like Suno and Udio, which enable users to create music through AI-generated prompts, further complicate ownership debates. Suno claims ownership of content generated under free usage while allowing paid users to retain rights to their recordings. In contrast, Udio does not claim ownership. Under Australian law, copyright applies only to works involving human creativity, leaving AI-generated compositions in a legal gray area (Ibid.). Potter argues that using AI to replicate artists' styles without consent is unethical and that incorporating a 'right of publicity' could help safeguard individual creators' rights (Ibid.).

Khaparde similarly highlights the legal and ethical challenges AI poses for copyright in India. Since AI is not legally recognized as an "author," ownership and royalty rights for AIgenerated content remain ambiguous. The complexity increases in human-AI collaborations, making it difficult to determine authorship and fair compensation (IPLF). She argues that India may need a specialized legal framework to address these collaborative creations if AI is ever granted authorship rights. Rather than displacing human creativity, AI should be seen as an enhancement, necessitating fair laws that balance innovation with protecting human creators' rights (Ibid.). As AI continues to shape the future of music, global copyright laws must evolve to accommodate both human artists and AI-generated works. While a cooperative legal approach could foster innovation, it also raises concerns about creativity and piracy. AI, trained on vast musical datasets, may inadvertently generate works resembling existing compositions, leading to disputes over originality. Nevertheless, AI's impact on music forces a reevaluation of long-standing assumptions about artistic authorship, originality, and copyright ownership. Finding a balanced legal framework will be essential in fostering both technological progress and artistic integrity in the evolving musical landscape.

Beyond legal concerns, AI's increasing role in music raises ethical dilemmas. Music has historically been an art form rooted in human storytelling and cultural heritage. If AI-generated music dominates the market, it risks diluting the personal and communitarian narratives that music has traditionally conveyed. Moreover, the potential for AI to prioritize commercially viable patterns over artistic experimentation could homogenize musical diversity. If algorithms dictate music production, there is a risk that unique and culturally significant styles may be filtered out in favor of formulaic, market-driven compositions.

5. AI as a Collaborative Partner in Musical Creativity

As I have already mentioned above, Artificial Intelligence has redefined the creative landscape of music composition, transforming the artistic process into a dynamic collaboration between human ingenuity and machine intelligence. The paradigm shift in music creation has been propelled by AI-driven tools that allow musicians – both trained and untrained – to compose, experiment, and innovate. Anirban Mukherjee (Cornell University) and Hannah H. Chang (Singapore Management University) (2023) highlight that the rapid advancement of AI has led to interconnections between technology and human creativity, positioning music as one of the most explored domains in AI research (1-14). While AI has the capacity to generate novel compositions, its role extends beyond mere automation; it serves as a creative assistant that supplements human expression. AIbased platforms, such as those studied by Vechtomova & Sahu (2023), provide musicians with expanded creative possibilities, offering new directions in composition, improvisation and arrangement (1-15). However, this evolution raises fundamental questions about artistic originality and the essence of human contribution to music.

6. Generative AI: Amplifying Human Creativity

The rise of generative AI in music composition has reshaped traditional notions of authorship. Early AI-driven composition models sought to replicate human composers, but recent advancements focus on augmenting human creativity rather than replacing it. AI systems now interpret user input in meaningful ways, allowing individuals with no formal musical training to explore and construct their own compositions (Xia et al., 1-22). This shift underlines AI's potential to democratize musicproduction, making creativity more accessible to a wider audience. Some scholars advocate for AI's role in enhancing human emotions through music composition (Epstein et al., 1110-11). This perspective aligns with a more integrative approach – one that views AI as a facilitator of artistic exploration rather than a replacement for human musicians. AI-based models can analyze existing compositions, recognize structural constraints, and generate new works within a particular stylistic framework. This capability allows composers to synthesize fresh sounds while maintaining cultural and artistic authenticity.

As AI systems generate compositions indistinguishable from human-created works, the question emerges: To what extent can an algorithm "create" in the same way a human does? This debate is not merely academic—it has tangible implications for artistic recognition, intellectual property and cultural preservation. Some researchers, such as Hirawata & Otani (1-9), argue that AIgenerated music risks diminishing the human element of composition, reducing it to a data-driven process devoid of genuine artistic intent. Conversely, proponents like Civit et al. (1-42) suggest that AI should be viewed as an extension of human creativity, providing artists with innovative tools to refine their craft.At the same time, concerns about AI's potential to overshadow human composers highlight the need for a balanced approach—one that prioritizes collaboration over replacement. Jennifer Haase and Paul H. P. Hanel emphasize the importance of assessing AI's impact on cultural and artistic ecosystems (1-7). While theoretical models of AI can generate music autonomously, the goal should be to support and elevate human creativity rather than to replace it. AI can serve as a powerful ally in music-making, fostering an environment where technological advancements and artistic traditions coexist harmoniously.

7. The Glocalization Effect on Music

Glocalization, the process of adapting global products and practices to local contexts, is transforming music consumption patterns by blending global trends with regional preferences. Victor N. Roudometof notes that Roland Robertson introduced glocalization into social science, with George Ritzer expanding on his ideas (392). In music, AI plays a pivotal role by personalizing content, incorporating local musical elements such as scales and rhythms to create culturally relevant material that resonates with diverse audiences. This integration satisfies local tastes while maintaining global appeal.

Will Page and Chris Dalla Riva (2023) argue that, contrary to the idea that globalization creates a uniform global culture, local music scenes continue to thrive alongside global streaming platforms. They highlight how regional markets remain resilient, bolstered by decentralization and increased consumer agency (22-24). However, they caution that market-driven glocalization, while fostering local creativity, raises concerns about regulatory challenges. For example, the rise of Italian artist Pinguini Tattici through streaming illustrates glocalization's ability to connect local cultures with global audiences (17). Lesota et al. examine the role of online music consumption through recommender systems, showing how algorithms can prioritize domestic music while promoting international artists. Their research highlights the ongoing influence of U.S. music, but also the significant presence of local music in certain regions like Sweden, Brazil and Finland (291-297). David Hebert and Mikolaj Rykowski view glocalization as a dynamic, dialectical process that allows local music to reach new audiences and evolve. Rather than diminishing local culture, globalization fosters innovation within regional musical traditions. Glocalization, driven by AI and streaming, enriches music consumption by expanding local artists' reach while preserving distinct cultural identities (xxiii-xxx).

8. Human vs. AI Creativity: Can AI Innovate Music?

As applied to music, analyzing AI's possibilities for participation in the creation and performance process constitutes an intriguing and multifaceted case for innovation and creativity. Unlike music created by human beings that stems from experiences, feelings, or even cultural norms and aesthetics, AI music is made from algorithms and the reprogramming of musical segments (Wang et al., 6381–401). Here, the researcher has taken Bob Dylan as a case study. Dylan, "for having created new poetic expression within the great American song tradition," was awarded the Nobel Prize for literature in 2016 (The Nobel Prize). One beauty of Dylan's songs is that progressions are simple, and the lyrics are straightforward and based on human experiences. Dylan's songs, such as "Blowin' in the Wind" (Dylan, 1962), are among the finest examples. A Senior Research Fellow at Harris Manchester College and Associate Professor at the University of Oxford, Liam Gearon, describes Dylan as one of the key contributors to countercultural concerns while arguing that Dylan has spent his whole life searching for meaning and purpose through the songs he has written, many of which address personal and political messages as well as existential anxiety and romance both on physical and metaphysical levels (166-181). Let's take another example from the poem "Ink of Desire" (Hakim, 2023), which depicts the pinnacle of human emotions.

Hunger continues to prevail hues, to shine on them a ravenous death. It feeds yearnings: raw meat and blood, prolonging famishness to feed aches: fresh salad. Hunger fed by tears tastes bitter when love succumbs to lust and fear. She creates a broken world:

An endless void, unending hole, discombobulated souls (Allpoetry, 2023).

Hunger, or the physiological need in a metaphorical portraval, is described as death affecting life and delineating experience as it fades out all colors. This passion, for want of tears, ends in a shattered universe, a wasted society for all despaired. Deducidly, one can imagine how the human mind is a beautifully crafted object that conveys and depicts ideas. However, composing by AI may not have a deeper humanist perspective (Pachet et al., 1-37), upon which a question arises: if the music is made from algorithms, then who designed the algorithms? One answer could be that humans fed algorithms the narratives of human experiences. Hence, it may be deduced that, in any stance, AI-generated music will remain an amalgamation and regeneration of human experiences and observations because AI cannot observe or experience but can blur the differences through glocalization. Additionally, while using AI, one can recreate and remodel various musical styles and forms. Appending AI can also be useful for attaining new ideas and building new structures and progressions based on the experiences and observations of the humans fed to AI and inspiring musicians. "Daddy's Car (Sony CSL, 2016) and "Lovesick (Southern, 2018)" are examples of such works.

Pachet also asserts that it is clear that human musicians play the most essential role in creating musical pieces (Ibid.). At the same time, it has also been suggested that issuing a disclaimer, such as one produced by the joint effort of humans and Flow Machines, may solve the problem. But does it solve the problem?The use of AI in creative activities could be viewed from potential benefits to hefty drawbacks. Even if current AI is not sophisticated enough to create music of the same creativity and emotional range as human-composed work, it represents an opportunity to extend the musical design and provide new ideas for artists. An anonymous human-poetic expression says, *have we fractured into fragments, or is our dispersion merely the aftermath of breaking? We are endlessly seeking the origin of this heart's ruin* (emphases added in italics). Since the world is going in an unknown direction, strife to answer the questions may seem challenging. However, it remains to ask compelling questions on how creativity between humans and artificial intelligence will progress and shape the future of music production.

9. Conclusion

Artificial Intelligence is profoundly reshaping the landscape of music production, offering boundless opportunities while simultaneously unsettling traditional notions of creativity, authorship and cultural preservation. By granting anyone the power to compose and arrange music, AI democratizes artistic expression, yet it also beckons a host of ethical and legal quandaries. As AI intertwines with the creative process, it compels us to reconsider the very essence of originality and ownership, as the once-clear demarcation between human and machine contributions grows ever more indistinct. Though AIgenerated compositions offer innovative supplements to human artistry, they lack the emotional depth and lived experiences that are the hallmarks of traditional music-making. The swift ascent of AI exposes the inadequacies of existing copyright laws, struggling to reckon with non-human creators. Questions surrounding ownership, attribution and economic sustainability challenge the established legal framework, threatening to upend the livelihoods of musicians, composers and industry professionals. Moreover, AI introduces 'glocalized' influences that preserve and simultaneously reshape cultural identities in ways we cannot predict. Whether AI-generated music will enrich artistic diversity or risk homogenizing creativity is a debate still unfolding. Ultimately, the future of music hinges on how we choose to integrate AI into artistic practice. Left unchecked, AI may reduce music to a mechanized, commodified form devoid of soul. Yet, with careful regulation, ethical stewardship and a dedication to humanistic creativity, AI could become a powerful collaborator rather than a mere replacement. The true challenge lies not just in the technological realm, but in the philosophical one: will we embrace a world dominated by algorithmic art, or will we safeguard the ineffable complexity of human expression?

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